ENVIRONMENTAL IMPACT REPORT

NORTHGATE MALL REDEVELOPMENT PROJECT

SAN RAFAEL, CALIFORNIA

SCH# 2021120187

LSA

January 2024

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SAN RAFAEL, CALIFORNIA

SCH# 2021120187

Submitted to:

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LIST OF ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
2020 UWMP	2020 Urban Water Management Plan
2021 Phase I ESA	2021 Phase I Environmental Site Assessment
AAQS	Ambient Air Quality Standards
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACC	air-cooled chiller
ACMs	asbestos-containing materials
AFY	acre-feet per year
AHU	air handlling unit
Air Basin	San Francisco Bay Area Air Basin
amsl	above mean sea level
APCD	Air Pollution Control District
APN	Assessor's Parcel Number
APS	Alternative Planning Strategy
AQ/GHG Technical Report	Air Quality and Greenhouse Gas Emissions Technical Report
Archaeological Report	Archaeological Resources Inventory Report
AUF	acoustical usage factor
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan
BASMAA	Bay Area Stormwater Management Agencies Association
Bay Area	San Francisco Bay Area
BCDC	San Francisco Bay Conservation and Development Commission
BMPs	Best Management Practices
BMR	below market rate
BPMP	Bicycle and Pedestrian Master Plan

BTU	British thermal units
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Program
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
California Register	California Register of Historical Resources
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAPs	compacted aggregate piers
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CAT	Climate Action Team
CBC	California Building Code
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CCAP 2030	Climate Change Action Plan 2030
CCMU	Community Commercial Mixed Use
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
City	City of San Rafael

Clean Air Plan	217 Bay Area Clean Air Plan
CMA	Congestion Management Agency
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Commercial Forecast	2018-2030 Uncalibrated Commercial Sector Forecast
Construction General Permit	General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities
County	County of Marin
CPUC	California Public Utilities Commission
CT-RAMP	Coordinated Travel – Regional Activity-Based Modeling Platform
CUPA	Certified Unified Program Agency
dB	decibels
dBA	A-weighted decibels
DDCs	drilled displacement columns
DDT	dichlorodiphenyltrichloroethane
DE	Design Earthquake
DEH	Marin County Department of Environmental Health
Design Guidelines	San Rafael Design Guidelines
DHS	Department of Health Services
DOC	California Department of Conservation
DOE	United States Department of Energy
DOT	United States Department of Transportation
DPM	diesel particulate matter
DPW	Department of Public Works
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EJ	environmental justice

EMS	emergency medical service
EO	Executive Order
EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
ERP	Emergency Recovery Plan
ESL	Environmental Screening Level
ESMP	Environmental Site Management Plan
EV	electric vehicle
FAR	floor area ratio
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIGR	Federated Indians of Graton Rancheria
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
FTA Manual	*Transit Noise and Vibration Impact Assessment Manual*
General Plan	San Rafael General Plan 2040
General Plan EIR	San Rafael General Plan 2040 & Downtown Precise Plan Environmental Impact Report
GHG	greenhouse gas
Graton Rancheria	Federated Indians of Graton Rancheria
Greenbook	Policy on Geometric Design of Highways and Streets
GSAs	groundwater sustainability agencies
GSPs	groundwater sustainability plans
GWh	gigawatt-hours
GWP	global warming potential
HAA	Housing Accountability Act
HBMS	Hazardous Building Materials Survey
HCA	Housing Crisis Act

HCD	Department of Housing and Community Development
HDM	Highway Design Manual
HFCs	hydrofluorocarbons
HHWs	household hazardous wastes
HMBPs	Hazardous Materials Business Plans
HMTA	Hazardous Materials Transportation Act
HRA	High-Resource Area
HRE	Historical Resource Evaluation
HSC	Health and Safety Code
HVAC	heating, ventilation, and air conditioning
I-580	Interstate 580
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
JPA	Marin Hazardous and Solid Waste Management Joint Powers Authority
kBTU	thousand British thermal units
kWh	kilowatt-hours
kWh/yr	kilowatt-hours per year
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night average level
LED	light-emitting diode
L_{eq}	equivalent continuous sound level
LGVSD	Las Gallinas Valley Sanitary District
LHMP	Local Hazard Mitigation Plan
LID	Low Impact Development
L_{max}	maximum noise level
LOS	level of service
LUST	leaking underground storage tank
Marin OES	Marin County Sheriff's Office of Emergency Services

Marin Water	Formerly Marin Municipal Water District
MAZ	Micro-Analysis Zone
MBTA	Migratory Bird Treaty Act
MCE	Marin Clean Energy
MCEP	Marin Climate & Energy Partnership
MCE_R	Risk-Targeted Maximum Considered Earthquake
MCM LHMP	Marin County Multi-Jurisdictional Local Hazard Mitigation Plan
MCSD	Miller Creek School District
MEI	maximally exposed individual
mgd	million gallons per day
MHHW	Mean Higher High Water
MLD	Most Likely Descendant
MMI	Modified Mercalli Intensity
MMT CO_2e	million metric tons of carbon dioxide equivalent
MMWD	Marin Municipal Water District
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
MTBE	methyl-tert-butyl-ether
MTC	Metropolitan Transportation Commission
MUTCD	Manual on Uniform Traffic Control Devices
MW	megawatts
M_W	Moment Magnitude
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NAVD 88	North American Vertical Datum of 1988
NEHRP	National Earthquake Hazards Reduction Program

NEPA	National Environment Policy Act
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NWIC	Northwest Information Center
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHP	Office of Historic Preservation
OPC	California Ocean Protection Council
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Osher JCC	Osher Marin Jewish Community Center
PAHs	polycyclic aromatic hydrocarbons
Parkin Architects	Parkin Architects, Engineers and Planners
Pb	lead
PCBs	polychlorinated biphenyls
PCE	tetrachloroethylene
PD	Planned Development
PD District	Planned Development District
PDA	Priority Development Area
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
Phase 1	2025 Master Plan
Phase 2	2040 Vision Plan
PID	photoionization detector
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size

$PM_{2.5}$	particulate matter less than 2.5 microns in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
POTWs	publicly owned treatment works
PPA	Priority Production Area
ppm	parts per million
PPV	peak particle velocity
PPV	peak particle velocity
PRC	Public Resources Code
project	Northgate Mall Redevelopment Project
Promenade Conceptual Plan	North San Rafael Vision Promenade Conceptual Plan
PSA	Permit Streamlining Act
RASS	Residential Appliance Saturation Survey
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RHNA	Regional Housing Needs Allocation
ROG	reactive organic gases
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCP	Stormwater Control Plan
SCS	Sustainable Communities Strategy
SCWA	Sonoma County Water Agency
SDWA	Safe Drinking Water Act
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SGMP	Soil and Groundwater Management Plan
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLF	Sacred Lands File

Small MS4 Permit	General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems
SMART	Sonoma-Marin Area Rail Transit
SO_2	sulfur dioxide
SR-37	State Route 37
SRA	State Responsibility Area
SRCS	San Rafael City Schools
SRFD	San Rafael Fire Department
SRPD	San Rafael Police Department
Survey	San Rafael Historical/Architectural Survey
SUV	sport utility vehicle
SVP	Society of Vertebrate Paleontology
SWAT	special weapons and tactics
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAM	Transportation Authority of Marin
TAMDM	Transportation Authority of Marin Demand Model
TAZ	Transportation Analysis Zone
TCE	trichloroethylene
TIA Guidelines	Transportation Impact Analysis Guidelines
TIS	Transportation Impact Study
TMDL	total maximum daily load
TPA	Transit Priority Area
tpd	tons per day
TRA	Transit-Rich Area
Transform	Transform SR Holding Management LLC
TSCA	Toxic Substances Control Act
US-101	United States Route 101
USGS	United States Geological Survey
UST	underground storage tank

UWMP	Urban Water Management Plan
VdB	vibration velocity decibels
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VMT/SP	vehicle miles traveled per service population
VOCs	volatile organic compounds
vph	vehicles per hour
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
WHO	World Health Organization
WMP	Waste Management Plan
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant
YMCA	Young Men’s Christian Association
ZEV	zero emission vehicle
ZNE	zero net energy

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS EIR

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the potential environmental impacts of the proposed Northgate Mall Redevelopment Project, also known as "Northgate Town Square" (project) submitted by Merlone Geier Partners, LLC (the project sponsor).[1] The City of San Rafael (City) is the CEQA Lead Agency for environmental review.

The purpose of this EIR is to inform City decision-makers, responsible agencies, and the general public about the proposed project and the potential physical environmental consequences of project implementation. This EIR also examines alternatives to the proposed project and recommends mitigation measures to reduce or avoid potentially significant physical environmental impacts to the extent feasible. This EIR will be used as an informational document by the City's Planning Commission and City Council, responsible agencies, and the public in their review of the proposed project and associated approvals described below and in more detail in Chapter 3.0, Project Description.

1.2 PROPOSED PROJECT

The approximately 44.76-acre project site consists of the existing Northgate Mall, which is generally located at 5800 Northgate Drive in San Rafael, Marin County, California. The project site is bordered to the north and east by Las Gallinas Avenue and by Northgate Drive to the south and west. The project site is currently developed with the Northgate Mall, which consists of 11 buildings totaling approximately 942,597 square feet of building space, including an approximately 176,090-square-foot parking garage. The remainder of the site consists of surface parking and landscaped areas.

The proposed project would result in the redevelopment of the existing mall through demolition, renovation, and new construction with a mix of commercial and residential land uses. The proposed project would be developed in two phases. Phase 1 (also referred to as the 2025 Master Plan) would generally include the demolition of the RH Outlet building, the HomeGoods building, and the Mall Shops East, which is approximately 144,432 square feet of the main building, and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units. Phase 2 (also referred to as the 2040 Vision Plan) would generally include the demolition of the 254,015-square-foot Macy's building and 79,051-square-foot Kohl's building, and the construction of up to 55,440 square feet of new commercial space and up to 500 additional residential units.

At full buildout, the project would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units in six areas of the project site (1,746,936 square feet of residential area), 147 of which would be affordable units. A total of 648,807 square feet of existing building space would be demolished, and the total commercial area would be reduced by a

[1] Merlone Geier Partners, LLC. 2022. City of San Rafael General Planning Application for the Northgate Town Square Project. June 11. Updated May 2023.

total of 548,987 square feet.[2] Building heights across the project site would vary, with a maximum of approximately 78 feet. The first phase of the proposed project would include the construction of a Town Square near the center of the project site; additional common open space and landscaped areas would be provided in both the first and second phases. New internal roadways would be built within the project site that would provide access to each of the new buildings and surface parking lots.

Discretionary actions by the City that would be necessary for development of the proposed project include environmental review, rezoning, an Environmental and Design Review Permit, a Development Agreement, a tentative subdivision map, and a Master Sign Program. The project sponsor is also requesting to use the density bonus to modify the development standards for height on the project site.

1.3 EIR SCOPE

The City circulated a Notice of Preparation (NOP) informing responsible agencies and interested parties that an EIR would be prepared for the proposed project and which indicated the environmental topics anticipated to be addressed in the EIR. The NOP was published on December 9, 2021, and the NOP was mailed to public agencies, neighborhood organizations, property owners within the same zip code as the project site as well as individuals likely to be or who had previously expressed an interested in the potential impacts of the proposed project. A scoping session was held as a public meeting before the Planning Commission on January 11, 2022, to solicit feedback regarding the scope and content of the EIR. Both verbal comments from members of the Planning Commission and the public provided during the scoping session and written comments provided by State, regional, and local agencies and members of the public on the NOP were received by the City and considered during preparation of this EIR. Copies of the NOP, comment letters, and a summary of the verbal comments received are included in Appendix A.

Based on consultation with City staff and review of the comments received during the scoping process, the following environmental topics are addressed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, of this EIR:

- 4.1 Land Use and Planning
- 4.2 Population and Housing
- 4.3 Visual Resources
- 4.4 Cultural Resources
- 4.5 Tribal Cultural Resources
- 4.6 Geology and Soils
- 4.7 Hydrology and Water Quality
- 4.8 Hazards and Hazardous Materials
- 4.9 Transportation
- 4.10 Air Quality

[2] It should be noted that proposed square footages, residential unit mix, and other elements of the project have been refined since publication of the NOP, and that the project plans may be subject to continued refinement prior to consideration of project approval. The analysis in this EIR evaluates the maximum development potential for the proposed project. None of the project revisions since the NOP publication materially alter the type or scope of potential environmental effects that might arise from the project, or deprive potential responders of an accurate understanding of the project and its potential effects, so as to require revision and republication of the NOP.

- 4.11 Greenhouse Gas Emissions
- 4.12 Noise
- 4.13 Public Services and Recreation
- 4.14 Utilities and Service Systems
- 4.15 Energy

Preliminary analysis determined that development of the proposed project would not result in significant impacts to the following environmental topics: agriculture and forestry resources, biological resources, mineral resources, and wildfire. Consequently, these issues are not examined in Chapter 4.0 of this EIR and are instead briefly addressed in Chapter 5.0, Other CEQA Considerations.

1.4 REPORT ORGANIZATION

This EIR is organized into the following chapters:

- **Chapter 1.0 Introduction:** Discusses the overall EIR purpose, provides a summary of the proposed project, describes the EIR scope, and summarizes the organization of the EIR.

- **Chapter 2.0 Summary:** Provides a summary of the impacts that would result from implementation of the proposed project, describes mitigation measures recommended to reduce or avoid potentially significant environmental impacts, and describes the alternatives to the proposed project.

- **Chapter 3.0 Project Description:** Provides a description of the project site, project objectives, proposed project, and uses of this EIR.

- **Chapter 4.0 Setting, Impacts, and Mitigation Measures:** Describes the following for each technical environmental topic: existing conditions (setting), potential environmental impacts of the proposed project and level of significance, and mitigation measures recommended to reduce or avoid identified potential impacts. Potential cumulative impacts are also addressed in each topical section. Potential adverse impacts are identified by levels of significance, as follows: significant impact (S), less than significant impact (LTS), and significant and unavoidable impact (SU). The significance of each potential impact is categorized before and after implementation of any recommended mitigation measure(s).

- **Chapter 5.0 Other CEQA Considerations:** Provides an analysis of effects found not to be significant, including the Initial Study findings, growth-inducing impacts, unavoidable significant environmental impacts, and significant irreversible changes.

- **Chapter 6.0 Alternatives:** Provides an evaluation of two alternatives to the proposed project in addition to the CEQA-required No Project alternative.

- **Chapter 7.0 Report Preparation:** Identifies preparers of the EIR and the references used.

- **Appendices:** The following appendices are available online at: https://www.cityofsanrafael.org/northgate-town-square-rev/:
    - Appendix A: Notice of Preparation and Comment Letters
    - Appendix B: Archaeological Resources Inventory Report
    - Appendix C: Historical Resources Evaluation
    - Appendix D: Geotechnical Investigation
    - Appendix E: Phase I Environmental Site Assessment
    - Appendix F: Transportation Impact Study
    - Appendix G: Signal Warrant Analysis
    - Appendix H: Transportation Operations Study
    - Appendix I: Air Quality and Greenhouse Gas Emissions Technical Report
    - Appendix J: Noise and Vibration Technical Report
    - Appendix K: Water Supply Assessment
    - Appendix L: Energy Analysis

2.0 SUMMARY

This chapter provides an overview of the proposed project and findings identified in this Environmental Impact Report (EIR), prepared pursuant to the California Environmental Quality Act (CEQA), including a discussion of alternatives and cumulative project impacts.

2.1 PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental consequences of implementation (i.e., construction and operation) of the proposed Northgate Mall Redevelopment (project) submitted by Merlone Geier Partners, LLC (the project sponsor). The approximately 44.76-acre site is located within the San Rafael Town Center in northern San Rafael, Marin County. The project site is generally bounded by Las Gallinas Avenue to the north and east and Northgate Drive to the south and west.

The project site is currently developed with an enclosed mall generally oriented on a north-south axis, with the main building located in the center of the project site and surrounded by surface parking and standalone buildings and structures. The main mall building, which is a total of approximately 605,283 square feet in size, consists of five sections: (1) Mall Shops East; (2) Mall Shops West; (3) Century Theatre; (4) RH Outlet;[1] and (5) Macy's. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure, and a vacant retail building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building. The existing gross leasable area (i.e., the total building square footage on the project site without the parking structure) is approximately 766,507 square feet. Currently there are a total of 2,899 parking spaces on the project site, comprising 2,380 standard spaces, 22 handicap spaces, and 15 van-size spaces within the surface parking lot, 473 spaces within the parking structure, and 9 on-street parking spaces between the main building and Kohl's building. Automobile access to the project site is provided via driveways from Las Gallinas Avenue and Northgate Drive. Landscaping on the project site consists of ornamental landscaping, including landscaping strips along the boundaries of the site that contain street trees and shrubs, planters with trees within the surface parking lot, and some mature trees located adjacent to the existing buildings. A total of 679 trees are located on the project site.

The proposed project would result in the redevelopment of the existing mall through demolition, renovation, and new construction with a mix of commercial and residential land uses. The proposed project would be developed in two phases. Phase 1 (also referred to as the 2025 Master Plan) would generally include the demolition of the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building, and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units. Phase 2 (also referred to as the 2040 Vision Plan) would generally include the demolition of the 254,015-square-foot Macy's building and 79,051-square-foot Kohl's building, and the construction of up to 55,440 square feet of new commercial space and up to 500 additional residential units.

[1] The RH Outlet building was formerly known as the Sears anchor. Certain project application materials refer to the building this way.

At full buildout, the project would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units in six areas of the project site (1,746,936 square feet of residential area), 147 of which would be affordable units. A total of 648,807 square feet of existing building space would be demolished, and the total commercial area would be reduced by a total of 548,987 square feet.[1] Building heights across the project site would vary, with a maximum of approximately 78 feet. The first phase of the proposed project would include the construction of a Town Square near the center of the project site. Additional common open space and landscaped areas would be provided in both the first and second phases. New internal roadways would be built within the project site that would provide access to each of the new buildings and surface parking lots.

Discretionary actions by the City of San Rafael (City) that would be necessary for development of the proposed project include environmental review, rezoning, an Environmental and Design Review Permit, a Development Agreement, a tentative subdivision map, and a Master Sign Program. The project sponsor is also requesting to use the density bonus to modify the development standards for height on the project site.

Refer to Chapter 3.0, Project Description, for a complete description of the project's location, context, and objectives, details of the proposed project itself, and a summary of required approvals and entitlements.

2.2 POTENTIAL AREAS OF CONTROVERSY

A total of 55 commenters submitted written responses to the Notice of Preparation (NOP), which was published on December 9, 2021, in addition to the verbal comments received at the public scoping session held on January 11, 2022. The NOP and comments received are included in Appendix A. Comments in response to the NOP generally identified the following areas of potential concern and were considered in the noted topical sections of the EIR:

- Consistency with the San Rafael General Plan and other relevant planning and policy documents (addressed in Section 4.1, Land Use and Planning Policy)
- Population and housing, including residential density and provision of inclusionary housing (addressed in Section 4.2, Population and Housing)
- Aesthetics, including impacts to visual character and scenic views, and nighttime lighting (addressed in Section 4.3, Visual Resources)

[1] It should be noted that proposed square footages, residential unit mix, and other elements of the project have been refined since publication of the NOP, and that the project plans may be subject to continued refinement prior to consideration of project approval. The analysis in this EIR evaluates the maximum development potential for the proposed project. None of the project revisions since the NOP publication materially alter the type or scope of potential environmental effects that might arise from the project, or deprive potential responders of an accurate understanding of the project and its potential effects so as to require revision and republication of the NOP.

- Archaeological and tribal cultural resources (addressed in Section 4.4, Cultural Resources, and Section 4.5, Tribal Cultural Resources)
- Geology and soils and stability of site soils to support new building loads (Section 4.6, Geology and Soils)
- Hydrology and water quality, stormwater treatment, and impacts to nearby receiving waters, including Gallinas Creek (addressed in Section 4.7, Hydrology and Water Quality)
- Hazards and hazardous materials in existing buildings and site soils, as well as operation period hazards (addressed in Section 4.8, Hazards and Hazardous Materials)
- Transportation including vehicle trips, vehicle miles traveled (VMT), on- and off-site circulation, emergency access, alternative modes of transportation, and parking (addressed in Section 4.9, Transportation)
- Construction and operation period air quality, including health risks to sensitive receptors (addressed in Section 4.10, Air Quality)
- Energy and greenhouse gas (GHG) emissions, including energy consumption and use of renewable and back-up energy sources (addressed in Section 4.11, Greenhouse Gas Emissions, and Section 4.15, Energy)
- Construction and operation period noise and vibration impacts on existing surrounding land uses and new project residents (addressed in Section 4.12, Noise)
- Public service impacts, including schools, police, fire, and library services, response times, and facilities (addressed in Section 4.13, Public Services and Recreation)
- Parks and recreational services and impacts to existing facilities (addressed in Section 4.13, Public Services and Recreation)
- Utilities and services, including water supply and utility infrastructure improvements, and solid waste (addressed in Section 4.14, Utilities and Service Systems)
- Biological resources including nesting birds, bats, and wildlife corridors (addressed in Chapter 6.0, Other CEQA Considerations)
- Wildfire and emergency evacuation (addressed in Chapter 6.0, Other CEQA Considerations)
- Cumulative impacts (addressed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, Sections 4.1 through 4.15)

Numerous comments on the merits, phasing, and design of the project as proposed were also received. These comments will be addressed separately through the City's evaluation of the

proposed project application and project approval process, which is separate from the CEQA review process.

2.3 SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter 4.0, Setting, Impacts, and Mitigation Measures, of this EIR.

2.3.1 Significant Impacts

State CEQA Guidelines Section 15382 defines a significant impact on the environment as "… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." As discussed in more detail in Chapter 4.0 of this EIR, impacts in the following areas would be potentially significant without the implementation of mitigation measures, but would be reduced to a less than significant level if the mitigation measures recommended in this report are implemented:

- Cultural Resources
- Tribal Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Transportation
- Air Quality
- Utilities and Service Systems

Impacts related to land use and planning, population and housing, visual resources, public services and recreation, and energy would be less than significant, and no mitigation measures would be required.

2.3.2 Significant Unavoidable Impacts

With implementation of the mitigation measures recommended in this EIR, all project impacts would be reduced to a less than significant level except for impacts to GHG emissions and noise, as follows:

- **Impact GHG-1:** The proposed project would not incorporate all of the Bay Area Air Quality Management District's (BAAQMD) recommended design thresholds to reduce GHG emissions; therefore, operation of the proposed project would generate GHG emissions that would have a significant effect on the environment.

- **Impact GHG-2:** Because the proposed project would generate GHG emissions that would have a significant effect on the environment, the proposed project would conflict with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

- **Impact NOI-2:** Phase 2 operation period noise levels would exceed the City's land use compatibility thresholds for future on-site sensitive receptors.

2.3.3 Cumulative Impacts

State CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that may be individually limited but cumulatively significant. These impacts can result from the proposed project when combined with other past, present, or reasonably foreseeable future projects. As described in Chapter 4.0 of this EIR, the cumulative impacts analysis in this EIR employs a projection-based approach and takes into account growth from the proposed project in combination with impacts from projected growth within San Rafael, as forecast by the San Rafael General Plan 2040. All identified impacts of the proposed project would be individually limited and would not be cumulatively considerable except for GHG emissions, which would result in significant unavoidable cumulative impacts.

2.3.4 Alternatives to the Project

In accordance with CEQA and the *State CEQA Guidelines* (Section 15126.6), an EIR must describe a reasonable range of alternatives to the project, or to the project's location, that could attain most of the project's basic objectives while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative" or which are infeasible.

The three alternatives to the proposed project discussed and analyzed in Chapter 5.0, Alternatives, of this EIR are:

- **No Project Alternative:** Under the No Project Alternative, the project site would continue to be occupied by the existing Northgate Mall, as described above in Section 2.1. A total of approximately 2,190 people could be employed on the project site at full occupancy, though this would continue to fluctuate based on market conditions.

- **Reduced Development Alternative:** Under the Reduced Development Alternative, only Phase 1 (also referred to as the Master Plan) of the proposed project would be implemented. Phase 1 would consist of the demolition of the two vacant retail buildings (Sears Auto Center and Sears Seasonal) totaling 28,500 square feet on the southern portion of the project site. Phase 1 of the proposed project also would include demolition of the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building. A total of 44,380 square feet of new commercial space would also be constructed, resulting in a total of 501,941 square feet of commercial space. Phase 1 would include the construction of a total of 922 residential units within three apartment-style residential buildings (containing 822 units) and 15 townhome buildings (containing 100 units), all located on a fourth parcel, resulting

in a residential population of 2,295. At least 10.4 percent of the 922 dwelling units constructed would be below market rate units set aside for low-income households (minimum of 96 dwelling units). It is estimated that Phase 1 would result in a reduction in employees from approximately 2,190 to 1,434.

- **Reduced Residential Alternative:** Under the Reduced Residential Alternative, the total number of residential units would decrease by 63 units compared to the proposed project, for a total of 1,359 units at buildout and a resulting residential population of 3,384. The reduction in the number of units would occur during implementation of Phase 1, with development of 859 residential units. Specifically, Residential 1 would be developed with 33 townhome units (63 fewer units and a different unit mix than the apartments proposed by the project), Residential 2 would be developed with 100 townhome units, Residential 3 would be developed with 280 apartment units, and Residential 4 would be developed with 446 apartment units. With the exception of the reduction in residential unit count and mix, all other elements of the Phase 1 2025 Master Plan and Phase 2 2040 Vision Plan proposed by the project would occur. At full buildout, the Reduced Residential Alternative would include a total of up to approximately 217,520 square feet of commercial space and up to 1,359 residential units, including 136 below market rate units set aside for low-income households. The below market rate units would be constructed throughout the project site and in compliance with Section 14.16.030 of the San Rafael Municipal Code.

The Reduced Residential Alternative would slightly reduce some of the potentially significant impacts of the proposed project through reduced construction and operational building intensities, including an overall reduction in the number of vehicle trips generated to and from the site, although none of the significant unavoidable project impacts would be avoided, and all project mitigation measures would still be required. The project objectives would also be largely met, although to a lesser extent than the proposed project, and the Reduced Residential Alternative would provide 63 fewer residential units than the proposed project, slightly reducing its contribution to alleviating the City's household deficit. Due to its slight reduction in environmental impacts, the Reduced Residential Alternative is considered the environmentally superior alternative.

2.4 SUMMARY TABLE

Information in Table 2.A, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter 4.0, Setting, Impacts, and Mitigation Measures. Table 2.A is arranged in four columns: (1) environmental impacts, (2) level of significance without mitigation, (3) mitigation measures, and (4) level of significance with mitigation. Levels of significance are categorized as follows:

LTS Less Than Significant
S Significant
SU Significant Unavoidable

For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter 4.0.

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.1: LAND USE AND PLANNING			
There are no significant impacts to land use and planning.			
4.2: POPULATION AND HOUSING			
There are no significant impacts to population and housing.			
4.3: VISUAL RESOURCES			
There are no significant impacts to visual resources.			
4.4 CULTURAL RESOURCES			
CUL-1: Project ground disturbance has the potential to unearth significant archaeological deposits or resources, resulting in a potential substantial adverse change on historical resources, as defined in State CEQA Guidelines Section 15064.5.	S	**CUL-1a, Preparation of a Cultural Resources Monitoring Plan.** Prior to issuance of a grading permit or building permit, the project sponsor shall retain an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology to prepare a Cultural Resources Monitoring Plan in consultation with the Federated Indians of Graton Rancheria (Graton Rancheria). The Cultural Resources Monitoring Plan shall include (but not be limited to) the following components for archaeological and Native American monitoring: ● Person(s) responsible for conducting archaeological monitoring ● Person(s) responsible for Native American monitoring ● Procedures for notification in the event of the identification of cultural resources, as well as methods for treatment of such resources (e.g., documentation, collection, identification, repatriation) ● Methods of protection for cultural resources, including items such as protective fencing, security, and protocol for notifying local authorities (i.e., law enforcement) should looting or other resource damage occur The Cultural Resources Monitoring Plan shall include a stipulation that, if significant archaeological or tribal cultural resources are identified, all work shall stop immediately within 100 feet of the resource(s). The Cultural Resources Monitoring Plan shall also include a stipulation that, during the course of the monitoring, the frequency of archaeological and Native American monitoring may be reduced from full-time to part-time based on the conditions and only if Graton Rancheria and the qualified archaeologist agree.	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CUL-1 (continued)		**CUL-1b, Cultural Resources and Tribal Cultural Resources Sensitivity WEAP Training.** Prior to issuance of a building permit, grading permit, or demolition permit involving any potential ground-disturbing activity (e.g., building foundation removal), all personnel involved in project-related ground-disturbing activities (e.g., on-site construction managers, backhoe operators) shall be required to participate in a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]). The WEAP shall be developed by an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology, in consultation with input from Graton Rancheria. The WEAP training shall be conducted before any project-related ground-disturbing activities (including building foundation removal) begin at the project site. The WEAP will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP will also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values. The WEAP training shall be presented by an archaeologist and a representative from Graton Rancheria. The project sponsor shall maintain a record of all construction personnel that have received the WEAP training and provide the record to the City. WEAP training recipient records shall be maintained by the project sponsor throughout the duration of construction. A final WEAP training recipient record shall be submitted to the City of San Rafael prior to issuance of a certificate of occupancy.	

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CUL-1 (continued)		**CUL-1c, Archaeological Monitoring and Resource Protection.** Archaeological monitoring shall be required during initial ground-disturbing activities of sediments on the project site (including building foundation removal). For example, archaeological monitoring shall not be required during excavation of sediments that have been previously monitored by an archaeologist. Any excavations that extend below sediments that were previously monitored shall be subject to archaeological monitoring. Monitoring procedures shall follow the Cultural Resources Monitoring Plan prepared under Mitigation Measure CUL-1. Construction crews shall stop all work within 100 feet of any archaeological discovery until an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology can assess the previously unrecorded discovery and provide recommendations. Resources could include subsurface historic-period features such as artifact-filled privies, wells, and refuse pits, and artifact deposits, along with concentrations of adobe, stone, or concrete walls or foundations, and concentrations of ceramic, glass, or metal materials. Native American archaeological materials could include obsidian and chert flaked stone tools (such as projectile and dart points), midden (culturally derived darkened soil containing heat-affected rock, artifacts, animal bones, and/or shellfish remains), and/or groundstone implements (e.g., mortars and pestles).	
4.5 TRIBAL CULTURAL RESOURCES			
TCR-1: Project ground disturbance has the potential to disturb, damage, or degrade either a tribal cultural resource or the contextual setting of such a resource, resulting in a substantial loss of the resource's cultural value as determined in consultation with the Federated Indians of Graton Rancheria.	S	**TCR-1a, Native American Monitoring.** Native American monitoring by a representative of the Federated Indians of Graton Rancheria (FIGR) shall be required during all initial ground-disturbing activities on the project site (including building foundation removal). Any excavations that extend below sediments that were previously monitored shall be subject to Native American monitoring. Monitoring procedures shall follow the Cultural Resources Monitoring Plan prepared under Mitigation Measure CUL-1a as described in Section 4.4 of the EIR. Construction crews shall stop all work within 100 feet of any tribal cultural resource discovery until the find has been assessed by an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology and by FIGR. Native American archaeological materials and tribal cultural resources could include obsidian and chert flaked stone tools (e.g., projectile and dart points), midden (culturally derived darkened soil containing heat-affected rock, artifacts, animal bones, and/or shellfish remains), and/or groundstone implements (e.g., mortars and pestles).	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TCR-1 (continued)		**TCR-1b, Survey of Site by Trained Human Remains Detection Dogs.** Prior to the issuance of a grading or building permit, the project sponsor shall provide written evidence to the City's Community Development Department that a consultant has been retained to conduct a survey of the site using trained human remains detection dogs with an FIGR tribal monitor present. The survey shall be performed after the demolition of structures, structure foundations, and paved areas but prior to when trenching, grading, or earthwork on the project site commences. If the survey results in the identification of an area potentially containing human remains, the area should be avoided. If avoidance of such areas is not feasible, then the City shall require that a professional archaeologist be retained to conduct subsurface testing in the presence of a tribal representative from the FIGR to verify the presence or absence of remains. If human remains are confirmed, then the procedures in Mitigation Measure CUL-1c shall be followed.	
4.6 GEOLOGY AND SOILS			
GEO-1: Proposed and existing improvements could be damaged due to expansive soil conditions.	S	**GEO-1, Lining of Bioretention Planters.** The project geotechnical engineer shall review the proposed bioretention planter designs for the project to determine whether the designs meet the geotechnical recommendations regarding lining of stormwater drainage swales to address expansive soil conditions. If the project geotechnical engineer indicates that any of the bioretention planters should include bottom liners to address expansive soil conditions, the bioretention planter designs shall be modified in accordance with the geotechnical engineer's recommendations. Modifications to bioretention planter designs shall account for potential increases in stormwater discharges that could occur from lining the bottoms of planters to ensure that the project would not increase stormwater discharges compared to existing conditions at the project site. Such modifications may include increasing the size/depth of bioretention planters, adding infiltration devices in areas that would not adversely affect proposed or existing improvements, or additional stormwater retention features such as bioswales or underground cisterns with metered outlets. The geotechnical review and potential modifications to project designs discussed above shall occur prior to the City of San Rafael (City) issuing grading or building permits for the project.	LTS
GEO-2: Placement of new loads on the project site, vibration-generating construction activities, and excavation and dewatering activities could result in subsidence, settlement, or differential settlement that could adversely affect the proposed and	S	**GEO-2, Preparation of a Design-Level Geotechnical Report.** The project sponsor shall define the extent of engineered fill that would be placed on the project site and extent of excavation that would occur for subsurface parking structures in the project plans. The project sponsor shall hire a qualified Geotechnical Engineer to prepare a design-level geotechnical report for the project that shall include the following: ● A design-level analysis of total and differential settlement that may occur for shallow foundations installed over areas of ground improvement, if ground improvement would be performed. This analysis must be based on site-specific design recommendations for	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
existing structures and other improvements.		ground improvement prepared in accordance with the recommendations of the 2021 Geotechnical Investigation for the project. ● A design-level analysis of potential total and differential settlement associated with the placement of defined amounts of fill material, ground improvement activities, construction of other improvements, and dewatering activities on the project site. The settlement analysis shall define buffer distances away from construction activities within which settlement could occur as a result of the project and shall describe the settlement amounts that could occur within these buffer distances. ● Allowable settlement estimates for planned and existing improvements both on the project site and within the buffer distances described above that shall account for estimated settlement amounts developed for existing and planned improvements on surrounding properties. ● Recommendations to minimize the amounts of subsidence/settlement and differential settlement that would result from the project (e.g., minimizing placement of fill, use of lightweight fill, and shoring systems that would limit the movement of adjacent improvements and minimize the amount of excavation dewatering required, such as interlocking sheet piles or soil-cement cut-off walls). ● Recommendations to mitigate potential damage to proposed and existing improvements (e.g., structures, pavement surfaces, roadways, underground parking structure, and utilities), both on and off the project site, that could result from settlement of existing unstable soil on and near the project site as a result of the project. Such recommendations could include installation of bracing/underpinning, installation of flexible utility couplings, or relocation of utilities. ● If the settlement analysis indicates that existing off-site improvements could be adversely affected by settlement as a result of the project, a pre-construction survey (e.g., crack survey) and settlement monitoring program shall be developed and implemented before and during construction for existing improvements that may be affected by the project. This survey shall be used as a baseline to evaluate any damage claims and also to assist the contractor in assessing the performance of shoring systems. The pre-construction	

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GEO-2 (continued)		survey shall record the elevation and horizontal position of all existing installations within the buffer distance determined by the settlement analysis as described above, and shall consist of, but not be limited to, photographs, video documentation, and topographic surveys. The settlement monitoring program shall include installation of inclinometers and groundwater monitoring wells within a distance of 5 to 15 feet from excavations for below-grade parking and toward existing improvements. Settlement surveys shall be performed on a weekly basis during excavation for below-grade parking and on a monthly basis starting approximately 1 month after the excavation has been completed and continuing for a period of at least 2 years after the completion of construction activities (or other frequency and duration as recommended by the Geotechnical Engineer of Record). The project plans and design-level geotechnical report shall be submitted to the City for review and approval prior to the City issuing grading or building permits. The project sponsor shall repair damages to existing or planned improvements if settlement monitoring identifies obvious damage or exceedance of allowable settlement amounts. The repair of damage shall be performed prior to the City issuing a certificate of occupancy for the project.	
GEO-3: The project could directly or indirectly destroy a unique paleontological resource or site.	S	**GEO-3, Paleontological Resource Protection.** Before the start of any excavation activities, the project sponsor shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology (SVP), who is experienced in training construction personnel regarding paleontological resources. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that could be seen during construction, and proper notification procedures should fossils be encountered. Should any paleontological resources be encountered during construction activities, all ground-disturbing activities within 50 feet of the find shall cease, and the City and project sponsor shall be notified immediately. The project sponsor shall immediately notify the qualified paleontologist and request that they assess the situation per SVP standards, consult with agencies as appropriate, and make recommendations for the treatment of the discovery if found to be significant. If construction activities cannot avoid the paleontological resources, adverse effects to paleontological resources shall be mitigated. Mitigation may include monitoring, recording the fossil locality, conducting data recovery and analysis, preparing a technical report, and providing the fossil material and technical report to a paleontological repository, such as the University of California Museum	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GEO-3 (continued)		of Paleontology. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City for review.	
4.7 HYDROLOGY AND WATER QUALITY			
HYD-1: Project dewatering could result in the migration of potential off-site groundwater contamination towards the project site.	S	**HYD-1, Prevent Potential Groundwater Contamination Migration.** The project sponsor shall coordinate with the appropriate regulatory agency (most likely the Regional Water Quality Control Board ([RWQCB]) to evaluate whether groundwater beneath the shopping center adjacent to the eastern perimeter of the project site has been contaminated by a release of hazardous materials. If groundwater contamination is identified at this off-site property, the project sponsor shall evaluate whether proposed dewatering activities could result in migration of off-site groundwater contamination to areas that were not previously contaminated. This evaluation shall include the following: ● A detailed analysis of soil formations that would be affected by excavation and dewatering activities, including an analysis of hydraulic conductivity through potential preferential pathways, including the buried former creeks and drainage ditch on and adjacent to the project site; ● A detailed description of proposed excavation shoring and dewatering systems, including dewatering locations, flow rates, and durations that would be required based on the soil formations present; and ● Hydraulic modeling to demonstrate potential changes to groundwater conditions, including changes in groundwater levels and flow directions, and potential movement of contaminated groundwater. If the evaluation indicates that project dewatering could result in migration of off-site groundwater contamination to previously uncontaminated areas, the proposed excavation shoring and dewatering system design shall be modified as necessary to ensure that project dewatering would not result in the migration of off-site groundwater contamination. Such modifications to the proposed shoring systems could include the use of interlocking sheet piles or soil-cement cut-off walls that can reduce dewatering requirements. The project sponsor shall submit the hydraulic evaluation and dewatering plans to the appropriate regulatory agency for review and approval. The project sponsor shall provide the City of San Rafael (City) with evidence of agency approval for the proposed dewatering activities prior to the City issuing permits for installation of excavation shoring or dewatering systems.	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.8 HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: Demolition or renovation activities may result in the release of PCBs into the environment.	S	**HAZ-1, Hazardous Building Materials Survey.** Prior to issuance of demolition or renovation permits for existing structures, the project sponsor shall perform a comprehensive Hazardous Building Materials Survey (HBMS) for the structures to be affected, which shall be prepared and signed by a qualified environmental professional, documenting the presence or lack thereof of polychlorinated biphenyls (PCBs) containing equipment and materials, and any other hazardous building materials. The testing for PCBs shall include, but not be limited to, sampling of hydraulic oil in elevator equipment at the former Sears facilities, and sampling of stained concrete near existing and former hydraulic elevator and lift equipment at the former Sears facilities. The location of the vault that contained the transformer oil leak in 1997 shall be identified through coordination with representatives of the project site, research of building plans, and/or by requesting such information from the Pacific Gas and Electric Company (PG&E); sampling of concrete for PCBS shall be performed in this vault. If the location of the transformer that leaked oil in 1997 cannot be identified, PCB sampling shall be performed at all concrete vaults that could potentially have been affected by a transformer oil release. The HBMS shall include abatement specifications for the stabilization and/or removal of the identified hazardous building materials in accordance with all applicable laws and regulations. The project sponsor shall implement the abatement specifications and shall submit to the City evidence of completion of abatement activities prior to demolition or renovation of the existing structures.	LTS
HAZ-2: Subsurface hazardous materials may be released into the environment during construction and operation of the project.	S	**HAZ-2, Soil and Groundwater Management Plan.** The project sponsor shall engage with the appropriate regulatory agency (e.g., the San Francisco Bay Regional Water Quality Control Board [RWQCB] or Department of Toxic Substances Control [DTSC]) to provide oversight of additional subsurface investigation at the project site, preparation and implementation of a Soil and Groundwater Management Plan (SGMP), and the implementation of remedial actions, as necessary, at the project site. The additional subsurface investigation activities shall include additional investigation of potential contamination source areas to define the extent of subsurface contamination at the project site. The additional subsurface investigation activities shall include analysis of PCBs in soil and groundwater near areas of former and existing hydraulic elevators and lifts and the transformer that leaked oil in 1997. The SGMP shall outline soil and groundwater management protocols that would be implemented during redevelopment of the project site to ensure that construction workers, the public,	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HAZ-2 (continued)		future occupants, and the environment would not be exposed to hazardous materials that may be present in the subsurface of the project site. The SGMP shall include, at a minimum, the following procedures to be implemented during construction: ● Health and safety requirements for construction workers that may handle contaminated soil or groundwater; ● Guidelines for controlling airborne dust, vapors, and odors; ● Air monitoring requirements for volatile organic compounds (VOCs) during construction; ● Regulatory notification requirements if undocumented contamination or features of environmental concern (e.g., underground storage tanks [USTs] or clarifiers/sumps/vaults and associated piping) are encountered; ● Inspection and sampling protocols for contaminated soil or groundwater by a qualified environmental professional; ● Guidelines for groundwater dewatering, treatment, and disposal to ensure compliance with applicable regulations/permit requirements; and ● Guidelines for the segregation of contaminated soil, stockpile management, characterization of soil for off-site disposal or on-site re-use, and importing of clean fill material. The report(s) documenting additional investigation activities and the SGMP shall be submitted to the regulatory oversight agency for review and approval prior to the City issuing demolition or grading permits for the project. Remedial actions that may be required for the project could include, but would not necessarily be limited to, removal of hazardous materials containers/features (e.g., USTs, piping, clarifiers/sumps/vaults), removal and off-site disposal of contaminated soil or groundwater, in-situ treatment of contaminated soil or groundwater, or engineering/institutional controls (e.g., installation of vapor intrusion mitigation systems and establishing deed restrictions). If remedial actions are required for the project, the project sponsor shall submit to the City evidence of approvals from the regulatory oversight agency for any proposed remedial action plans prior to the City issuing demolition, grading, or building permits that would be required for the remedial action. The project sponsor shall document the implementation of the SGMP during construction and the completion of remedial actions. The project sponsor shall submit to the City evidence of approval from the regulatory oversight agency for the implementation of the SGMP and completion of any remedial actions prior to the City issuing a certificate of occupancy for the project site.	

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.9 TRANSPORTATION			
TRA-1: Implementation of the proposed project would worsen an existing hazardous geometric design feature at the driveway 280 feet north of Northgate Drive/Thorndale Drive.	S	**TRA-1, Sight Triangle Maintenance.** The project sponsor shall submit plans showing that vegetation would be removed from the sight triangle shown on Plate 2 in the Transportation Impact Study (TIS) prepared for the proposed project (included as Appendix F to the Environmental Impact Report [EIR]). Consistent with the Federal Highway Administration's (FHWA) guide on Vegetation Control for Safety (2007), bushes and shrubs within a motorists' line of sight shall be kept under 3 feet in height, and trees and hanging branches shall be trimmed to a minimum height of 7 feet. The City's Community Development Director, or their designee, shall verify that the project plans show the sight triangle clear of vegetation consistent with FHWA guidelines prior to the issuance of any building permits. These conditions shall also be maintained throughout the life of the project.	LTS
4.10 AIR QUALITY			
AIR-1: The proposed project could conflict with implementation of the San Francisco Bay Area Clean Air Plan.	S	Implement Mitigation Measures AIR-2 and AIR-3.	LTS
AIR-2: Construction of the proposed project would generate fugitive dust (PM2.5 and PM10) emissions.	S	**AIR-2, BAAQMD Basic Construction Mitigation Measures.** In order to meet the Bay Area Air Quality Management District (BAAQMD) fugitive dust threshold, the following BAAQMD Basic Construction (Best Management Practice) Mitigation Measures shall be implemented for all phases of construction: ● All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ● All haul trucks transporting soil, sand, or other loose material off site shall be covered. ● All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ● All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph). ● All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2 (continued)		• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by California Code of Regulations [CCR] Title 13, Section 2485, the California Airborne Toxic Control Measure). Clear signage shall be provided for construction workers at all access points. • All trucks and equipment, including their tires, shall be washed off prior to leaving the site. • All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • A publicly visible sign shall be posted with the telephone number and person to contact at the City of San Rafael regarding dust complaints, and the City staff person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	
AIR-3: Construction of Phase 1 would generate ROG and NOX emissions in excess of thresholds established by the BAAQMD, resulting in a violation of air quality standards.	S	**AIR-3a, Phase 1 Construction Equipment Requirements.** Prior to the commencement of Phase 1 construction activities, the project sponsor shall require its construction contractor to demonstrate that all 75 HP or greater diesel-powered equipment are powered with California Air Resources Board (CARB)-certified Tier 4 Final engines. An exemption from this requirement may be granted by the City of San Rafael (City) if: (1) the project sponsor documents that equipment with Tier 4 Final engines are not reasonably available; and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the project from other combinations of construction equipment. Before an exemption may be granted, the project sponsor's construction contractor shall (1) demonstrate that at least two construction fleet owners/operators in Marin County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Marin County during the desired construction schedule; and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod) or another industry-standard emission estimation method and the documentation provided to the City to confirm that necessary project-generated emissions reductions are achieved.	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-3 (continued)		**AIR-3b, Phase 1 Architectural Coatings and Interior Paints.** To address the impact relative to reactive organic gas (ROG) emissions during Phase 1 construction, all interior paints and other architectural coatings shall be limited to 50 grams per liter or less of volatile organic compounds (VOCs). The project sponsor's construction contractor shall procure architectural coatings from a supplier in compliance with the requirements of BAAQMD Regulation 8, Rule 3 (Architectural Coatings).	
AIR-4: Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations through exceeding the carcinogenic inhalation health risk threshold.	S	**AIR-4, Construction Equipment Standards.** During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board (CARB) Tier 2 with level 3 diesel particulate filters emissions standards or equivalent, including Tier 4 Final engines.	LTS
4.11 GREENHOUSE GAS EMISSIONS			
GHG-1: The proposed project would generate GHG emissions, either directly or indirectly, that would have a significant effect on the environment.	S	**GHG-1, Natural Gas Prohibition for Recreational Use.** Prior to the issuance of building permits, the project sponsor shall submit documentation to the City of San Rafael (City) Planning Department that demonstrates, to the satisfaction of the City, that natural gas-fired recreational fire pits are not included in the proposed project design.	SU
GHG-2: The proposed project would conflict with a State or local GHG reduction plan, policy, or regulation.	S	Implement Mitigation Measure GHG-1.	SU
4.12 NOISE			
NOI-1: Construction of the proposed project would result in a significant short-term increase in ambient noise levels in the vicinity of the project site in excess of the thresholds established in the City of San Rafael General Plan or Noise Ordinance.	S	**NOI-1, Sound Barriers.** The City of San Rafael (City) Director of Community Development, or designee, shall verify prior to issuance of demolition or grading permits that the approved plans require that the construction contractor implement the following measures during project construction activities: ● Temporary noise barriers or shrouds shall be installed (featuring materials and methods of assembly and installation that yields a sound transmission class [STC] of 20 or better) near the operating equipment in a safe, feasible, and practical manner to break sound paths between it and the on-site noise-sensitive receptors (e.g., single- or multi-family residences) of concern. ● During Phase 1 of construction, the temporary barriers shall be a minimum of 10 feet tall. ● During Phase 2 of construction, the barriers shall be a minimum of 11 feet tall.	LTS

Table 2.A: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NOI-2: Operation period noise levels would exceed the City's land use compatibility thresholds for future on-site sensitive receptors.	S	**NOI-2, On-Site Noise Compliance Requirements.** Prior to City approval of building permits, the project sponsor shall include in construction documents for City review building operation noise control and sound abatement features or considerations for stationary equipment during nighttime hours. The documentation shall include at least the following: ● Equipment sound emission data (or sufficient engineering data from the manufacturer of equipment model[s]); ● Architectural renderings and details depicting roof parapets, screens, walls, or other barriers that may directly or indirectly occlude, reflect, and/or absorb equipment noise emissions—conveyed via airflows or via vibrating equipment casings or enclosures; and ● Incorporation of dissipative duct silencers, shrouds, covers, acoustical louvers, acoustically lined ductwork, and other means to help attenuate noise from fans, pumps, compressors, and other equipment featuring reciprocating or revolving components. The documentation shall demonstrate whether these measures, or any additional feasible mitigation measures, will reduce the sound level to below the established 55 dBA L_{eq} daytime and 45 dBA L_{eq} thresholds for on-site sensitive receptors. After City approval, information on subsequent project design changes, equipment selections, or construction alterations that substantially deviate from these noise control and/or sound abatement details appearing in the construction documents must be reviewed by a qualified acoustician and provided to the City with respect to expected sufficiency of expected conformance with applicable City noise thresholds or as otherwise approved by the City.	SU
4.13 PUBLIC SERVICES AND RECREATION			
There are no significant impacts to public services and recreation.			
4.14 UTILITIES AND SERVICE SYSTEMS			
UTL-1: The proposed project would generate wastewater that would exceed the capacity of the existing sewer infrastructure that serves the project site.	S	**UTL-1:** Prior to the issuance of a certificate of occupancy for any of the residential units on the project site, the existing 12-inch-diameter Terra Linda Trunk Sewer line downstream of the project site shall be upsized to 15 inches in diameter in coordination with the Las Gallinas Valley Sanitation District.	LTS
4.15 ENERGY			
There are no significant impacts to energy.			

Source: Compiled by LSA (2024).
LTS = Less than Significant Impact
S = Significant Impact
SU = Significant Unavoidable Impact

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3.0 PROJECT DESCRIPTION

This chapter describes the proposed Northgate Mall Redevelopment Project (project) that is evaluated in this Environmental Impact Report (EIR). An overview of the project site, project background, and project objectives is followed by a description of the proposed program of development and a summary of the anticipated adoption and implementation process and intended uses of this EIR. The City of San Rafael (City) is the Lead Agency for environmental review.

3.1 PROJECT SITE

The following subsection describes the project's local and regional context, surrounding land uses, and existing site characteristics.

3.1.1 Project Location and Access

The approximately 44.76-acre project site consists of the Northgate Mall (also referred to herein as the "project site" or the "mall"), which is located within the San Rafael Town Center in northern San Rafael, Marin County. As shown on Figure 3-1, the project site is generally bounded by Las Gallinas Avenue to the north and east and Northgate Drive to the south and west. Figure 3-2 shows an aerial photograph of the project site and surrounding areas. The project site is comprised of the following Assessor's Parcel Numbers (APNs): 175-060-12, -40, -59, -61, -66, and -67.

Regional vehicular access to the project site is via United States Route (US-101). The nearest access points to and from US-101 are on- and off-ramps located immediately north of the project site along Manuel T. Freitas Parkway. Local roadways providing access to the project site include Las Gallinas Avenue, Northgate Drive, Merrydale Road, Thorndale Drive, and Del Presidio Boulevard, which connects Las Gallinas Avenue to Manuel T. Freitas Parkway. The nearest Sonoma-Marin Area Rail Transit (SMART) station is the Civic Center Station, an approximately 0.39-mile walk southeast of the project site along Merrydale Road.

3.1.2 Existing Site Conditions

The mall originally opened in 1965, with The Emporium as the original anchor tenant; the main mall building and surrounding parking lots were constructed and operational by 1968. In 1987, the site underwent a major renovation that primarily enclosed the original open-air design ,and the facility is currently the only enclosed regional shopping center in Marin County. The mall underwent additional renovations in 2008 and is subject to a 2008 Development Agreement, pursuant to which the owner at the time proposed to demolish a portion of the central mall building and make various exterior improvements. The project sponsor, Merlone Geier Partners, LLC, acquired the mall in 2017.

The following describes the existing project site characteristics, including existing buildings and use; open space and landscaping; and circulation and parking. The existing buildings and structures on the project site are shown on Figure 3-3, and the characteristics of each are summarized in Table 3.A. Figure 3-4 depicts an aerial view of the project site and photo viewpoint locations. Photos of the existing conditions at the project site are shown on Figures 3-5 through 3-7.

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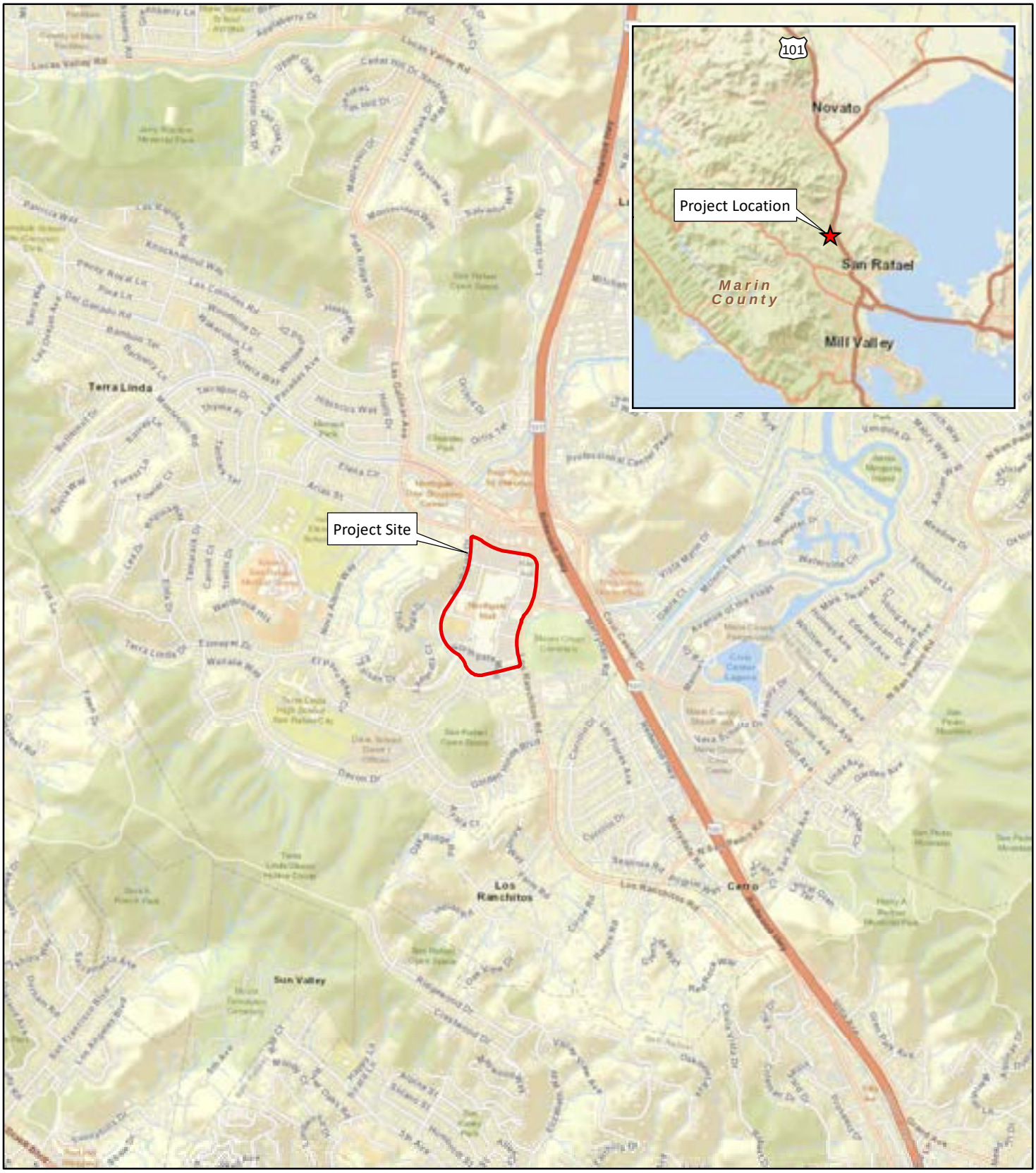

LSA

LEGEND

Project Site

FIGURE 3-1

N

0 1000 2000
FEET

SOURCE: ESRI World Street Map (2020).

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Northgate Mall Redevelopment Project EIR

Project Location and Vicinity

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LSA

FIGURE 3-2

0 400 800
FEET

N

Project Site Boundary

Northgate Mall Redevelopment Project EIR

Aerial Photograph of the Project Site and Surrounding Land Uses

SOURCES: Google Earth, 2/25/2021; LSA, 2021

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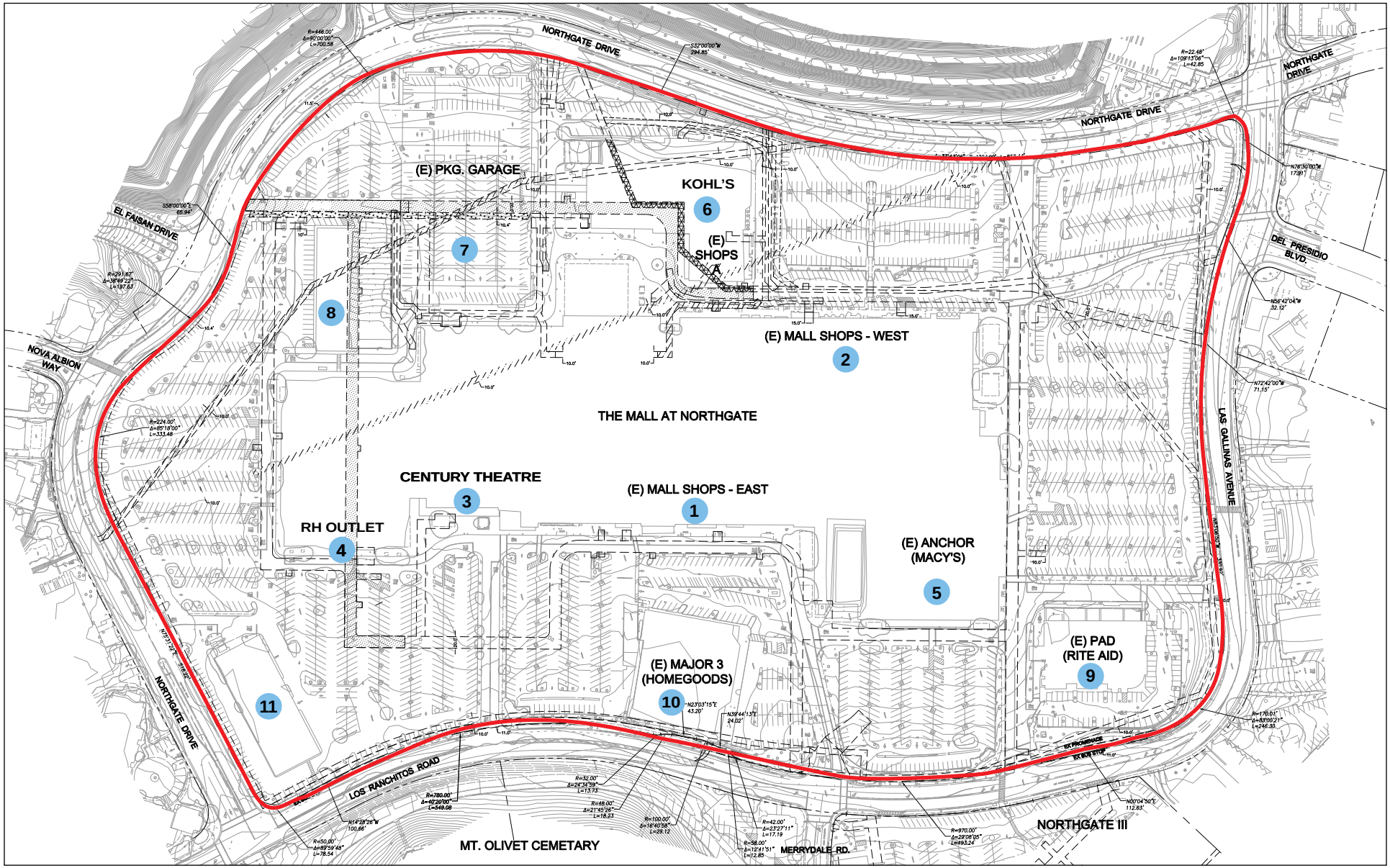

LSA

FIGURE 3-3

Project Site Boundary

Building Numbers - Refer to Table 3.A

0 60 120
FEET

N

Northgate Mall Redevelopment Project EIR
Existing Site Conditions

SOURCE: MerloneGeier Partners, 6/11/2021

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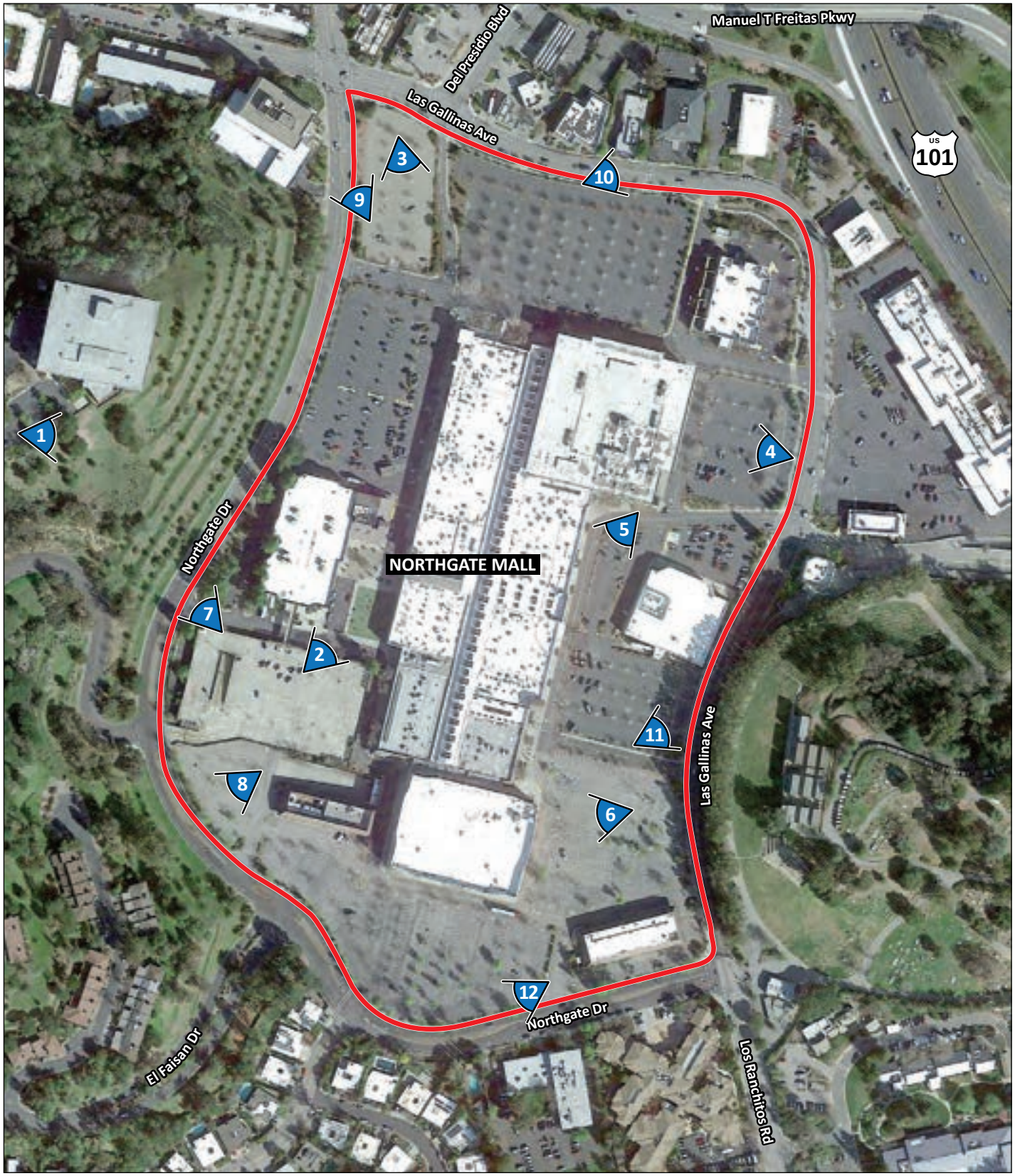

LSA

FIGURE 3-4

0 200 400
FEET

N

Photo Viewpoints

Project Site Boundary

Northgate Mall Redevelopment Project EIR

Photo Viewpoint Locations

SOURCES: Google Earth, 2/25/2021; LSA, 2022

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Photo 1: Photo of the Northgate Mall site (middle ground) from Thorndale Drive, looking east, with adjacent hillside in the foreground and San Pedro Ridge beyond

Photo 2: Photo of Kohl's building and Mall Shops West from the parking structure, looking north

LSA

FIGURE 3-5

Northgate Mall Redevelopment Project EIR

Photos of Existing Site (Photos 1-2)

SOURCE: LSA, 2022

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Photo 3: Photo of Mall Shops West and Macy's from the intersection of Northgate Drive and Las Gallinas Avenue, looking southeast

Photo 4: Photo of Macy's from Las Gallinas Avenue, looking west

LSA

FIGURE 3-6

Northgate Mall Redevelopment Project EIR

Photos of Existing Site (Photos 3-4)

SOURCE: LSA, 2022

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Photo 5: Photo of Mall Shops East from the center of the project site, looking southwest

Photo 6: Photo of RH Outlet from the center of the project site, looking west

LSA

FIGURE 3-7

Northgate Mall Redevelopment Project EIR

Photos of Existing Site (Photos 5-6)

SOURCE: LSA, 2022

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Table 3.A: Existing Buildings and Structures

Building No. (Figure 3-3)	Street Address	Building Use	Area (sq ft)	No. of Stories
Main Building				
1	5800 Northgate Drive	Mall Shops East (various retail shops)	140,932	1
2	5800 Northgate Drive	Mall Shops West (various retail shops, restaurants)	58,860	1
3	7000 Northgate Drive	Century Theatre	45,000	1
4	9000 Northgate Drive	RH Outlet	106,476	2
5	1000 Northgate Drive	Macy's	254,015	2
West of Main Building				
6	5000-5010 Northgate Drive	Kohl's, various retail, restaurants	85,846	2
7	N/A	Parking structure	176,090	2
8	N/A	Vacant Sears catalog building	12,200	1
East of Main Building				
9	1500 Northgate Mall	Rite Aid	17,340	1
10	6000 Northgate Drive	HomeGoods	29,538	1
11	N/A	Vacant Sears Tire & Battery space	16,300	1
		Total	**942,597**	

Source: Merlone Geier Partners, LLC (2023).
N/A = not applicable
sq ft = square feet

3.1.2.1 Existing Uses

The existing mall is generally oriented on a north-south axis, with the main building located in the center of the project site and surrounded by surface parking and standalone buildings and structures. The main mall building, which is a total of approximately 605,283 square feet in size, consists of five sections: (1) Mall Shops East; (2) Mall Shops West; (3) Century Theatre; (4) RH Outlet;[1] and (5) Macy's. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure containing approximately 473 parking spaces, and a vacant retail building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building. An approximately 200-square-foot substation for the San Rafael Police Department (SRPD) is also currently located within the main mall building.

The existing gross leasable area (i.e., the total building square footage on the project site without the parking structure) is approximately 766,507 square feet. Therefore, based on a ratio of one employee per 350 square feet, a total of approximately 2,190 people would be employed on the project site at full occupancy.[2] The mall generally operates between the hours of 10:00 a.m. and 8:00 p.m. Monday through Thursday, 10:00 a.m. and 9:00 p.m. Friday and Saturday, and 11:00 a.m. and 6:00 p.m. on Sunday.

3.1.2.2 Open Space and Landscaping

The project site is largely developed and covered with buildings, other structures, and surface parking. Landscaping on the project site consists of ornamental landscaping throughout the project

[1] The RH Outlet building was formerly known as the Sears anchor. Certain project application materials refer to the building this way.

[2] City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR,* Table 3-5. January.

site, including landscaping strips along the boundaries of the site that contain street trees and shrubs, planters with trees within the surface parking lot, and some mature trees located adjacent to the existing buildings. A total of 679 trees are located on the project site. In addition, an approximately 9,505-square-foot artificial turf lawn is located between the main building and the Kohl's building.

3.1.2.3 Parking and Circulation

There are currently a total of 2,899 parking spaces on the project site, which consist of 2,380 standard spaces, 22 handicap spaces, and 15 van-size spaces in the surface parking lot, 473 spaces within the parking structure, and 9 on-street parking spaces between the main building and the Kohl's building. Automobile access to the project site is provided via driveways from Las Gallinas Avenue and Northgate Drive. Within the site, automobile access is provided to each of the buildings via internal roadways adjacent to the surface parking lot. Pedestrian access to the project site is provided by sidewalks along Northgate Drive and Las Gallinas Avenue, as well as sidewalks along the internal roadways. Bicycle facilities within the vicinity of the project site consist of bicycle lanes along Northgate Drive. As previously described, the parking structure is located on the western portion of the project site, just south of the Kohl's building. In addition to access from the surface parking lot, the parking structure is also accessible from two driveways along Northgate Drive. The second floor of the parking structure also includes a pedestrian bridge that provides direct access to the second floor of the Kohl's building.

3.1.3 Regulatory Setting

The project site is designated as Community Commercial Mixed Use on the City's General Plan Land Use Map.[3] The intent of the Community Commercial Mixed Use designation is to provide for general retail and service uses, restaurants, automobile sales and service uses, hotels and motels, and other commercial activities. Office, mixed-use, and residential projects are also permitted. The project site is currently zoned General Commercial, which promotes a full range of retail and services uses in major shopping centers and certain areas of the city that have freeway or major street access and visibility. Retail and commercial uses are generally permitted within this district, and residential uses are allowed through project review.[4]

3.1.4 Surrounding Land Uses

The project site is located in the northern area of San Rafael, within the San Rafael Town Center west of US-101. The project site is generally surrounded by a mix of uses, including commercial, residential, open space, and institutional, as depicted on Figure 3-2 and further described below. Figures 3-8 through 3-10 include photos of surrounding land uses; refer to Figure 3-4 for photo viewpoint locations.

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[3] City of San Rafael. 2021. *San Rafael General Plan 2040.* August.

[4] City of San Rafael. 2021. San Rafael Municipal Code. February 16.

Photo 7: View from Northgate Drive toward commercial uses along Thorndale Drive, west of the project site.

Photo 8: View of the Quail Hill Townhomes, southwest of the project site.

LSA

FIGURE 3-8

Northgate Mall Redevelopment Project EIR

Photos of Surrounding Land Uses (Photos 7-8)

SOURCE: LSA, 2022

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Photo 9: View of the Las Gallinas Avenue and Northgate Drive intersection and commercial uses, northwest of the project site

Photo 10: View of commercial uses along Las Gallinas Avenue, north of the project site

LSA

FIGURE 3-9

Northgate Mall Redevelopment Project EIR

Photos of Surrounding Land Uses (Photos 9-10)

SOURCE: LSA, 2022

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Photo 11: View of the Mt. Olivet Cemetary, east of the project site

Photo 12: View of the commercial and residential uses along Northgate Drive, south of the project site

LSA

FIGURE 3-10

Northgate Mall Redevelopment Project EIR

Photos of Surrounding Land Uses (Photos 11-12)

SOURCE: LSA, 2022

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- **North of the Project Site: The** project site is bordered to the north by the east-west segment of Las Gallinas Avenue, across which are various commercial uses (Photo 7). Farther north is the Manuel T. Freitas Parkway, which includes on- and off-ramps for US-101 as well as a mix of hotel and single- and multi-family residential uses.

- **East of the Project Site:** The project site is bordered to the east by the north-south segment of Las Gallinas Avenue. Across Las Gallinas Avenue to the east are a mix of uses, including commercial uses and the Mt. Olivet San Rafael Cemetery. Merrydale Road is also located east of the project site. Farther east is US-101, which runs north-south in the vicinity of the project site, across which are commercial, healthcare, and residential uses.

- **South of the Project Site:** The project site is bordered to the south by the east-west segment of Northgate Drive. Land uses south of Northgate Drive generally consist of single- and multi-family residential uses. Hartzell Park is also located south of the project site, and Terra Linda High School is located to the southeast.

- **West of the Project Site:** The project site is bordered to the west by the north-south segment of Northgate Drive. Across Northgate Drive is a sloped hillside and Villa Marin, a retirement community, as well as multi-family residential units. Past Villa Marin are additional single- and multi-family residential units, Vallecito Elementary School, and the Kaiser Permanente San Rafael Medical Center.

3.2 PROJECT OBJECTIVES

According to the project sponsor, the objectives of the proposed project are to:

- Implement the San Rafael General Plan 2040 vision for mixed use, transit-oriented development, and high-density housing on the project site;

- Implement the City's and regional agencies' designation of the project site as a Priority Development Area (i.e., a place with convenient public transit service that is prioritized by local government for housing, jobs, and services);

- Redevelop the existing mall facility into a town center with a relevant mix of commercial and retail offerings to support the local economy and provide tax revenues and employment opportunities;

- Create new housing offerings to meet the needs of families of varying sizes and reduce the recognized regional and local deficit of housing;

- Create a town center/urban village through a combination of retail, dining, and residential uses within a pedestrian-oriented urban core; and

- Provide new outdoor amenities and open spaces, main street improvements, and recreational opportunities interconnected by pedestrian links throughout the project.

3.3 PROPOSED PROJECT

This section provides a description of the proposed project as identified in the application materials submitted by the project sponsor to the City, dated June 11, 2021, as updated May 9, 2023.[5] The proposed project would result in the redevelopment of the existing mall through demolition, renovation, and new construction with a mix of commercial and residential land uses. The proposed project would be developed in two phases. Phase 1 (also referred to as the 2025 Master Plan) would generally include the demolition of the RH Outlet building, the HomeGoods building, and the Mall Shops East, which is approximately 144,432 square feet of the main building, and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units (96 of which would be set aside for low-income households). Phase 2 (also referred to as the 2040 Vision Plan) would generally include the demolition of the 254,015-square-foot Macy's building and 79,051-square-foot Kohl's building, and the construction of up to 55,440 square feet of new commercial space and up to 500 additional residential units (51 of which would be set aside for low-income households).

At full buildout, the project would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units in six areas of the project site (1,746,936 square feet of residential area). Building heights across the project site would vary, with a maximum of approximately 78 feet. A total of 648,807 square feet of existing building space would be demolished, and the total commercial area would be reduced by a total of 548,987 square feet. Figure 3-11 depicts the overall proposed demolition plan and buildings to be retained. The proposed project would also include various associated site improvements, including a town square, modifications to the internal circulation and parking, and improvements to infrastructure and landscaping. Individual project components are further described below.

The project sponsor is proposing to comply with San Rafael Municipal Code Section 14.16.030, which outlines the requirements for the construction of affordable housing. Of the 1,422 total units proposed to be developed under the project, at least 147 units would be set aside for low-income households. At least 10.3 percent of all project units, therefore, would be affordable to low-income households.[6]

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5 Merlone Geier Partners, LLC. 2022. City of San Rafael General Planning Application for the Northgate Town Square Project. June 11. Updated May 2023. (It should be noted that proposed square footages, residential unit mix, and other elements of the project have been refined since publication of the Notice of Preparation (NOP), and that the project plans may be subject to continued refinement prior to consideration of project approval. Additionally, the technical reports prepared for the proposed project evaluated 498,661 square feet of commercial area during Phase 1 and a total of 225,100 square feet of commercial area at project buildout (implementation through Phase 2); this minor increase in Phase 1 square footage and decrease in buildout square footage would be negligible and would not substantially change the analysis or conclusions presented in the technical reports prepared for the project (refer to specific topical sections in Chapter 4.0 of this EIR for further explanation). The analysis in this EIR evaluates the maximum development potential for the proposed project.)

6 Low-income households are those earning between 51 percent and 80 percent of the area median income, subject to adjustment factors.

LSA

LEGEND

EXISTING TO REMAIN

TO BE DEMOLISHED - PHASE 1

TO BE DEMOLISHED - PHASE 2

N

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FEET

SOURCE: MerloneGeier Partners, 5/10/2023

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FIGURE 3-11

Northgate Mall Redevelopment Project EIR

Proposed Overall Demolition Plan

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3.3.1 Phase 1 – 2025 Master Plan

As described above, Phase 1 of the proposed project would implement the 2025 Master Plan, which is anticipated to be completed by 2025. Individual components of Phase 1 are discussed below. Figure 3-12 depicts the currently available overall conceptual site plan for Phase 1, and Figures 3-13 and 3-14 depict the typical elevations for residential buildings included in Phase 1. Figure 3-15 depicts typical elevations for retail buildings in Phase 1, and Figure 3-16 shows the conceptual landscape plan.

3.3.1.1 Building Program

The building program for Phase 1 is discussed below.

Vacant Space. Phase 1 of the proposed project would consist of demolition of the two vacant retail buildings (Sears Auto Center and Sears Seasonal), totaling 28,500 square feet on the southern portion of the project site in addition to the commercial space discussed in the next paragraph.

Commercial Space. Phase 1 of the proposed project also would include demolition of the RH Outlet building, the HomeGoods building, and the Mall Shops East, which is approximately 144,432 square feet of the main building.

New commercial construction that would occur in Phase 1 would consist of an approximately 20,000-square-foot addition to the existing Century Theatre space, and the construction of four new commercial spaces, including a 5,000-square-foot retail pad (Shops 3), a 6,200-square-foot retail pad (Shops 4), an 8,400-square-foot retail pad that would be designed for a sit-down restaurant (Pad 1), and a 4,300-square-foot retail pad that would be designed for a drive-through restaurant (Pad 2). Commercial spaces identified as “Shops” are expected to include multiple tenants, while commercial spaces identified as “Pads” are expected to include only a single tenant. An approximately 200-square-foot SRPD substation would also be provided between Shops 2A and Major 2. As discussed in more detail below, Pad 1 and Pad 2 would be located within the northwest corner of the project site, Shops 3 would be located adjacent to the Century Theatre, and Shops 4 would be located within the Residential 4 residential mixed-use building. Table 3.B provides a summary of the existing and proposed commercial space included in Phase 1.

Overall, Phase 1 would result in a reduction in gross leasable area on the project site from approximately 766,507 square feet to 501,941 square feet. Therefore, it is estimated that Phase 1 would result in a reduction in employees from approximately 2,190 to 1,434.

Residential Buildings. Phase 1 of the proposed project would include the construction of a total of 922 residential units within three apartment-style residential buildings, each on their own parcel, and 15 townhome buildings (containing 100 townhome units), all located on a fourth parcel. Of the 922 units, 96 would be set aside for low-income households, while the remaining 826 units would be offered at market rates. Accordingly, 10.4 percent of units provided under the 2025 Master Plan would be affordable to low-income households.

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LSA

FIGURE 3-12

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SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR

Proposed Conceptual Site Plan - Phase 1

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NORTH ELEVATION

EAST ELEVATION

LSA

FIGURE 3-13

N

0 16 32
FEET

SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR

Proposed Typical Residential Building Elevations - Residential 1 North and East

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NORTH ELEVATION

EAST ELEVATION

LSA

FIGURE 3-14

N

0 32 64
FEET

SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR

Proposed Typical Residential Building Elevations - Residential 4 North and East

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SOUTH MALL ELEVATION REFERENCE (NOT TO SCALE)

NORTH MALL ELEVATION REFERENCE (NOT TO SCALE)

NORTH ELEVATION

LSA

FIGURE 3-15

N

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FEET

SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR

Proposed Typical Retail Building Elevations - Phase 1 North and South

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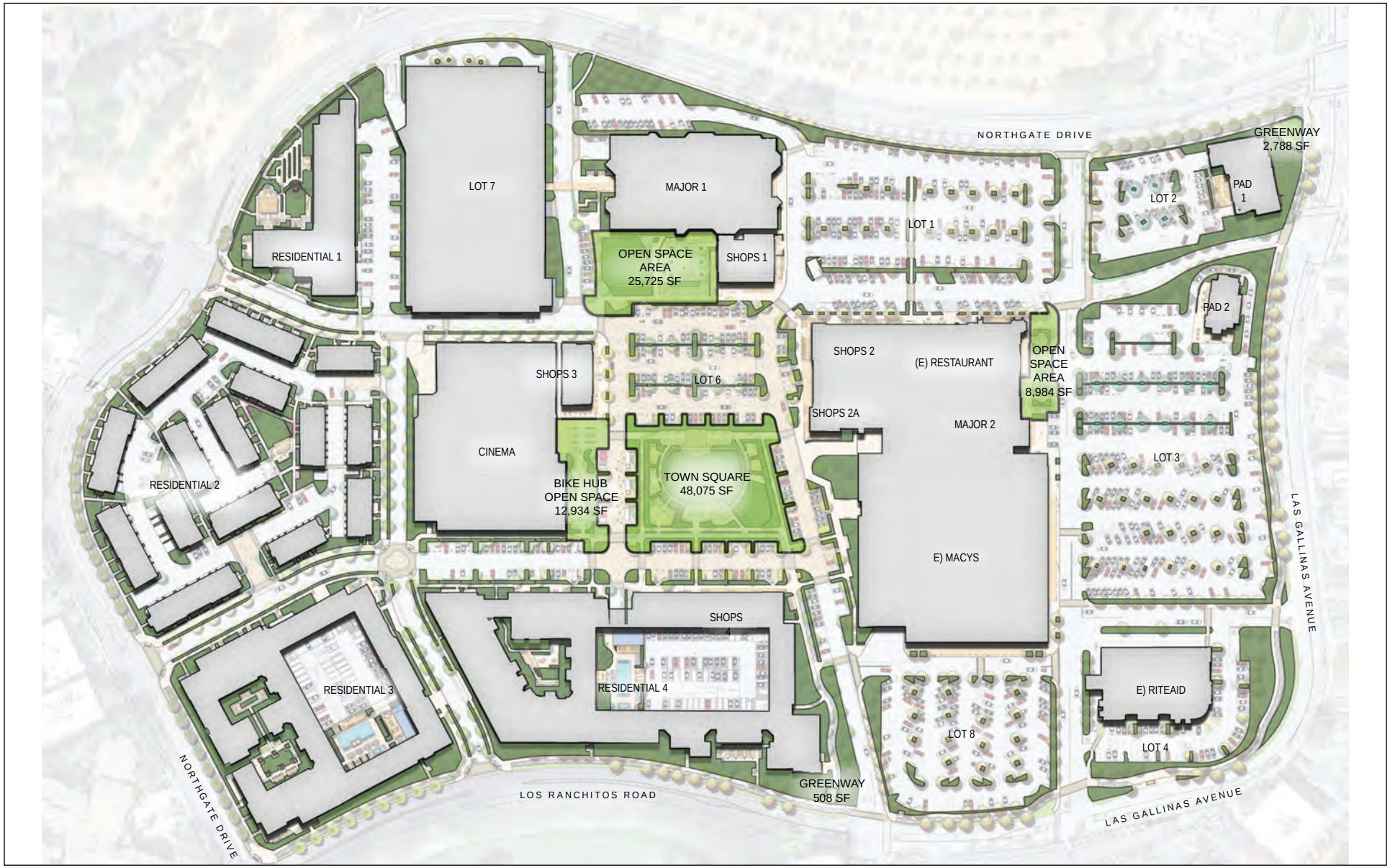

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FIGURE 3-16

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SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR
Proposed Open Space Plan - Phase 1

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Table 3.B: Proposed Project Phase 1 Commercial Space

Space	Existing (sq ft)	Demolished (sq ft)	Existing to Remain (sq ft)	New (sq ft)	Total (sq ft)
Macy's	254,015	--	254,015	--	254,015
Major 1 (Existing Kohl's)[1]	74,500	--	74,500	--	74,500
Major 1 (Existing Kohl's Unoccupied)	4,551	--	4,551	--	4,551
RH Outlet[2]	106,476	106,476	--	--	--
Sears Auto Center	16,300	16,300	--	--	--
Sears Seasonal Building	12,200	12,200	--	--	--
HomeGoods	29,538	29,538	--	--	--
Rite Aid	17,340	--	17,340	--	17,340
Main Building[3]	199,792	144,432	55,360	--	55,360
Century Theatre	45,000	--	45,000	20,000	65,000
Ounces	--	--	--	480	480
Shops 1	6,795	--	6,795	--	6,795
Shops 3	--	--	--	5,000	5,000
Shops 4	--	--	--	6,200	6,200
Pad 1	--	--	--	8,400	8,400
Pad 2	--	--	--	4,300	4,300
Total	**766,507**	**308,946**	**457,561**	**44,380**	**501,941**

Source: Merlone Geier Partners, LLC (2023).
[1] The Kohl's building includes 6,000 sq ft of tenant shops.
[2] The RH Outlet building was formerly known as the Sears anchor.
[3] Includes Major 2, Shops 2 and 2A, and a Restaurant.
sq ft = square feet

"Residential 1" would be located at the southwest corner of the project site and would contain approximately 96 residential units in a five-story building that would contain four levels of residential use over ground-level parking for an overall height of 60 feet. Elevator penthouses and other projections would reach 75 feet in height. All of the 96 units would be restricted to low-income households. Studio units would be approximately 430 square feet in size, one-bedroom units would be approximately 520 square feet in size, two-bedroom units would be approximately 750 square feet in size, and three-bedroom units would be approximately 995 square feet in size.

"Residential 2" would contain a total of approximately 100 residential units in 15 three-story townhome buildings, with a height of 35 feet. One-bedroom units would be approximately 470 square feet in size, two-bedroom units would range from approximately 1,358 to 1,575 square feet in size, three-bedroom units would range from approximately 1,441 to 2,019 square feet in size, and four-bedroom units would range from approximately 2,092 to 2,124 square feet in size. Each of the townhome units would include a ground floor parking garage.

"Residential 3" would contain a total of approximately 280 residential units in a six-story building. A seven-level parking structure with one level of underground parking would also be located at the center of Residential 3, for an overall height of 68 feet. Elevator penthouses and other projections would reach 80 feet in height. Studio units would be approximately 620 square feet in size, one-bedroom units would range from approximately 680 to 1,315 square feet, and two-bedroom units would range from approximately 1,130 square feet to 1,655 square feet.

"Residential 4" would contain a total of approximately 446 residential units within a seven-story building with an overall height of 78 feet. Elevator penthouses and other projections would reach

90 feet in height. A 10-level parking structure would be located at the center of the parcel (which would include two levels of underground parking), and approximately 6,200 square feet of retail space (see Shops 4 in Table 3.B) and approximately 5,000 square feet of community space consisting of a library and community center would be located at the ground floor of the northwest corner of the building. Studio units would be approximately 620 square feet in size, one-bedroom units would range from approximately 680 to 1,415 square feet, and two-bedroom units would range from approximately 908 to 1,970 square feet.

3.3.1.2 Landscaping and Open Space

In total, Phase 1 would provide approximately 601,227 square feet of open space, which would consist of approximately 295,659 square feet of useable open space and approximately 305,568 square feet of landscaped area. Useable open space would include open space for each of the residential buildings. All of the residential areas would include common courtyards for residents, and the Residential 4 building would also include a rooftop deck. In addition, common open space would be provided adjacent to the Century Theatre building that would consist of approximately 12,934 square feet of outdoor amenity space with a bike hub/fix it station, a shipping container cafe with associated outdoor dining tables, a fire feature, and lounge seating. Adjacent to the Kohl's building would be another outdoor amenity space consisting of 25,725 square feet of flexible turf area, a shipping container café, outdoor dining, lounge seating, and fire features. West of the Macy's building would be an approximately 8,984-square-foot common open space area with landscaping and common seating areas. Phase 1 would also include the construction of a Town Square near the center of the project site, which would be approximately 48,075 square feet in size and would contain a large flexible lawn space, a dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables.

A total of approximately 348 of the existing trees on the project site would be removed, and a minimum of 558 new trees would be planted throughout the project site during Phase 1. In addition, landscaping would be provided throughout the project site in the open space areas mentioned above, along internal roadways and pedestrian paths, within the surface parking lots, and along the site boundaries.

3.3.1.3 Parking and Circulation

In addition to the parking structures and private parking garages provided for each of the residential buildings, Phase 1 would also include nine surface parking lots throughout the project site. Table 3.C provides an overview of the parking included in Phase 1. In total, Phase 1 would provide approximately 3,490 parking spaces, 1,587 of which would be reserved for use by residents and guests of the residential buildings, and the remaining 1,903 parking spaces would be for commercial use.

As shown on Figure 3-12, internal roadways that provide access to the project site (i.e., adjacent to Merrydale Road and Thorndale Drive) would generally remain the same. Internal roadways providing access to the surface parking lots and between the buildings would be reconfigured. New pedestrian and bicycle paths would be provided throughout the project site, and a multi-modal path would be provided along the Las Gallinas Avenue frontage.

Table 3.C: Proposed Project Phase 1 Parking Supply

Parking Lot/Structure	Residential Spaces	Commercial Spaces	Total Spaces
Residential 1 Structure	96	--	96
Residential 2	215	--	215
Residential 3 Structure	471	--	471
Residential 4 Structure	805	40	845
Retail Parking Structure	--	473	473
Retail Surface Parking[1]	--	1,390	1,390
Total	**1,587**	**1,903**	**3,490**

Source: Merlone Geier Partners LLC (2023).
[1] Includes 170 surface parking spaces for the Macy's furniture store.

3.3.1.4 Demolition, Grading, and Construction

The project site is generally level and developed with structures and surface pavements; therefore, cut and/or fill would be limited to excavation for the below-grade parking and fill of the existing RH Outlet building basement following demolition. A total of approximately 62,416 cubic yards of soil would be excavated from the site, approximately 39,738 cubic yards of which would be used on the project site and the remaining approximately 22,678 cubic yards would be exported.

Phase 1 would include the demolition of approximately 308,946 square feet of building space and approximately 15.66 acres of asphalt. A total of approximately 26,048 tons of demolition waste would be generated in Phase 1; 7,189 tons of demolished building material would be reused on site while 18,859 tons would be exported off site.

If approved, construction of Phase 1 is anticipated to begin in 2024. Phase 1 would include phased construction, with each of four residential construction phases consisting of an approximately 1-week site preparation phase, an approximately 2-week to 1-month grading phase, approximately 9 to 10 months of building construction, an approximately 1-month or less architectural coating phase, and an approximately 1-month or less paving phase. A demolition phase also would occur prior to site preparation during two of the four residential construction phases; the demolition phase would last approximately 1.5 months for the Residential 2 construction phase and approximately 2 weeks for the Residential 4 construction phase. Within Phase 1, a separate retail construction phase is anticipated to consist of an approximately 1.5-month demolition phase, an approximately 1-month site preparation phase, an approximately 2-month grading phase, approximately 23 months of building construction, an approximately 1-month architectural coating phase, and an approximately 2-month paving phase. Overall, construction of Phase 1 is anticipated to last approximately 19 to 32 months, and is anticipated to be fully operational and occupied by 2026.

3.3.2 Phase 2 – 2040 Vision Plan

As described above, Phase 2 of the proposed project would consist of the 2040 Vision Plan, which is anticipated to be completed by 2040 and represents complete buildout of the proposed project. Individual components of Phase 2 are discussed below. Figure 3-17 depicts the currently available overall conceptual site plan for Phase 2, and Figure 3-18 depicts the typical elevations for residential buildings included in Phase 2. Figure 3-19 shows the conceptual landscape plan for Phase 2.

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FIGURE 3-17

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SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR

Proposed Conceptual Site Plan - Phase 2

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WEST ELEVATION

SOUTH ELEVATION

LSA

FIGURE 3-18

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FEET

SOURCE: MerloneGeier Partners, 5/8/2023

Northgate Mall Redevelopment Project EIR

Proposed Residential Building Elevations - Residential 5, North and East

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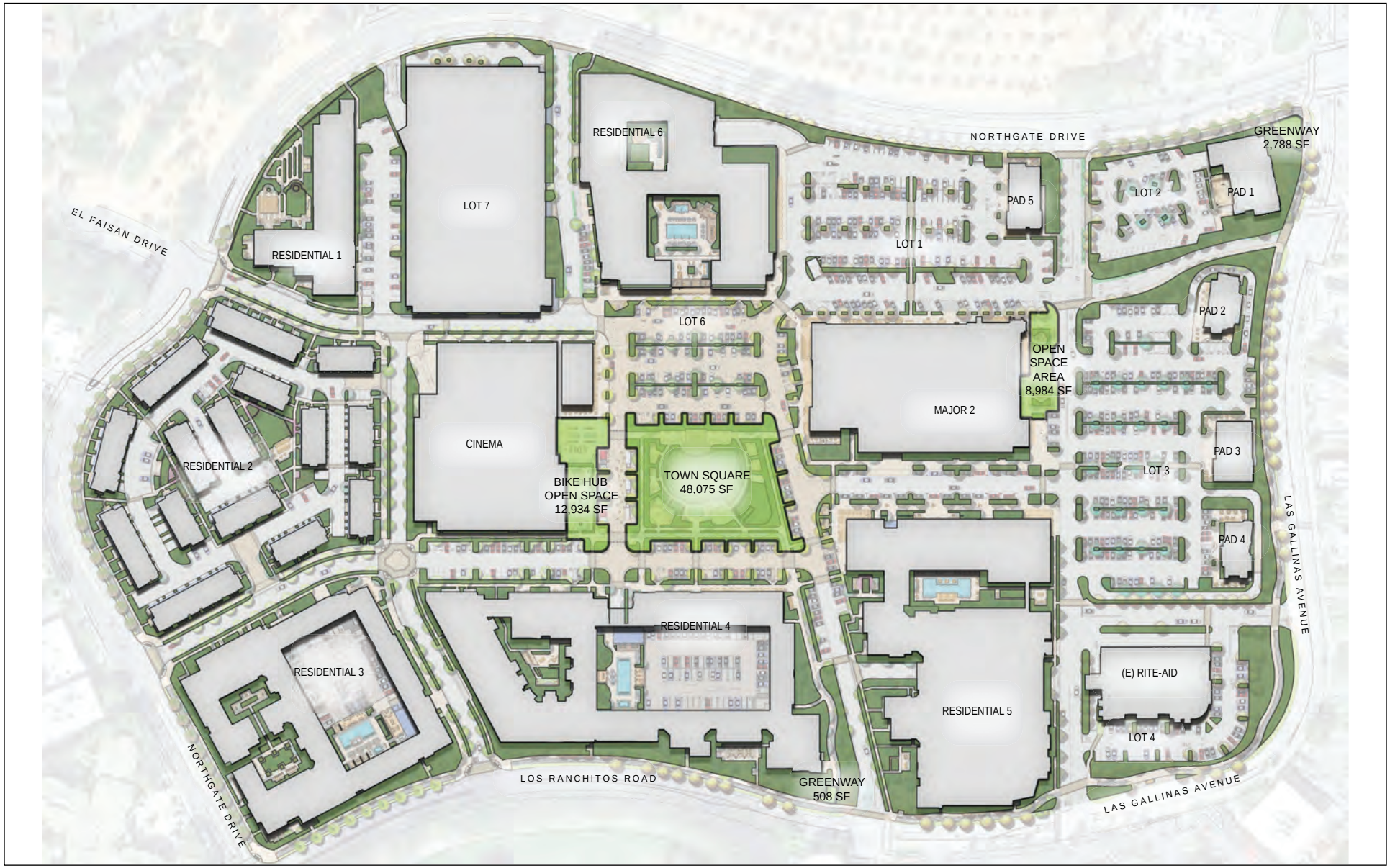

LSA

FIGURE 3-19

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SOURCE: MerloneGeier Partners, 5/8/2023

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Northgate Mall Redevelopment Project EIR
Proposed Open Space Plan - Phase 2

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3.3.2.1 Building Program

The building program for Phase 2 is discussed below.

Commercial Space. Phase 2 of the proposed project would begin with demolition of the Macy's building, the Kohl's building, and Shops 1.

New commercial construction during Phase 2 would consist of the construction of two new major tenant spaces (Major 3 and 4), construction of two new shop spaces (Shops 5 and 6), and construction of three new retail pads (Pads 3, 4, and 5), one of which (i.e., Pad 4) would be designed to be a drive-through restaurant. Major 3 and Shops 6 would be located adjacent to Residential 6 on the west edge of the project site, and Major 4 would be located near the center of the site, southwest of the existing Rite Aid building. Pads 3, 4, and 5 would be located in the northwest corner of the site near Pads 1 and 2 from Phase 1. Table 3.D provides a summary of the existing commercial space from Phase 1 and the proposed commercial space included in Phase 2.

Table 3.D: Phase 2 – Commercial Space

Space	Phase 1 (sq ft)	Demolished (sq ft)	New (sq ft)	Total (sq ft)
Macy's	254,015	254,015	--	--
Kohl's	79,051	79,051	--	--
Rite Aid	17,340	--	--	17,340
Main Building[1]	55,360	--	--	55,360
Century Theater	65,000	--	--	65,000
Ounces	480	--	--	480
Shops 1	6,795	6,795	--	--
Shops 3	5,000	--	--	5,000
Shops 4	6,200	--	--	6,200
Shops 5	--	--	3,500	3,500
Shops 6	--	--	5,000	5,000
Major 3	--	--	10,000	10,000
Major 4	--	--	23,140	23,140
Pad 1	8,400	--	--	8,400
Pad 2	4,300	--	--	4,300
Pad 3	--	--	5,000	5,000
Pad 4	--	--	3,800	3,800
Pad 5	--	--	5,000	5,000
Total	**501,941**	**339,861**	**55,440**	**217,520**

Source: Merlone Geier Partners LLC (2023).
[1] Includes Major 2, Shops 2 and 2A, Restaurant.
sq ft = square feet

Overall, Phase 2 would result in a reduction in gross leasable area on the project site from approximately 501,941 square feet to 217,520 square feet. Therefore, it is estimated that Phase 2 would result in a reduction in employees from approximately 1,434 to 621.

Residential Buildings. Phase 2 of the proposed project would include two new residential buildings that would contain a total of 500 residential units within two apartment-style buildings, each on their own parcel. Of the 500 units, 51 would be set aside for low-income households, while the

remaining 449 units would be offered at market rates. Accordingly, 10.2 percent of the new units provided under the 2040 Vision Plan would be affordable to low-income households.

"Residential 5" would contain a total of approximately 251 residential units in a five-story building, 26 of which would be set aside for low-income households. A six-level parking structure would also be located at the center of Residential 5 for an overall height of 60 feet. Elevator penthouses and other projections would reach 75 feet in height. Studio units would be approximately 620 to 750 square feet in size, one-bedroom units would range from approximately 680 to 830 square feet, and two-bedroom units would range from approximately 1,130 to 1,150 square feet.

"Residential 6" would contain a total of approximately 249 residential units in a seven-story building, 25 of which would be set aside for low-income households. A five-level parking structure would also be located at the southwest corner of Residential 6 for an overall height of 78 feet. Elevator penthouses and other projections would reach 90 feet in height. Studio units would be approximately 620 square feet in size, one-bedroom units would range from approximately 680 to 830 square feet, and two-bedroom units would be approximately 1,150 square feet.

3.3.2.2 Landscaping and Open Space

In total, Phase 2 would provide approximately 705,384 square feet of open space, which would consist of approximately 377,409 square feet of useable open space and approximately 327,975 square feet of landscaped area. In addition to the useable open space at the residential buildings included in Phase 1, the Residential 5 Building would include four courtyards, a rooftop deck, and additional open space areas totaling approximately 37,838 square feet, and the Residential 6 Building would include two courtyards, a rooftop deck, and additional open space areas totaling approximately 38,308 square feet.

A total of approximately 124 of the existing trees on the project site would be removed, and a minimum of 169 new trees would be planted throughout the project site during Phase 2. In addition, similar to Phase 1, landscaping would be provided throughout the project site in the open space areas mentioned above, along internal roadways and pedestrian paths, within the surface parking lots, and along the site boundaries.

3.3.2.3 Parking and Circulation

In addition to the parking structures provided for each of the residential buildings, Phase 2 would also include eight surface parking lots throughout the project site. Table 3.E provides an overview of the parking included in Phase 2. In total, Phase 2 would provide approximately 3,849 parking spaces, 2,524 of which would be reserved for use by residents and guests of the residential buildings, the remaining 1,325 of which would be for commercial use.

As shown on Figure 3-16, internal roadways that provide access to the project site (e.g., adjacent to Merrydale Road and Thorndale Drive) would generally remain the same as Phase 1. The internal roadways that provide access to the surface parking lots and between the buildings would be reconfigured.

Table 3.E: Phase 2 Parking Supply

Parking Lot/Structure	Residential Spaces	Commercial Spaces	Total Spaces
Residential 1 Structure	96	--	96
Residential 2	215	--	215
Residential 3 Structure	471	--	471
Residential 4 Structure[1]	845	--	845
Residential 5 Structure	458	--	458
Residential 6 Structure	319	--	319
Retail Parking Structure[2]	120	353	473
Retail Surface Parking	--	972	972
Total	**2,524**	**1,325**	**3,849**

Source: Merlone Geier Partners LLC (2023).

[1] The 40 parking spaces in the Residential 4 structure that would be set aside for commercial use in Phase 1 would be reallocated to residential use in Phase 2.

[2] In Phase 2, 120 spaces in the retail parking structure would be reallocated to residential use for Residential Building 6.

3.3.2.4 Demolition, Grading, and Construction

As previously noted, the project site is generally flat and developed with structures; therefore, a minimal amount of cut and/or fill would be required for construction of Phase 2. A total of approximately 21,363 cubic yards of soil associated with Residential 6 subterranean parking would be excavated and exported from the site during Phase 2. Phase 2 would include the demolition of approximately 339,861 square feet of building space and approximately 5.08 acres of asphalt pavement. A total of approximately 20,551 tons of demolition waste would be generated by Phase 2.

If approved, construction of Phase 2 is anticipated to begin in 2030. Phase 2 would include phased construction, with each of three construction phases consisting of an approximately 1-week site preparation phase, an approximately 2-week grading phase, approximately 10 months of building construction, an approximately 1 month or less architectural coating phase, and an approximately 1-month or less paving phase. A demolition phase also would occur prior to site preparation. The demolition phase would last approximately 2 weeks for the retail construction phase, approximately 2.5 months for the Residential 5 construction phase, and approximately 1 month for the Residential 6 construction phase. Overall, construction of Phase 2 is anticipated to last approximately 60 months, including expected breaks between construction phases, and is anticipated to be fully operational and occupied by 2035.

3.3.3 Project Sustainability Features

The project includes numerous sustainability features. Among them are the following:

- Water-efficient interior plumbing fixtures, appliances, and equipment would be installed in all new buildings.
- In residential buildings, dual plumbing would be installed to allow for use of recycled water as required by code.

- A combination of artificial turf and drought-tolerant landscaping would be installed across the project site. The project includes use of municipal recycled water for all landscape irrigation, as well as low water use practices such as drip irrigation and smart controllers that track weather patterns and adjust irrigation run times accordingly.
- Green infrastructure techniques would be used to treat and infiltrate stormwater runoff from the project site.
- Energy-efficient light-emitting diode (LED) lighting would be installed throughout the project.
- Residential buildings would be entirely electric and would use no natural gas.
- Electric vehicle charging stations would be provided at commercial and residential parking stalls in proportions consistent with then-current code requirements.
- Photovoltaic solar panels would be installed on top of all residential buildings and the parking structure, and all other new buildings would be made ready for installation of photovoltaic solar panels. Battery storage would be provided in apartment-style residential buildings.
- High-efficiency mechanical and hot-water systems would be installed in residential buildings.

3.3.4 Project Approvals

A number of permits and approvals would be required to allow development of the proposed project. As Lead Agency for consideration of the proposed project, the City of San Rafael would be responsible for the majority of the approvals required for project development. Other agencies also may have some authority related to the proposed project and its approvals. A list of anticipated permits, approvals, and reviews by the City and other agencies is provided in Table 3.F. In addition to the approvals listed below, the project sponsor is also requesting to use the density bonus to modify the development standards for height on the project site.

Table 3.F: Anticipated Approvals and Actions for Project Implementation

Lead Agency	Permit/Approval/Action
City of San Rafael	● Environmental Impact Report (EIR) Certification ● Adoption of Findings and Statement of Overriding Considerations ● Rezone to the Planned Development (PD) District ● Environmental and Design Review Permit ● Development Agreement ● Density Bonus Application ● Tentative Subdivision Map ● Master Signage Program
Responsible Agencies/Entities	
Pacific Gas & Electric (PG&E)	● Approval of electric improvements and connection permits
Marin Municipal Water District (MMWD)	● Approval of water improvements and connection permits
California Regional Water Quality Control Board (RWQCB)/Marin County Stormwater Pollution Prevention Program (SWPPP)	● Approval of National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge
Bay Area Air Quality Management District (BAAQMD)	● Permits for utility equipment

Source: Compiled by LSA (2023).

4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental impact that has been identified for the proposed Northgate Mall Redevelopment Project (project). The following discussion describes: (1) how a determination of significance is made; (2) the environmental issues addressed in this chapter; (3) the context for the evaluation of cumulative effects; (4) the format of the topical issue section; and (5) an evaluation of the project's environmental impacts in Sections 4.1 through 4.15.

DETERMINATION OF SIGNIFICANCE

The California Environmental Quality Act (CEQA) defines a significant effect as a substantial, or potentially substantial, adverse change in the environment.[1] The "environment" means the physical conditions existing in the area, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are based on the *State CEQA Guidelines* and applicable City of San Rafael (City) policies. As Lead Agency for environmental review of the proposed project, the City of San Rafael has the discretion to formulate project-specific thresholds of significance and to identify quantitative and qualitative standards, as appropriate, for the evaluation of potential environmental effects.[2,3] Given the environmental setting and location of the project area and the scale and complexity of the proposed project, the City has chosen to develop project-specific thresholds, which are adapted from Appendix G of the *State CEQA Guidelines* using relevant local and regional regulatory, planning, and policy documents (e.g., the City's General Plan) modified as appropriate to the local setting for the resource topic being evaluated and the potential environmental effects of the proposed project. Appendix G checklist questions that are not relevant to the project location or proposed actions are not included as significance thresholds for specific topic areas.

In determining whether a project's impacts are significant, an Environmental Impact Report (EIR) ordinarily compares the environmental conditions with the proposed project to the existing environmental conditions, which are referred as the "baseline" for the impact analysis. The baseline most commonly used is based on environmental conditions in existence at the time that the Notice of Preparation (NOP) was published, which for the proposed project was December 9, 2021. However, as authorized under CEQA and upheld by the courts, the City has determined that this EIR should evaluate impacts of project operations (as opposed to project construction) compared to a baseline of normal shopping center operations rather than the reduced level of activity that was experienced due to the COVID-19 state of emergency that was in effect in 2021. The existing condition descriptions and comparative analysis of project impacts in this EIR assumes full occupancy of the Northgate Mall's total existing gross leasable area (i.e., the total building square footage on the project site without the parking structure) of approximately 766,507 square feet.

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1 California Public Resources Code Section 21068 (2022).
2 *State CEQA Guidelines*. 2023. Section 15064.7.
3 *Rominger v. County of Colusa (2014) 226 Cal. App. 4th 690.*

ISSUES ADDRESSED IN THE DRAFT EIR

Sections 4.1 through 4.15 of this chapter describe the environmental setting of the project as evaluated in the EIR and the impacts that are expected to result from implementation of the proposed project. Mitigation measures are proposed to reduce potential impacts, where appropriate. The following environmental issues are addressed in this chapter:

- 4.1, Land Use and Planning
- 4.2, Population and Housing
- 4.3, Visual Resources
- 4.4, Cultural Resources
- 4.5, Tribal Cultural Resources
- 4.6, Geology and Soils
- 4.7, Hydrology and Water Quality
- 4.8, Hazards and Hazardous Materials
- 4.9, Transportation
- 4.10, Air Quality
- 4.11, Greenhouse Gas Emissions
- 4.12, Noise
- 4.13, Public Services and Recreation
- 4.14, Utilities and Service Systems
- 4.15, Energy

Preliminary analysis determined that development of the proposed project would not result in significant impacts to the following environmental topics: agriculture and forestry resources, biological resources, mineral resources, and wildfire. Consequently, these issues are not examined in this EIR and are briefly addressed in Chapter 5.0, Other CEQA Considerations.

Section 4.1 discusses consistency with the City's land use and planning policies, including the General Plan and the Zoning Ordinance. It should be noted that, according to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts or where those conflicts relate to avoiding or mitigating environmental impacts. Any such associated physical environmental impacts are discussed in the Initial Study or appropriate sections of this EIR. City decision-makers will further evaluate zoning compliance and other policy considerations when considering approval of the proposed project.

CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts." Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The cumulative discussions in Sections 4.1 through 4.15 explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, citywide, regional). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. CEQA requires that cumulative impacts be discussed using either a list of past, present,

and probable future projects producing related or cumulative impacts, or a summary of projections contained in an adopted local, regional, or Statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. There are no applications for potential projects within the project area currently on file with the City; therefore, a list-based approach is not used in this analysis. It is also therefore assumed that there would not be any projects within the vicinity of the site that would be under construction at the same time as Phase 1 of the proposed project. Future projects that could be under construction at the time that Phase 2 is developed are unknown at this time, and any analysis of such individual future projects occurring concurrently with construction of the proposed project would be speculative. This project-specific analysis employs a projection-based approach and takes into account growth from the proposed project in combination with impacts from projected growth within San Rafael, as forecast by the San Rafael General Plan 2040. The projected growth resulting from implementation of General Plan 2040, which was evaluated in the General Plan EIR, includes 4,460 new residential units, 8,910 new residents, and 4,155 new employees. As of the publication of this EIR, there have been no projects that are under construction, and no projects that have been approved or are currently under review that would require a General Plan Amendment. Therefore, no adjustments have been made to the projections included in General Plan 2040.

FORMAT OF ISSUE SECTIONS

The environmental topical section is composed of two primary parts: (1) Setting, and (2) Impacts and Mitigation Measures. The following provides an overview of the general organization and the information provided in those two parts:

- **Setting:** The Setting section for each environmental topic generally provides a description of the applicable physical setting (e.g., existing land uses, existing traffic conditions) for the project site and its surroundings in San Rafael. It also provides an overview of regulatory considerations that are applicable to each specific environmental topic.

- **Impacts and Mitigation Measures:** The Impacts and Mitigation Measures section for each environmental topic presents a discussion of the potential impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which are the thresholds used to determine whether an impact is potentially significant. These thresholds are adapted from Appendix G of the *State CEQA Guidelines* and apply local and regional criteria applicable to the project area. The latter part of this section presents the potential impacts from the proposed project and mitigation measures, if necessary. The potential impacts of the proposed project are organized into separate categories based on the criteria listed in each topical section. Cumulative impacts are also addressed.

  Under each category, evidence is presented to show the cause-and-effect relationship between the proposed project and potential changes in the environment. In accordance with *State CEQA Guidelines* Section 15126.2(a), this EIR is required to "identify and focus on the significant effects of the proposed project on the environment." The magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether impacts may be significant. In accordance with CEQA, potential project

impacts, if any, are classified as follows for each of the environmental topics discussed in this EIR:

- **Significant Impact (S):** This classification refers to impacts that are identified as potentially significant because the established threshold would be exceeded with implementation of the proposed project. This determination is made prior to identification of mitigation measures.

- **Less than Significant Impact (LTS):** Less than significant impacts are environmental impacts that have been identified but are either not potentially significant or can be feasibly mitigated to a level of insignificance. If the proposed project is approved, the decision-making body is required to make findings pursuant to *State CEQA Guidelines* Section 15091 that significant impacts have been mitigated to the extent feasible through implementation of mitigation measures, if required.

- **Significant and Unavoidable Impact (SU):** This classification refers to impacts that are significant, cannot be mitigated with implementation of feasible mitigation measures, and that cannot be avoided with implementation of the project as proposed. If the proposed project is approved with significant and unavoidable impacts, the decision-making body is required to adopt a statement of overriding considerations pursuant to *State CEQA Guidelines* Section 15093 explaining why the project benefits outweigh those significant and unavoidable environmental impacts.

Significant impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively and begin with an acronymic or abbreviated reference to the impact section (e.g., TRA for Transportation). The following symbols are used for their respective individual topics:

- LUP, Land Use and Planning
- POP, Population and Housing
- VIS, Visual Resources
- CUL, Cultural Resources
- TCR, Tribal Cultural Resources
- GEO, Geology and Soils
- HYD, Hydrology and Water Quality
- HAZ, Hazards and Hazardous Materials
- TRA, Transportation
- AIR, Air Quality
- GHG, Greenhouse Gas Emissions
- NOI, Noise
- PSR, Public Services and Recreation
- UTL, Utilities and Service Systems
- ENR, Energy

4.1 LAND USE AND PLANNING

This section describes the existing land uses on and around the project site. It identifies potential impacts related to land use and planning that could result from development of the proposed project and recommends mitigation measures, as appropriate.

This section also evaluates the proposed project's consistency with applicable planning policies. While this section contains a discussion of the consistency of the project with relevant land use policies, policy conflicts, in and of themselves, do not constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts when they would result in direct physical impacts. Therefore, this section discusses land use policies for informational purposes only. All other associated physical impacts are discussed in this Environmental Impact Report (EIR) in specific topical sections, as applicable.

4.1.1 Setting

The following subsections provide an overview of the project location, the project site, and adjacent existing and planned land uses.

4.1.1.1 Overview

San Rafael is in Marin County in the northwestern region of the San Francisco Bay Area. San Rafael is bounded by Novato to the north, the towns of Fairfax, San Anselmo, and Ross to the west, Larkspur to the south, and the San Pablo and San Francisco Bays to the east. According to the United States Census Bureau, San Rafael encompasses approximately 16.59 square miles.[1]

The approximately 44.76-acre project site consists of the existing Northgate Mall, which is located within the San Rafael Town Center in northern San Rafael just west of United States Route 101 (US-101). The project site is generally surrounded by a mix of uses, including commercial, residential, open space, and institutional, as depicted on Figure 3-2 in Chapter 3.0, Project Description, and further described below. Figures 3-8 through 3-10 in Chapter 3.0, Project Description, include photos of surrounding land uses, and viewpoint locations are shown on Figure 3-4. Regional vehicular access to the project site is via US-101. The nearest access points to and from US-101 are on- and off-ramps located immediately north of the project site along Manuel T. Freitas Parkway. Local roadways providing access to the project site include Las Gallinas Avenue, Northgate Drive, Merrydale Road, Thorndale Drive, and Del Presidio Boulevard, which connects Las Gallinas Avenue to Manuel T. Freitas Parkway.

4.1.1.2 Existing Land Uses

The existing mall is generally oriented on a north-south axis, with the main building in the center of the project site and surrounded by surface parking and standalone buildings and structures. The main mall building, which is a total of approximately 633,783 square feet in size, consists of five

[1] United States Census Bureau. 2010. *QuickFacts San Rafael City, California*. Website: https://www.census.gov/quickfacts/fact/table/sanrafaelcitycalifornia,US/LND110210 (accessed February 12, 2023).

sections: (1) Mall Shops East, (2) Mall Shops West, (3) Century Theatre, (4) RH Outlet,[2] and (5) Macy's. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure containing approximately 473 parking spaces, and a vacant retail building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building.

The project site is largely developed and covered with buildings, other structures, and surface parking. Landscaping on the project site consists of ornamental trees and shrubs throughout the project site, including landscaping strips along the boundaries of the site that contain street trees and shrubs, planters with trees within the surface parking lot, and some mature trees located adjacent to the existing buildings.

Currently there are a total of 2,899 parking spaces on the project site, which consist of 2,380 standard spaces, 22 handicap spaces, and 15 van-size spaces within the surface parking lot, 473 spaces within the parking structure, and 9 on-street parking spaces between the main building and Kohl's building. The 473-space parking structure is located on the western portion of the project site, just south of the Kohl's building. In addition to access from the surface parking lot, the parking structure is also accessible from two driveways along Northgate Drive. The second floor of the parking structure also includes a pedestrian bridge that provides direct access to the second floor of the Kohl's building.

Automobile access to the project site is provided via driveways from Las Gallinas Avenue and Northgate Drive. Within the site, automobile access is provided to each of the buildings via internal roadways adjacent to the surface parking lot. Pedestrian access to the project site is provided by sidewalks along Northgate Drive and Las Gallinas Avenue, as well as sidewalks along the internal roadways. Bicycle facilities within the vicinity of the project site consist of bicycle lanes along Northgate Drive.

4.1.1.3 Existing Land Uses in the Vicinity of the Project Site

The project site is located in the northern area of San Rafael, within the San Rafael Town Center area just west of US-101. The project site is generally surrounded by a mix of uses, including commercial, residential, open space, and institutional, as depicted on Figure 3-2 in Chapter 3.0, Project Description, and further described below. Figures 3-8 through 3-10 in Chapter 3.0, Project Description, include photos of surrounding land uses, and viewpoint locations are shown on Figure 3-4.

- **North of the Project Site:** The project site is bordered to the north by the east-west segment of Las Gallinas Avenue, across which are various commercial uses (see Photos 9 and 10 on Figure 3-9). Farther north is Manuel T. Freitas Parkway, which includes on- and off-ramps for US-101 as well as a mix of hotel and single- and multi-family residential uses.

- **East of the Project Site:** The project site is bordered to the east by the north-south segment of Las Gallinas Avenue. Across Las Gallinas Avenue to the east are a mix of uses, including

[2] The RH Outlet building was formerly known as the Sears anchor. Certain project application materials refer to the building by the Sears name.

commercial uses and the Mt. Olivet San Rafael Cemetery (see Photo 11 on Figure 3-10). Merrydale Road is also located east of the project site. Farther east is US-101, which runs north-south in the vicinity of the project site, across which are commercial, healthcare, and residential uses.

- **South of the Project Site:** The project site is bordered to the south by the east-west segment of Northgate Drive. Land uses south of Northgate Drive generally consist of single- and multi-family residential uses (see Photo 12 on Figure 3-10). Hartzell Park is also located south of the project site, and Terra Linda High School is located to the southeast.

- **West of the Project Site:** The project site is bordered to the west by the north-south segment of Northgate Drive. Across Northgate Drive is a sloped hillside and Villa Marin (a retirement community) as well as multi-family residential units (see Photos 7 and 8 on Figure 3-8). Past Villa Marin are additional single- and multi-family residential units, Vallecito Elementary School, and the Kaiser Permanente San Rafael Medical Center.

4.1.1.4 Regulatory Framework

The following section provides a brief description of the regulations affecting land use and planning at the State, regional, and local level.

State Regulations. State regulations applicable to the proposed project include California State Planning and Zoning Law, the Sustainable Communities and Climate Protection Act of 2008 (Senate Bill [SB] 375), and Government Code 66300 et seq (the Housing Crisis Act).

California State Planning and Zoning Law. This law, which is codified in California Government Code Sections 65000–66037, delegates most of the State's local land use and development decisions to cities and counties. The California Government Code establishes specific requirements pertaining to the regulation of land uses by local governments, including general plan requirements, specific plans, subdivisions, and zoning. California Government Code Section 65302 requires that all California cities and counties include the following seven elements in their general plan: (1) land use, (2) circulation, (3) housing, (4) conservation, (5) open space, (6) noise, and (7) safety. Cities and counties that have identified disadvantaged communities must also address environmental justice in their general plans, including air quality.[3]

Sustainable Communities and Climate Protection Act of 2008 (SB 375). This statute requires California's regional planning agencies to include a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) in their Regional Transportation Plans (RTP). SB 375 was enacted to reduce greenhouse gas (GHG) emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. The SCS provides a plan for meeting the regional emissions reduction targets established by the California Air

[3] Senate Bill 1000 (SB 1000), adopted in 2016, requires both cities and counties that have disadvantaged communities to incorporate environmental justice (EJ) policies into their general plans, either in a separate EJ element or by integrating related goals, policies, and objectives throughout the other elements. This update, or revision if the local government already has EJ goals, policies, and objectives, must happen "upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018."

Resources Board (CARB). If the emission reduction targets cannot be met through the SCS, an APS may be developed that shows how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 also offers local governments' regulatory and other incentives to encourage more compact new development and transportation alternatives.

The requirements of SB 375 are reflected in Plan Bay Area 2050[4] which was adopted by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), and serves the regional planning agencies in the nine-county region composed of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. Plan Bay Area 2050 is further discussed below.

Government Code 66300 et seq. (Housing Crisis Act of 2019). Government Code 66300 et seq. has restrictions on implementing new development policies, standards, or conditions that may restrict housing developments, including any initiatives or referendums voted into law by the general populace. Cities and counties are restricted from implementing any new development policies, standards, or conditions that have any of the following effects with respect to residential land use:

- A change to the general plan land use designation, specific plan land use designation, or zoning that results in a less intensive use. Less intensive use means: (i) reductions in height, density, or floor area ratio (FAR), (ii) new or increased open space or lot size requirements, (iii) new or increased setback requirements, minimum footage requirements, or maximum lot coverage limitations, and (iv) anything that would lessen the intensity of housing.

- A reduction of the intensity of land use within an existing general plan land use designation, specific plan land use designation, or zoning below what was allowed under the applicable land use designation and zoning ordinance in effect as of January 1, 2018 unless the City concurrently designates for residential use and rezones other land in the City in order to ensure there is no net loss in residential capacity in the City.

- A moratorium, or similar restriction or limitation, on housing development, including mixed-use development, unless it is necessary to specifically protect against an imminent threat to the health and safety of persons in the affected jurisdiction.

- After January 1, 2020, any new design standards that are not objective design standards.

- Enforcement of any rule that: (i) limits land use approvals or limits the issuance of permits necessary for the approval and construction of housing, (ii) imposes a cap on the number of housing units, or (iii) limits the population. This restriction, however, does not apply to any

[4] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2021. Plan Bay Area 2050, A Vision for the Future. October 21. Website: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf (December 2023).

laws passed prior to January 1, 2005, in cities or counties that are predominantly agricultural.

- Demolishing any existing housing units, unless the housing development project would create at least as many housing units.

Regional and Local Agency Regulations. Regional and local agency regulations include Plan Bay Area 2050, the San Rafael General Plan, and San Rafael Zoning Ordinance.

Plan Bay Area 2050. As discussed above, Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan for the San Francisco Bay Area. As required by SB 375, all metropolitan regions in California must complete an SCS as part of an RTP. This strategy integrates transportation, land use, and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050 meets those requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The plan neither funds specific transportation projects nor changes local land use policies.

In the San Francisco Bay Area, the MTC and ABAG adopted Plan Bay Area 2050 in October 2021. To meet the GHG reduction targets, the plan identifies four growth geographies where future growth in housing and jobs should be focused: Priority Development Areas (PDAs), Priority Production Areas (PPAs), Transit-Rich Areas (TRAs), and High-Resource Areas (HRAs). The agencies estimate more than 80 percent of housing growth would occur within TRAs and nearly 30 percent would be within HRAs, and more than 60 percent of job growth would be within walking distance of high-quality transit between 2015 and 2050.[5]

A PDA is a funding and planning tool. If a local jurisdiction voluntarily nominates an area for PDA designation, the designation provides the local jurisdiction with access to funds and grants to develop and adopt area plans to plan for, design, and regulate future growth of the area as well as construct needed and/or planned infrastructure improvements. The project site is located within the Northgate PDA, which indicates that it is an area generally near job centers or frequent transit that has been identified by the City of San Rafael (City) for housing and job growth.

San Rafael General Plan. The San Rafael General Plan, adopted in August 2021,[6] is a document that establishes the basis for zoning regulations and provides guidance in the evaluation of development proposals. The General Plan consists of 13 elements that cover issues including: land use; neighborhoods; community design and preservation; conservation and climate change; parks, recreation and open space: safety and resilience; noise; mobility; community services and infrastructure; arts and culture; economic vitality; equity, diversity, and inclusion;

[5] Growth projections do not sum to 100 percent because PDAs, TRAs, and HRAs are not mutually exclusive.
[6] City of San Rafael. 2021. *San Rafael General Plan 2040.* August.

and housing. A discussion of the applicable General Plan policies is included in Table 4.1.A at the end of this section.

The project site is designated as Community Commercial Mixed Use (CCMU) on the City's General Plan Land Use Map. The intent of the CCMU designation is to provide for general retail and service uses, restaurants, automobile sales and service uses, hotels and motels, and other commercial activities. Office, mixed-use, and residential uses are also permitted within the CCMU land use designation.

The San Rafael General Plan also organizes the city into five planning areas: (1) Downtown, (2) Central San Rafael, (3) North San Rafael, (4) Southeast San Rafael/Canal, and (5) San Pedro Peninsula. The project site is located within the North San Rafael planning area, which includes neighborhoods on the west and east sides of US-101 north of Puerto Suelo Hill. This planning area includes 10 subareas, and the site is within the North San Rafael Town Center subarea. In 1997, the North San Rafael Vision[7] described the Town Center as a place where the values and history and community would be expressed and supported, community identity would be strengthened, and neighborhood cohesion would be fostered. While the 1997 Vision's goals remain, proposed development within the Town Center Subarea should consider the outlook for retail and office uses, the need for housing, and changing modes and patterns of transportation, among other factors.

San Rafael Zoning Ordinance. The Zoning Ordinance consists of a zoning map that delineates the boundaries of zoning designations within San Rafael and regulations that govern the use of land and placement of buildings and improvements within the various classes of districts. The purpose of the Zoning Ordinance is to protect the health, safety, peace, morals, comfort, convenience, and general welfare of the people of San Rafael, and to serve as an instrument for implementation of the General Plan. The project site is currently zoned General Commercial (GC),[8] which promotes a full range of retail and services uses in major shopping centers and certain areas of the city that have freeway or major street access and visibility. Retail and commercial uses are generally permitted within the GC district, and multi-family residential uses are allowed through an administrative use permit.[9] Surrounding zoning districts include GC, Office (O), and Commercial Office (C/O) to the north; O, Public/Quasi Public to the east; and Single and Multifamily Residential (R10, R7.5, HR1.5, and HR1.8), Planned Development (PD), and Parks/Open Space (P/OS) to the south and west.

4.1.2 Impacts and Mitigation Measures

The following section provides a discussion of impacts related to land use that could result from development of the proposed project. The section begins with the criteria of significance, establishing the thresholds to determine whether an impact is significant. The latter part of this

[7] City of San Rafael. 1997. *North San Rafael Vision*. November.
[8] City of San Rafael. 2023. San Rafael Zoning Map. Website: https://san-rafael.maps.arcgis.com/apps/View/index.html?appid=f9a6eba03a8d44f5919bfef783f056c2 (accessed December 2023).
[9] City of San Rafael. 2021. *San Rafael Municipal Code.* February 16.

section describes the land use impacts from the proposed project and recommends mitigation measures, if required.

As noted earlier, conflicts between a project and applicable policies do not constitute significant physical environmental impacts in and of themselves; as such, the proposed project's consistency with applicable policies is discussed separately from the physical land use impacts associated with the proposed project. A policy inconsistency is considered to be a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect, and it is anticipated that the inconsistency would result in a significant adverse physical impact when evaluated against the established significance criteria. The proposed project's consistency with regional policies related to physical environmental topics (e.g., air quality, transportation, and noise) is analyzed and discussed in those topical sections of the EIR.

4.1.1.5 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant impact on the environment related to land use and planning if it would:

Threshold 4.1.1: Eliminate or reduce existing levels of connectivity within San Rafael or other communities to the extent that:

- An existing community would become physically separated from one or more other communities;
- Existing residents would have their access to transit, commercial centers, employment areas, schools, parks, or governmental services or facilities substantially diminished; or
- Employees within existing employment centers would have their access to transit commercial centers, or governmental services or facilities substantially diminished.

Threshold 4.1.2: Result in a conflict between the proposed project and the provisions of the following planning and policy documents, due to any of the significant impacts identified in this EIR:

- San Rafael General Plan
- San Rafael Zoning Ordinance
- Plan Bay Area 2050

4.1.1.6 Project Impacts

The following describes the potential impacts related to land use that could result from implementation of the proposed project. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) would not differ by phase and therefore are not differentiated in this section.

Threshold 4.1.1: Physically Divide an Established Community. The division of an established community would typically involve the construction of a barrier to neighborhood access (e.g., a new freeway segment) or the removal of a means of access (e.g., a bridge or roadway) that would impair mobility within an existing community or between a community and outlying areas. For example, the construction of an interstate highway through an existing community could constrain travel from one side of the community to another. Similarly, such construction could also impair travel to areas outside of the community.

The project site is in northern San Rafael just west of US-101. The approximately 44.76-acre project site is developed with an existing mall complex that consists of a main building in the center that is surrounded by surface parking and standalone buildings and structures. Existing roadways and urban development surround the project site on all four sides, including Las Gallinas Avenue and commercial uses to the north; Las Gallinas Avenue and Merrydale Road and a mix of uses, including commercial uses and the Mt. Olivet San Rafael Cemetery to the east; Northgate Drive, single- and multi-family residential uses, and Hartzell Park to the south; and Northgate Drive, a retirement community, and multi-family residential units to the west. The site is accessed by these surrounding roadways via multiple driveways, but none of these roadways extend into the site.

The proposed project would result in the redevelopment of the existing mall through demolition, renovation, and new construction with a mix of commercial and residential land uses. The proposed project would be developed in two phases and at full buildout would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units. The proposed project would also include various associated site improvements, including a Town Square, modifications to the internal circulation and parking, and improvements to infrastructure and landscaping. The proposed project would not alter the through travel lanes on Las Gallinas Avenue or Northgate Drive (which surround the site), or on Merrydale Road, Thorndale Drive, or Del Presidio Boulevard (which provide through access to the drive aisles into the site) and would not impede access to adjacent uses. In addition, the proposed project would include connections to existing and planned pedestrian facilities, including the planned multi-modal path along Merrydale Road to the Marin Civic Center Sonoma-Marin Area Rail Transit (SMART) Station. Internal roadways providing access to the surface parking lots and between the buildings would be reconfigured. New pedestrian and bicycle paths would be provided throughout the project site, and a multi-modal path would be provided along the Las Gallinas Avenue frontage. Construction of the proposed project would not limit pedestrian, bicycle, or vehicular connections to the site, but would instead improve connections and throughways to and through the site.

As noted above, the proposed project would include the construction of a Town Square, which would serve as a community hub and gathering space near the center of the project site. Additional open spaces and landscaped areas would be provided on the project site and would be accessible by the public via existing and proposed pedestrian and bicycle pathways. Aside from existing sidewalks around the perimeter and pedestrian spaces near the existing retail uses, the project site is largely made up of surface parking lots, which inhibit walking and bicycling. New dedicated pathways and open spaces on the project site would enhance connection to and through the project site for surrounding residents and employees in the area by encouraging walking and bicycling on the project site and reducing the need for an automobile, thereby increasing connectivity to the residential and commercial uses on the project site.

As previously described, the proposed project would result in the reduction of commercial uses on the project site. However, the proposed project would also retain some commercial space and include new commercial spaces that would provide similar shopping and dining opportunities for surrounding residents and employees. The proposed project would not result in the modification of any nearby transit centers or restrict access to employment areas, schools, parks, or governmental services or facilities. Instead, the proposed project would increase access to these areas and facilities (e.g., the proposed Town Square and library space). Therefore, implementation of the project would not result in the physical division of the adjacent surrounding areas or any other established community; this impact would be **less than significant**.

Threshold 4.1.2: Policy Conflicts. The following sections address the proposed project's compliance and compatibility with the applicable land use regulations of the General Plan, the Zoning Ordinance, and Plan Bay Area 2050.

San Rafael General Plan. Potential conflicts with specific General Plan policies are discussed below and evaluated in detail in Table 4.1.A (provided at the end of this section). Only policies adopted for the purpose of avoiding or mitigating an environmental effect and that relate directly to development of the project site are discussed. As indicated in the discussion below, the proposed project would generally be consistent with the overall vision and intent of the General Plan. In total, the General Plan assumed buildout would result in approximately 4,460 new residential units, 8,910 new residents, and 4,155 new employees by 2040, with approximately 2,260 residential units, 5,340 residents, and 2,135 employees occurring outside of the Downtown area. The project site has a land use designation of CCMU, which allows for 21.8 to 43.6 units per net acre and a maximum commercial FAR of 0.3. At full buildout, the proposed project would include 1,422 units across 44.76 acres, for a density of 31.8 units per net acre. With a total of approximately 217,520 square feet of commercial space, the FAR would be approximately 0.11. While the General Plan does not identify specific development projects, the proposed project does fit within the overall development assumed under the General Plan, as well as the specific density requirements for the project site. In addition, Phase 1 of the proposed project is specifically identified in the 2023-2031 Housing Element, which was adopted in May 2023 and did not change any of the overall build-out numbers from the 2040 General Plan.

As previously discussed, the project site is also located within the North San Rafael PDA, which includes the Northgate Mall, Northgate One shopping center, Northgate Three shopping center, and Las Gallinas office and gas station areas. This PDA also overlaps with the Civic Center SMART Station Transit Priority Area (TPA), which encompasses the 0.5-mile radius surrounding the Marin Civic Center SMART Station. PDAs and TPAs are identified areas where concentrated development can have beneficial environmental effects and reduce adverse environmental impacts. A PDA is a place that has convenient public transit service, often referred to as "transit-oriented," that is prioritized by local governments (e.g., the City) for housing, jobs, and services within existing communities. The proposed project's mix of residential and commercial uses is consistent with the type of development anticipated by the City for the North San Rafael PDA.

City decision-makers will evaluate the proposed project in the context of the General Plan and, as part of the development review process for the proposed project, will consider potential

policy conflicts. Consideration of the consistency with General Plan policies would take place independently of the environmental review process.

As shown on Table 4.1.A (provided at the end of this section), the proposed project would be generally consistent with the land use and planning-related policies outlined in the City's General Plan. Although the proposed project would only be partially consistent with General Plan Policies C-4.2B, C-4.5, and C-5.2 (climate change policies) because the project would incorporate natural gas appliances for use in commercial kitchens (Impacts GHG-1 and GHG-2) and Policies N-1.2 and N-1.5 (noise standards) because the project would result in noise levels that would exceed the City's land use compatibility standards (Impact NOI-2), the City may determine that, overall, compliance with the vision and intent of the General Plan has been achieved, and these impacts have been mitigated to the extent feasible, given applicable economic, legal, social, technological and other considerations. Further, these impacts have been identified as significant and unavoidable in the respective topical sections of this EIR, under the applicable thresholds adopted by the City and other regulatory agencies (i.e., the BAAQMD). Therefore, the project would result in a **less than significant** impact related to consistency with General Plan policies adopted to mitigate adverse environmental impacts.

San Rafael Zoning Ordinance. The project site is currently zoned General Commercial, which promotes a full range of retail and service uses in major shopping centers and certain areas of San Rafael that have freeway or major street access and visibility. Retail and commercial uses are generally permitted within the General Commercial District, and multifamily residential uses are allowed through the administrative use permit process. The proposed project will include a rezone to the Planned Development (PD) District, which establishes a procedure for the development of large lots of land in order to reduce or eliminate the rigidity, delays, and conflicts that otherwise would result from application of zoning standards and procedures designed primarily for small lots. The PD District encourages innovative design on large sites by allowing flexibility in property development standards and accommodates various types of large-scale, complex, mixed-use, and phased developments. The proposed project will also require an Environmental and Design Review Permit, a Tentative Subdivision Map, and a Master Signage Program. Environmental and Design Review implements General Plan policies concerning the environment and design by guiding the location, functions, and appearance of development. For an Environmental and Design Review Permit to be approved, the following findings must be made:

a. The project design is in accord with the General Plan, the objectives of the zoning ordinance, and the purposes of Chapter 14.25 of the San Rafael Municipal Code.

b. The project design is consistent with all applicable site, architecture, and landscaping design criteria and guidelines for the district in which the site is located.

c. The project design minimizes adverse environmental impacts.

d. The project design will not be detrimental to the public health, safety, or welfare nor materially injurious to properties or improvements in the vicinity.

A Tentative Subdivision Map is required for all requests to divide real property into five or more lots for development. In addition to other findings, for a Tentative Subdivision Map to be approved, findings must be made that the proposed map is consistent with the San Rafael General Plan and that the design of the subdivision is not likely to cause substantial environmental damage. A Master Signage Program regulates all signage on the project site intended for public view.

Additionally, because the proposed project would provide affordable housing, the project sponsor is requesting to use the density bonus benefit available under the State Density Bonus Law to modify the development standards for maximum height on the project site. The proposed project includes a request to increase the height limit across the project site from 36 feet to 78 feet, with projections up to 12 feet above the 78-foot limit. As discussed in Section 4.3, Visual Resources, although the proposed project would result in an increase in intensity of development at the project site, the proposed development would not substantially or completely block public views because intermittent views of surrounding hillsides and mountains would still be available from publicly accessible places within and surrounding the project site.

As a result of regulations built into the PD District and the project sponsor's compliance with those regulations, the proposed rezone and development standard changes do not represent significant land use policy impacts, and this impact would be **less than significant**.

Plan Bay Area 2050. Plan Bay Area 2050 is an integrated long-range transportation and land use plan. The Plan's core strategy is "focused growth" in existing communities along the existing transportation network to achieve key regional equity, economic, and environmental goals, including reducing vehicle miles traveled (VMT) and contributing to climate goals. The strategy builds upon existing community characteristics and leverages existing infrastructure to mitigate impacts on less developed areas. The key to implementing the focused growth strategy are four Growth Geographies where future growth in housing and jobs should be focused: PDAs, PPAs, TRAs, and HRAs. These existing neighborhoods are served by public transit and have been identified as appropriate for additional, compact development. The project site is located within a Growth Geography, specifically within a PDA. As noted above, the project site is located within the Northgate PDA, would include both residential and commercial uses, and therefore would be consistent with the core strategy of Plan Bay Area 2050. In addition, the proposed project would not exceed VMT thresholds (see Section 4.9, Transportation), is anticipated to have a net-negative impact on operational GHG emissions (see Section 4.11, Greenhouse Gas Emissions), and would not result in a significant impact on air quality (see Section 4.10, Air Quality). Therefore, the proposed project would be consistent with Plan Bay Area 2050, and this impact would be **less than significant.**

4.1.1.7 Cumulative Impacts

The cumulative geographic context for land use, planning, and policy considerations for development consists of the project site in addition to the surrounding areas and uses abutting the project site. Cumulatively considerable impacts would occur if a project conflicted with an established land use policy or program adopted to avoid or mitigate an environmental effect or result in a physical division of an established community. As described above, the proposed project

would have a less than significant impact related to land use and planning, and no mitigation measures are required.

Future development within San Rafael would result in changes to the existing land use environment through the conversion of vacant land to developed uses, or through conversions of existing land uses (e.g., from residential to commercial). Cumulative development would be reviewed for consistency with adopted land use plans and policies by the City, in accordance with the requirements of the California Environmental Quality Act (CEQA) and planning requirements. Development of future projects proposing changes in land use would require project-specific consistency analysis to ensure that such a change would not conflict with the General Plan or Municipal Code.

Cumulative development projects would also be required to comply with the goals and policies outlined in the applicable City plans and regional plans detailed in this EIR. Construction and operation of the proposed project combined with cumulative development in accordance with the City's General Plan would not result in significant land use and planning impacts. The proposed project would be consistent with applicable plans, goals, policies, and regulations of the City's General Plan and Municipal Code, as well as Plan Bay Area 2050. Therefore, the cumulative impact of the proposed project with respect to future development would not be cumulatively considerable, would not result in significant land use impacts, and is, therefore, **less than significant**.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
San Rafael General Plan 2040 – Land Use Element		
Policy LU-1.2: Development Timing	For health, safety, and general welfare reasons, new development should only occur when adequate infrastructure is available, consistent with the following findings: a. The project is consistent with adopted Vehicle Miles Traveled (VMT) standards, as well as the requirements for Level of Service (LOS) specified in the Mobility Element. b. Planned circulation improvements necessary to meet City standards for the project have funding commitments and completed environmental review. c. Water, sanitary sewer, storm sewer, and other infrastructure improvements needed to serve the proposed development have been evaluated and confirmed to be in place or to be available to serve the development by the time it is constructed. d. The project has incorporated design and construction measures to adequately mitigate exposure to hazards, including flooding, sea level rise, and wildfire.	**Consistent.** As described in Section 4.9, Transportation, the proposed project would not exceed the VMT or LOS requirements adopted by the City. As shown in Tables 4.9.I through 4.9.K of Section 4.9, Transportation, the existing circulation network would be adequate to serve the proposed project, and no off site improvements would be necessary to address safety concerns. All of the circulation network improvements necessary to serve the proposed project have been identified in this EIR and would be constructed as part of the project. Similarly, as described in Section 4.14, Utilities and Infrastructure, all of the infrastructure improvements necessary to serve the proposed project have been identified in this EIR and would be constructed as part of the project, including sewer system expansion as identified in Mitigation Measure UTL-1. As described in Sections 4.7, Hydrology and Water Quality, and 4.8, Hazards and Hazardous Materials, the proposed project would not be exposed to risks related to sea level rise or wildfire, and mitigation measures have been identified to reduce potential impacts related to off-site flooding.
Policy LU-1.3: Land Use and Climate Change	Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.	***Consistent***. The proposed project includes redevelopment of the site with up to 217,520 square feet of renovated and new commercial uses, and the construction of up to 1,422 new residential units on a site that is surrounded by existing services and transportation options. The project site is located in a central area near transit stations with frequent bus service. The closest bus stops to the project site include Marin Transit Lines 35, 49, 257, and 645, all of which are located adjacent to the project site, and Line 71, which is located less than 0.5 mile from the project site. These bus lines provide service within San Rafael and surrounding Marin County cities and communities, including Downtown San Rafael, Novato, and Marin. Two Golden Gate Transit stops for Lines 54 and 70, which provide service to San Francisco, Novato, Larkspur, and Corte Madera, are also located less than 0.5 mile from the project site. Finally, the Marin Civic Center Sonoma-Marin Area Rail Transit (SMART) station is located approximately 0.4 mile from the project site. SMART provides service from Larkspur to the Sonoma County Airport.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy LU-1.8: Density of Residential Development	Use the density ranges in the Land Use Element to determine the number of housing units allowed on properties within the Planning Area. The following provisions apply: a. The density "range" includes a maximum and minimum. A given General Plan designation may have multiple corresponding zoning districts, including at least one district in which the maximum density may be achieved. Other zoning districts may have maximum densities that are less than the maximum indicated by the General Plan b. Calculation of allowable units shall be rounded to the nearest whole number. Where the number is less than 0.5, it shall be rounded down. Where the number is 0.5 or greater, it may be rounded up. c. The number of units permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, City design policies, and prevailing densities in adjacent areas. d. The maximum net density shown on the General Plan excludes density bonuses that may be provided for affordable housing or other community benefits, in accordance with State law and local policies. e. As required by State law, an accessory dwelling unit (ADU) or junior ADU shall not be counted as a dwelling unit for the purposes of calculating net density f. Areas in the "Downtown Mixed Use" General Plan category shall be exempt from the requirements of this policy and are instead subject to standards defined by the Downtown Precise Plan.	***Consistent***. The proposed 1,422 residential units are within the allowable number of housing units for the project site as determined using the density ranges in the Land Use Element. The project site has a land use designation of Community Commercial Mixed Use, which allows for 21.8 to 43.6 units per net acre and a maximum commercial FAR of 0.3. At full buildout, the proposed project would include 1,422 units across 44.76 acres, for a density of 31.8 units per net acre. With a total of approximately 217,520 square feet of commercial space, the FAR would be approximately 0.11.
Program LU-1.8B: Minimum Densities	The net density of new development shall be no less than the lower end of the density range specified by the General Plan for that property.	***Consistent***. The proposed 1,422 residential units are within the allowable number of housing units for the project site as determined using the density ranges in the Land Use Element. The project site has a land use designation of Community Commercial Mixed Use, which allows for 21.8 to 43.6 units per net acre and a maximum commercial FAR of 0.3. At full buildout, the proposed project would include 1,422 units across 44.76 acres, for a density of 31.8 units per net acre. With a total of approximately 217,520 square feet of commercial space, the FAR would be approximately 0.11.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy LU-1.10: Intensity of Non-Residential Development	Use the Floor Area Ratio limits on Figure 3-2 to determine the square footage of building space allowed on properties with non-residential General Plan designations. The following provisions apply: a. As with density, FAR is calculated on a "net" basis, and is based on the area of each parcel excluding streets and easements. b. The maximum FAR stated by the General Plan is not guaranteed. The square footage permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, and City design policies. c. The maximum FARs shown in Figure 3-2 exclude any residential development on the property. In the event that residential uses or mixed use projects are proposed on these sites, the maximum area is the sum of the FAR allowance plus the residential density allowance for the property. This Clause does not apply to Downtown San Rafael, which is regulated by the Downtown Precise Plan.	***Consistent.*** The project site has a land use designation of Community Commercial Mixed Use, which allows a maximum commercial FAR of 0.3. With a total of approximately 217,520 square feet of commercial space on a 44.76-acre project site, the FAR would be approximately 0.11.
Policy LU-1.15: Planned Development Zoning	Encourage the use of Planned Development (PD) zoning for development on parcels greater than five acres when the application of traditional zoning standards would make it more difficult to achieve General Plan goals. The PD zoning designation allows flexible design standards that are more responsive to site conditions as well as the transfer of allowable General Plan and zoning density between contiguous sites under common ownership.	***Consistent***. The project site is approximately 44.76 acres in size, and the proposed project would include a rezone to the PD District. The project site is currently zoned General Commercial. Policy NH-4.2 of the City's General Plan encourages revitalizing the Northgate Mall with a distinctive and vibrant mix of uses and allowing the addition of housing. Under the existing zoning, retail and restaurant uses are broadly allowed without discretionary approvals, while multi-family residential is allowed but requires an Administrative Use Permit. Under the proposed PD District zoning, shopping center, restaurant, and multi-family residential uses would be broadly allowed without discretionary approvals, which would make it easier to achieve the goals stated in Policy NH-4.2 of the General Plan.
Policy LU-1.17: Building Heights	Use General Plan Figures 3-3 and 3-4 as the basis for determining "baseline" maximum building heights in San Rafael. Maximum heights should continue to be codified through zoning and any applicable Specific Plans or Precise Plans. In addition, the following specific provisions related to building heights shall apply: a. Height of buildings existing or approved as of January 1, 1987 shall be considered as conforming to zoning standards	***Consistent***. The proposed project includes a request under the State Density Bonus Law to increase the height limit across the project site from 36 feet to 78 feet (with an allowance for an additional 12 feet of projections). The State Density Bonus Law, which applies to projects that include affordable housing, allows certain development standards, such as the maximum height, to be bypassed.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	b. Hotels outside of the Downtown Precise Plan boundary have a 54-foot height limit. Within Downtown, the height provisions of the Downtown Precise Plan apply (see Figure 3-4). c. As provided for by Policy LU-1.18, "baseline" building heights are subject to height bonuses where specific community benefits are provided, where a Variance or zoning exception is granted, or where a Transfer of Development Rights (TDR) is being implemented. d. Heights may be increased by up to six (6) feet above the baseline building heights as necessary to mitigate the exposure of properties to sea level rise and other flooding hazards (e.g., raising the first floor of habitable floor space above anticipated tidal flood elevations).	
Policy LU-1.18: Height Bonuses	Allow the granting of height bonuses for development that provides one or more of the amenities listed in Table 3-2, provided that the building's design is consistent with applicable design guidelines and standards. No more than one height bonus may be granted on each site. Use permit requirements for height bonuses are shown in Table 3-2. The bonuses may be used in lieu of those provided by State density bonus programs for affordable housing. Bonuses are not additive. In other words, an applicant using State density bonuses is not eligible for additional bonuses offered through local programs.	***Consistent***. As described above, the project sponsor is requesting to use the density bonus to modify the development standards for height on the project site. The proposed building designs would be consistent with applicable design guideline standards, and no more than one height bonus will be granted. As described in Table 3-2 of the General Plan, projects utilizing the State Density Bonus Law for housing development are not eligible to add the bonuses listed in Table 3-2.
Policy LU-3.2: New Development in Residential Neighborhoods	Preserve, enhance, and maintain the residential character of neighborhoods to keep them safe, desirable places to live. New development, redevelopment of existing buildings, and land use changes within and adjacent to residential areas should: • Enhance neighborhood image and design quality • Incorporate sensitive transitions in height and setbacks from adjacent properties • Preserve historic, unique, and architecturally significant structures • Respect and enhance natural features and terrain • Reduce exposure to hazards, including limited emergency vehicle access • Include amenities such as sidewalks, pathways, trees, and other landscape improvements • Maintain or enhance infrastructure service levels • Meet expected parking demand • Minimize reduction of views, privacy, and solar access for neighboring properties	***Consistent***. The proposed project would enhance the neighborhood image and design quality by upgrading the appearance of buildings, improving landscaping and outdoor spaces, providing community services, and providing multi-use pathways. The proposed project would incorporate sensitive transitions to the nearby residential uses by including the lower height residential buildings along the western edge and the higher height buildings near the center and eastern edges where the adjacent uses are commercial. As discussed in Section 4.4, Cultural Resources, the proposed project would not result in direct or indirect impacts to the Terra Linda Valley neighborhood, which is considered a historic resource. As discussed in Section 4.14, Utilities and Service Systems, the proposed project would maintain existing infrastructure service levels and include improvements needed to serve the project where necessary, including through implementation of Mitigation Measure UTL-1. The proposed project would include multi-use pathways throughout the project site and would substantially increase the amount of landscaping included on the project site.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
		As discussed in Section 4.3, Visual Resources, the proposed project would largely maintain existing views of scenic resources within the vicinity of the site and would not cast any new shadows that would impair solar access for neighboring properties. Finally, although parking and privacy are not environmental concerns, the proposed project is expected to exceed the parking requirements for the proposed development. Due to the topography of the site and surrounding development and vegetation, privacy for surrounding neighborhoods would not be reduced.
San Rafael General Plan 2040 – Neighborhoods Element		
Policy NH-4.1: North San Rafael	Maintain North San Rafael's character as an attractive, suburban community with a strong sense of community identity and easy access to well-managed open space and parks, convenient shopping and services, and excellent schools. The City is committed to protecting and restoring North San Rafael's natural environment, investing in multi-modal transportation improvements that make it easier to get around, creating new gathering places and activity centers, sustaining business vitality, and creating new housing options that respond to diverse community needs. Plans for North San Rafael need to recognize that this is a distinct and unique part of San Rafael. Standards for density, design, traffic, and parking shall be tailored to reflect local context. North San Rafael residents will be invited to have a voice at the citywide level and be directly involved in shaping decisions about the future of their community.	***Consistent***. The proposed project would include commercial, residential, open spaces, and amenity uses that would be located in a central and easy to access location. The proposed project would include a variety of residential units ranging in size and would include units that would be restricted to low-income households. The proposed project would include multi-use paths throughout the project site as well as a town square that would facilitate increased access to and through the project site for surrounding residential and commercial uses. The proposed project would include a diverse mix of uses that would help to sustain the commercial uses on the site, as well as the existing commercial uses in the areas surrounding the site.
Policy NH-4.2: North San Rafael Town Center	Strengthen the role of the North San Rafael Town Center as an attractive, thriving heart for the North San Rafael community: an economically viable centerpiece of commerce and activity with diverse activities for persons of all ages. This should include revitalizing Northgate Mall and surrounding business areas by encouraging: a. A distinctive and vibrant mix of uses, consistent with the area's characteristics b. A variety of high-quality stores, entertainment uses, and services to foster local patronage and adapt to the ongoing evolution of retail and commercial activities c. Upgrading of anchor and specialty stores, including an additional high-quality retail anchor if needed for economic vitality, consistent with traffic circulation standards	***Consistent***. The proposed project consists of the redevelopment of the Northgate Mall with a mix of residential and commercial uses. Anchor and specialty stores would be updated, and the proposed project would include a town center and amenity spaces with outdoor dining, lounge seating, and public gathering spaces. The proposed project would include a variety of residential units that range in size and include units that would be restricted to low-income households. Green infrastructure techniques would be used to treat and infiltrate stormwater runoff from the project site and LID methods would be used. The proposed project would upgrade the appearance of the buildings on the project site by replacing dated mall buildings with modern and updated commercial and residential buildings. The proposed project would also substantially increase the amount of landscaping on the project site. Additionally, the project would complete the North San Rafael Promenade by introducing multi-use pathways through the site.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	d. Nightlife activities, such as a late-night restaurant or coffee shops that harmonize with existing activities e. Upgrading the appearance of the buildings and landscaping f. Additional outdoor public places that support public gatherings and public art g. Continued community services, which may include an expanded public library h. Completion of the North San Rafael Promenade through the site i. Allowing the addition of housing, including maximizing the potential for affordable housing The scale of any improvements should be compatible with the surrounding community and should not exceed infrastructure capacity. New or expanded structures should demonstrate how views, sightlines, visual integrity, and character will be impacted and addressed. Promenade improvements described in the North San Rafael Promenade Conceptual Plan (2002) should be included in any substantial rehabilitation or expansion of the Mall. Opportunities to include green infrastructure and low impact development (LID) methods also should be pursued.	
Program NH-4.2B: Outdoor Gathering Places	Include outdoor public places that support community activities and entertainment such as a public plaza for periodic arts and cultural events, outdoor cafes with music, restaurants with sidewalk or patio dining, children's play areas, teen centered spaces, and other uses that provide outdoor seating. Design of retail spaces should be flexible enough to support these types of activities in the future.	***Consistent.*** The proposed project would include useable open space for each of the residential buildings, roof decks, public outdoor amenity spaces, and a public Town Square that would contain a large flexible lawn space, dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables.
Policy NH-4.4: Transportation Safety and Accessibility	Improve access and bicycle/pedestrian connections between Northgate One, the Mall at Northgate, Northgate Three, the Civic Center SMART station, the Civic Center, and surrounding neighborhoods.	***Consistent.*** The proposed project would include pedestrian and bicycle paths throughout the project site, and a multi-modal path would be provided along the Las Gallinas Avenue frontage.
San Rafael General Plan 2040 – Community Design and Preservation Element		
Policy CDP-1.2: Natural Features	Recognize and protect the key natural features that shape San Rafael's identity, including the Bay, local hills and ridgelines, creeks and wetlands, tree cover, and views of Mt. Tamalpais and other natural landmarks. Height limits and other building standards should respect San Rafael's natural topography and reinforce its sense of place, including the character and boundaries of individual neighborhoods.	***Consistent.*** Refer to Chapter 4.3, Visual Resources, of this EIR. The proposed project would have a less than significant impact related to visual resources, including scenic vistas. The proposed project would include an increase in building height on the project site beyond what is allowed by the Zoning Ordinance. However, this increase is requested pursuant to the State Density Bonus Law, which allows exceedances of development standards (among other allowances) in exchange for affordable housing.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy CDP-3.5: Street Trees	Encourage the planting and maintenance of street trees to reduce urban heat island effects, sequester carbon, improve air quality, absorb runoff and wind, define neighborhoods, and improve the appearance and character of city streets	***Consistent.*** A total of approximately 348 of the existing trees on the project site would be removed, and a minimum of 558 new trees would be planted throughout the project site during Phase 1. A total of approximately 124 of the existing trees on the project site would be removed, and a minimum of 169 new trees would be planted throughout the project site during Phase 2. In addition, landscaping would be provided throughout the project site in the open space areas, along internal roadways and pedestrian paths, within the surface parking lots, and along the site boundaries.
Policy CDP-4.1: Design Guidelines and Standards	Use design guidelines and standards to strengthen the visual and functional qualities of San Rafael's neighborhoods, districts, and centers. Guidelines and standards should ensure that new construction, additions, and alterations are compatible with the surrounding neighborhoods while still allowing for innovative, affordable design.	***Consistent.*** As discussed in Section 4.3, Visual Resources, the proposed project would be constructed in accordance with applicable residential and nonresidential design guidelines outlined in the San Rafael Design Guidelines, dated June 19, 2019. Compliance with these guidelines would be verified through the design review process.
Policy CDP-4.6: Open Space in Multi-Family Housing	Require private outdoor areas such as decks and patios, as well as common open space areas, in new multi-family development and mixed use housing. Common open space may include recreation facilities, gathering places, and site amenities such as picnic and play areas.	***Consistent.*** The proposed project would include useable open space at each residential building, including courtyards and roof decks. The proposed project would also include the Town Square, which would contain a large flexible lawn space, a dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables.
Policy CDP-4.9: Parking and Driveways	Encourage parking and circulation design that supports pedestrian movement and ensures the safety of all travelers, including locating parking to the side or rear of buildings, limiting driveway cuts and widths, and minimizing large expanses of pavement. Parking should be screened from the street by landscaping and should provide easy access to building entrances.	***Consistent.*** Phase 1 of the proposed project would include nine surface parking lots throughout the project site for the proposed commercial uses and Phase 2 of the proposed project would include eight surface parking lots throughout the project site for the proposed commercial uses. Parking areas would be broken up throughout the site to minimize large expanses of pavement and provide easy access to building entrances, and would be screened from the street by landscaping. The proposed project would also include multi-use pathways for use by pedestrians and bicyclists throughout the project site that would ensure the safety of travelers within the project site by being physically separated from roadways.
Policy CDP-4.10: Landscape Design	Encourage—and where appropriate require—privately owned and maintained landscaping that conserves water, contributes to neighborhood quality, complements building forms and materials, improves stormwater management and drainage, and enhances the streetscape. Natural elements such as plants should be an integral part of site development and should enhance the built environment while supporting water conservation goals.	***Consistent.*** A combination of artificial turf and drought-tolerant landscaping would be installed across the project site. The project includes use of municipal recycled water for all landscape irrigation, as well as low water use practices (e.g., drip irrigation and smart controllers that track weather patterns and adjust irrigation run times accordingly). Additionally, green infrastructure techniques would be used to treat and infiltrate stormwater runoff from the project site.
Policy CDP-4.11: Lighting	Encourage lighting for safety and security while preventing excessive light spillover and glare. Lighting should complement building and landscape design.	***Consistent.*** Refer to Chapter 4.3, Visual Resources, of this EIR. The proposed project would have a less than significant impact related to visual resources, including light and glare.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
San Rafael General Plan 2040 – Conservation and Climate Change Element		
Policy C-1.15: Landscaping with Appropriate Naturalized Plant Species	Encourage landscaping with native and compatible non-native plant species that are appropriate for the dry summer climate of the Bay Area, with an emphasis on species determined to be drought-resistant. Diversity of plant species is a priority for habitat resilience.	***Consistent.*** A combination of artificial turf and drought-tolerant landscaping would be installed across the project site. Native plants and a diversity of species would be planted.
Policy C-1.16: Urban Forestry	Protect, maintain, and expand San Rafael's tree canopy. Trees create shade, reduce energy costs, absorb runoff, support wildlife, create natural beauty, and absorb carbon, making them an essential and valued part of the city's landscape and strategy to address global climate change. Tree planting and preservation should be coordinated with programs to reduce fire hazards, reduce greenhouse gas emissions, expand solar opportunities, and ensure public safety, resulting in a community that is both green and fire-safe.	***Consistent.*** A total of approximately 348 of the existing trees on the project site would be removed, and a minimum of 558 new trees would be planted throughout the project site during Phase 1. During Phase 2, a total of approximately 124 of the existing trees on the project site would be removed and a minimum of 169 new trees would be planted throughout the project site. The number of trees to be planted would exceed the number of trees removed, which would contribute to an expansion of the city's tree canopy.
Policy C-1.17: Tree Management	The removal of healthy trees shall be discouraged, and their replacement may be required when trees are removed due to health, safety, or maintenance reasons. Site plans should indicate the location of existing trees and include measures to protect them wherever feasible.	***Consistent.*** A total of approximately 348 of the existing 679 trees on the project site would be removed (i.e., 331 trees would be retained) and a minimum of 558 new trees would be planted throughout the project site during Phase 1. During Phase 2, a total of approximately 124 of the existing trees on the project site would be removed and a minimum of 169 new trees would be planted throughout the project site. The number of trees to be planted would exceed the number of trees removed and trees to be retained would be protected during the construction phases through implementation of a tree management plan.
Program C-1.17B: Tree Management Plan	Require a tree management plan prior to approval of development with the potential to remove or substantially impact trees. The Plan should be prepared by a licensed arborist using published standards and practices for protecting and monitoring tree health during and after construction.	***Consistent.*** A tree management plan would be prepared by a licensed arborist prior to approval of the proposed development.
Program C-1.17C: Mitigation for Tree Removal	Continue to implement mitigation requirements for tree removal in new development. When necessary, this could include planting of trees in locations other than the project site, planting native trees in lieu of non-natives, or reducing the footprint of proposed development. Tree replacement should be based on a value that is equal to or greater than the carbon footprint and ecological benefits of the trees being removed. Ecological benefits include water conservation, absorption of runoff, reduction of air pollution, energy reduction from shade and cooling effects, soil retention, slope stabilization, and wildlife support.	***Consistent.*** A total of approximately 348 of the existing 679 trees on the project site would be removed (i.e., 331 trees would be retained) and a minimum of 558 new trees would be planted throughout the project site during Phase 1. During Phase 2, a total of approximately 124 of the existing trees on the project site would be removed and a minimum of 169 new trees would be planted throughout the project site. Although the proposed project would remove mature landscape trees on the site which currently provide shade and other ecological benefits, new trees would be planted on site and would exceed the number of trees removed by approximately 210 or more. Once these trees reach maturity in 5-10 years, the ecological benefits would exceed the current benefits as more trees would be located on the site compared to current conditions.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy C-1.19: Light Pollution	Reduce light pollution and other adverse effects associated with night lighting from streets and urban uses.	***Consistent.*** Refer to Chapter 4.3, Visual Resources, of this EIR. The proposed project would have a less than significant impact related to visual resources, including light and glare. Specifically, the proposed project would comply with the standards outlined in various sections of the Municipal Code. In accordance with General Plan Program CDP-4.11A: Lighting Plans, the project sponsor has prepared and submitted a Lighting Plan that will be reviewed as part of the design review process to ensure consistency with dark sky objectives and reduce negative impacts on nearby properties.
Policy C-2.2: Land Use Compatibility and Building Standards	Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.	***Consistent.*** The proposed project would include home HVAC measures for each residential unit, which would allow for windows to be closed at all times, if desired. The project would also comply with the currently-applicable California Building Code, which requires the installation of particulate matter air filters with a minimum MERV-13 rating. In addition, the proposed project would substantially increase the amount of landscaping on the project site and would include landscaped buffers between residential buildings and surrounding roadways.
Policy C-2.3: Improving Air Quality Through Land Use and Transportation Choices	Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, reduce vehicle idling, and support the shift to electric and cleaner-fuel vehicles.	***Consistent.*** As described in Section 4.9, Transportation, the proposed project would result in a reduction in both residential and retail VMT. Therefore, the proposed project would result in a reduction in the number and length of car trips compared to permitted site conditions. The proposed project would also include multi-use paths throughout the project site, which would increase access to nearby transit stops by making them easier to access for pedestrians and bicyclists. The proposed project would also support the shift to electric and cleaner-fuel vehicles, as it would meet or exceed the required number of EV-ready and EV-capable parking spaces as required by the BAAQMD for compliance with CALGreen Tier 2 Voluntary Standards (refer to Section 4.11, Greenhouse Gas Emissions).
Program C-2.3A: Air Pollution Reduction Measures	Implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. This should include Transportation Control Measures (TCM) and Transportation Demand Management (TDM) programs to reduce emissions associated with diesel and gasoline-powered vehicles.	***Consistent.*** As described in Section 4.10, Air Quality, the proposed project would not conflict with the control measures included in the Clean Air Plan. In particular, the proposed project would include multiple improvements and site related features that would result in a reduction in vehicle trips and associated emissions, including new multimodal pathways that would be integrated throughout the interior of the site; bike lanes and enhanced gateway features that would invite community members into the site; a locally inspired Cycle Center that is programmed for Marin County bicycle enthusiasts as well as the broader community; and contributions to access to and from the nearby Civic Center Sonoma-Marin Area Rail Transit (SMART) station from the new Northgate Town Square, which would serve as an amenity for the public. Additionally, the proposed project would achieve

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
		compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2 Voluntary Standards. Through the implementation of these project design features, the proposed project would be consistent with the BAAQMD Transportation Control Measures.
Policy C-2.4: Particulate Matter Pollution Reduction	Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.	***Consistent.*** As described in Section 4.10, Air Quality, implementation of Mitigation Measure AIR-1, which would require implementation of BAAQMD's Basic Construction Mitigation Measures, would reduce construction-related air quality impacts of particulate matter and fugitive dust. In addition, the operation of the proposed project would result in a reduction in particulate matter compared to existing conditions, as shown in Table 4.10.G.
Policy C-3.2: Reduce Pollution from Urban Runoff	Require Best Management Practices (BMPs) to reduce pollutants discharged to storm drains and waterways. Typical BMPs include reducing impervious surface coverage, requiring site plans that minimize grading and disturbance of creeks and natural drainage patterns, and using vegetation and bioswales to absorb and filter runoff.	***Consistent.*** Refer to Section 4.7, Hydrology and Water Quality, of this EIR. The proposed project would reduce impervious surface on the project site through the introduction of increased landscaping and reduced surface parking, and would include bioretention basins that would reduce and filter runoff.
Policy C-3.3: Low Impact Development	Encourage construction and design methods that retain stormwater on-site and reduce runoff to storm drains and creeks.	***Consistent.*** See above. The proposed project would reduce impervious surfaces on the project site and utilize bioretention basins to reduce runoff.
Policy C-3.8: Water Conservation	Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.	***Consistent.*** Refer to Section 4.14, Utilities and Service Systems, of this EIR. The proposed project would be required to comply with the CALGreen Code, which requires the implementation of water efficiency measures. The proposed project would also utilize recycled water for all landscape irrigation.
Policy C-3.9: Water-Efficient Landscaping	Encourage—and where appropriate require—the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.	***Consistent.*** A combination of artificial turf and drought-tolerant landscaping would be installed across the project site. The project includes use of municipal recycled water for all landscape irrigation as well as low water use practices (e.g., drip irrigation and smart controllers that track weather patterns and adjust irrigation run times accordingly).
Policy C-4.2: Energy Conservation	Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.	***Consistent.*** Energy-efficient LED lighting would be installed throughout the project, and high-efficiency mechanical and hot-water systems would be installed in residential buildings. Additionally, residential buildings would be entirely electric and would not use natural gas.
Policy C-4.2B: Green Building Standards	Implement State green building and energy efficiency standards for remodeling projects and new construction. Consider additional measures to incentivize green building practices, low carbon concrete, and sustainable design.	***Partially Consistent.*** As described in Section 4.11, Greenhouse Gas Emissions, the proposed project is expected to have a net-negative impact on operational GHG emissions by replacing existing land uses with less emissions-intensive buildings and proposed uses. The proposed project would incorporate numerous sustainability features, including water-efficient interior plumbing fixtures and appliances; dual plumbing to allow for use of recycled water; drought tolerant landscaping and low water use practices; green infrastructure techniques for stormwater runoff; energy-efficient lighting; solar panels and battery storage for residential buildings; and high-efficiency mechanical and hot-water systems. However, the proposed project

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
		would not be consistent with the BAAQMD's thresholds adopted for the purpose of reducing greenhouse gas emissions because the project would include natural gas use for commercial restaurant kitchens. These thresholds were adopted to further the State's climate action targets. Therefore, the proposed project would only partially achieve the goal of implementing the State's green building standards.
Policy C-4.5: Resource Efficiency in Site Development	Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.	***Partially Consistent.*** See Policy C-4.2B.
Policy C-5.2: Consider Climate Change Impacts	Ensure that decisions regarding future development, capital projects, and resource management are consistent with San Rafael's CCAP and other climate goals, including greenhouse gas reduction and adaptation.	***Partially Consistent.*** As described in Section 4.11, Greenhouse Gas Emissions, the proposed project would be consistent with the San Rafael CCAP, the 2022 Scoping Plan, and Plan Bay Area 2050. However, the proposed project would not be consistent with all of the BAAQMD's GHG project design thresholds.
San Rafael General Plan 2040 – Parks, Recreation, and Open Space Element		
Policy PROS-1.2: per Capita Acreage Standard	Maintain a citywide standard of 4.0 acres of improved park and recreation land per 1,000 residents.	***Consistent.*** Refer to Section 4.13, Public Services and Recreation, of this EIR. The proposed project would be consistent with the development assumed for the project site within the General Plan and Housing Element. In addition, the proposed project would include new public recreational space on the project site (e.g., the Town Square), and therefore would increase the amount of publicly-accessible recreational space within San Rafael. With implementation of the proposed project, a ratio of 4.09 acres of parkland per 1,000 residents would be maintained within the City's Sphere of Influence.
Policy PROS-1.11: Urban Parks and Plazas	Encourage the creation of small gathering places open to the public in Downtown San Rafael and other business districts, including plazas, green spaces, activated alleys, and similar features.	***Consistent.*** The proposed project would include public outdoor amenity spaces with outdoor dining and lounge seating and a Town Square that would contain a large flexible lawn space, a dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables.
Policy PROS-1.13: Recreational Facilities in Development Projects	Encourage, and where appropriate require, the construction of on-site recreational facilities in multi-family, mixed use, and office projects to supplement the facilities available in City parks.	***Consistent.*** The proposed project would include public outdoor amenity spaces with outdoor dining and lounge seating and a Town Square that would contain a large flexible lawn space, a dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables. Additionally, each residential building would include useable open space consisting of courtyards and roof decks.
San Rafael General Plan 2040 – Safety and Resilience Element		
Goal S-2: Resilience to Geologic Hazards	Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, mudslides, erosion, sedimentation, and settlement.	***Consistent.*** Refer to Section 4.6, Geology and Soils, of this EIR. With implementation of Mitigation Measures GEO-1 and GEO-2, potential geologic hazards would be reduced to a less than significant level.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy S-2.1: Seismic Safety of New Buildings	Design and construct all new buildings to resist stresses produced by earthquakes. The minimum level of seismic design shall be in accordance with the most recently adopted building code as required by State law.	***Consistent.*** Refer to Section 4.6, Geology and Soils, of this EIR. The proposed project would be required to be designed and constructed in accordance with the recommendations of the Geotechnical Investigation and the requirements of the California Building Code, San Rafael General Plan 2040, and San Rafael Municipal Code.
Program S-2.1B: Geotechnical Review	Continue to require soil and geologic hazard studies and peer review for proposed development as set forth in the City's Geotechnical Review Matrix. These studies should determine the extent of geotechnical hazards, optimum design for structures and the suitability and feasibility of proposed development for its location, the need for special structural requirements, and measures to mitigate any identified hazards. Periodically review and update the Geotechnical Review Matrix to ensure that it supports and implements the Local Hazard Mitigation Plan by identifying potentially hazardous areas. Consider removing the procedures from the General Plan and instead adopting them as part of the Zoning Ordinance or through a separate resolution.	***Consistent.*** Refer to Section 4.6, Geology and Soils. A Geotechnical Investigation was prepared for the proposed project. In addition, Mitigation Measure GEO-2 requires the preparation of a Design-Level Geotechnical Report prior to the issuance of grading or building permits.
Policy S-2.5: Erosion Control	Require appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures should incorporate best management practices (BMPs) and should be coordinated with requirements for on-site water retention, water quality improvements, and runoff control.	***Consistent.*** Refer to Sections 4.6, Geology and Soils, and 4.7, Hydrology and Water Quality, of this EIR. Preparation of an SWPPP would ensure that potential erosion impacts during the construction period would be reduced. During operation of the project, the project site would be covered with buildings, pavement surfaces, and landscaping, which would minimize the potential for post-development erosion.
Program S-2.5A: Erosion and Sediment Control Plans	Require Erosion and Sediment Control Plans (ESCPs) for projects meeting the criteria defined by the Marin County Stormwater Pollution Prevention Program, including those requiring grading permits and those with the potential for significant erosion and sediment discharges. Projects that disturb more than one acre of soil must prepare a Stormwater Pollution Prevention Plan, pursuant to State law.	***Consistent.*** See above. An SWPPP would be required for the proposed project, which would include erosion and sediment control measures.
Program S-2.5B: Grading During the Wet Season	Avoid grading during the wet season due to soil instability and sedimentation risks, unless the City Engineer determines such risks will not be present. Require that development projects implement erosion and/or sediment control measures and runoff discharge measures based on their potential to impact storm drains, drainageways, and creeks.	***Consistent.*** See above. An SWPPP would be required for the proposed project, which would include erosion and sediment control measures.
Policy S-3.8: Storm Drainage Improvements	Require new development to mitigate potential increases in runoff through a combination of measures, including improvement of local storm drainage facilities. Other measures, such as the use of porous pavement, bioswales, and "green infrastructure" should be encouraged.	***Consistent.*** Refer to Section 4.7, Hydrology and Water Quality, of this EIR. The proposed project would be required to implement a Stormwater Control Plan that describes how runoff would be routed to LID stormwater treatment facilities.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Program S-3.8A: Storm Drainage Improvements	Consistent with Countywide and regional stormwater management programs, require new development with the potential to impact storm drainage facilities to complete hydrologic studies that evaluate storm drainage capacity, identify improvements needed to handle a 100-year storm, and determine the funding needed to complete those improvements.	***Consistent.*** Refer to Section 4.7, Hydrology and Water Quality. Implementation of a Stormwater Control Plan would ensure that the project complies with stormwater control and treatment regulations.
Policy S-5.2: Hazardous Materials Storage, Use and Disposal	Enforce regulations regarding proper storage, labeling, use and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.	***Consistent.*** Refer to Section 4.8, Hazards and Hazardous Materials, of this EIR. Compliance with the regulations described in Section 4.8.1.6, including OSHA and Cal/OSHA regulations, the California Fire Code, the California Health and Safety Code Division 20, Chapter 6.5, CCR, DOT, RCRA, and other federal, State, regional, and local regulations, are mandatory and they would ensure that the proposed project would not create a significant hazard to the public or the environment associated with the routine transport, use, or disposal of hazardous materials by ensuring that these materials are properly handled during construction and operation of the proposed project.
Policy S-5.6: Hazardous Building Materials	Reduce the presence of hazardous building materials by implementing programs to mitigate lead, friable asbestos, and other hazardous materials where they exist today and by limiting the use of hazardous building materials in new construction. If such materials are disturbed during building renovation or demolition, they must be handled and disposed in a manner that protects human health and the environment.	***Consistent.*** Refer to Section 4.8, Hazards and Hazardous Materials. Mitigation Measure HAZ-1 requires the preparation of an HBMS prior to demolition. The HBMS would include abatement specifications for the stabilization and/or removal of the identified hazardous building materials in accordance with all applicable laws and regulations.
San Rafael General Plan 2040 – Noise Element		
Policy N-1.2: Maintaining Acceptable Noise Levels	Use the following performance standards to maintain an acceptable noise environment in San Rafael: a. New development shall not increase noise levels by more than 3 dB L_{dn} in a residential area, or by more than 5 dB L_{dn} in a non-residential area. b. New development shall not cause noise levels to increase above the "normally acceptable" levels shown in Table 9-2. c. For larger projects, the noise levels in (a) and (b) should include any noise that would be generated by additional traffic associated with the new development. d. Projects that exceed the thresholds above may be permitted if an acoustical study determines that there are mitigating circumstances (such as higher existing noise levels) and nearby uses will not be adversely affected.	***Partially Consistent.*** As discussed in Section 4.12, Noise, the proposed project would not increase noise levels by more than 3 dB L_{dn} in a residential area or by more than 5 dB L_{dn} in a nonresidential area, including from mobile noise sources. However, the proposed project would generate noise levels that would exceed the City's land use compatibility thresholds for future on-site sensitive receptors. Mitigation Measure NOI-2 is identified to reduce on-site noise levels to the extent feasible; however, because the effectiveness of this measure cannot be verified, this impact would be significant and unavoidable.
Program N-1.2A: Acoustical Study Requirements	Require acoustical studies for new single family residential projects within the projected 60 dB L_{dn} noise contour and for multi-family or mixed use projects within the projected 65 dB L_{dn} contour (see Figure 9-2). The studies should include projected noise from additional traffic, noise associated	***Partially Consistent.*** See Policy N-1.2.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	with the project itself, and cumulative noise resulting from other approved projects. Mitigation measures should be identified to ensure that noise levels remain at acceptable levels.	
Policy N-1.3: Reducing Noise through Planning and Design	Use a range of design, construction, site planning, and operational measures to reduce potential noise impacts.	***Partially Consistent.*** Mitigation Measure NOI-1 is required to ensure that temporary construction-period noise impacts are reduced to the extent feasible. Mitigation Measure NOI-2 is identified to reduce on-site noise levels to the extent feasible; however, because the effectiveness of this measure cannot be verified, this impact would be significant and unavoidable.
Policy N-1.5: Mixed Use	Mitigate the potential for noise-related conflicts in mixed use development combining residential and nonresidential uses.	***Partially Consistent.*** See Policy N-1.2.
Policy N-1.9: Maintaining Peace and Quiet	Minimize noise conflicts resulting from everyday activities such as construction, sirens, yard equipment, business operations, night-time sporting events, and domestic activities.	***Partially Consistent.*** See Policy N-1.2 and Policy N-1.3.
Policy N-1.11: Vibration	Ensure that the potential for vibration is addressed when transportation, construction, and nonresidential projects are proposed, and that measures are taken to mitigate potential impacts.	***Consistent.*** As discussed in Section 4.12, Noise construction period vibration levels would be below established thresholds and this impact would be less than significant. Specifically, all predicted vibration levels for both project phases would be lower than the occupant annoyance threshold of 72 VdB, and lower than the building damage risk threshold of 0.2 in/sec PPV. In addition, operation-period vibration impacts would not occur.
San Rafael General Plan 2040 – Mobility Element		
Policy M-2.5: Traffic Level of Service	Maintain traffic level of service (LOS) standards that ensure an efficient roadway network and provide a consistent basis for evaluating the transportation effects of proposed development projects on local roadways. These standards shall generally be based on the performance of signalized intersections during the AM and PM peak hours. Arterial LOS standards may be used in lieu of (or in addition to) intersection LOS standards in cases where intersection spacing and road design characteristics make arterial LOS a more reliable and effective tool for predicting future impacts. a. **Intersection Standards:** LOS "D" shall be the citywide standard for intersections, except as noted below: 1. Intersections within the Downtown Precise Plan boundary are subject to the provisions of Section (c) below. 2. Signalized intersections at Highway 101 and I-580 on-ramps and off-ramps are exempt because these locations are affected by regional traffic and are not significantly impacted by local measures. 3. LOS "E" shall be acceptable at the following intersections:	***Consistent.*** As described in Section 4.9, Transportation, with the addition of project traffic, all of the study intersections surrounding the project site would continue to operate at an acceptable LOS under Baseline plus Phase 1, Future plus Phase 1, and Future plus Phase 2 conditions.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	• Andersen and Bellam • Bellam and Francisco Blvd East (AM peak only) • Freitas at Civic Center/Redwood Highway • Merrydale at Las Gallinas Avenue (PM peak only) • Freitas Parkway and Northgate Drive (PM peak only) 4. LOS "F" shall be acceptable at the following intersections: • Andersen and Francisco Blvd West (AM peak only) • Bellam and Francisco Blvd East (PM peak only) • Merrydale at Civic Center Drive (AM peak only) b. **Arterial Standards:** LOS "D" shall be the citywide standard for arterials, except as noted below: 1. Arterials within the Downtown Precise Plan boundary are subject to the provisions of Section (c) below. 2. LOS "E" shall be acceptable on the following arterial segments: • Freitas Parkway from Las Gallinas to Del Presidio • Lucas Valley from Las Gallinas to 101 S/B ramps (PM peak only) • Los Ranchitos from North San Pedro to Lincoln • Francisco Blvd East from Bellam to Main (Richmond Bridge) (PM peak only) 3. LOS "F" shall be acceptable on the following segments: • Francisco Blvd East from Grand Avenue to Bellam • Lincoln from 101 SB/Hammondale to Mission • Del Presidio from Las Gallinas to Freitas c. **Downtown Standards.** Intersections and arterials within the boundaries of the Downtown San Rafael Precise Plan are not subject to LOS standards, recognizing their unique context, operation, and physical constraints, as well as their multi-modal character. Proactive measures shall be taken to address and manage downtown congestion, evaluate and reduce the impacts of new development on the transportation network, and ensure the long-term functionality of streets and intersections. Traffic shall be monitored and evaluated to identify the need for improvements to ensure that downtown streets adequately serve both local and regional traffic.	

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	d. **Additional Provisions for Roads Operating at LOS "E" or "F."** Where the adopted standard is LOS "E" or "F," measures should be taken to avoid further degradation of traffic conditions. Projects impacting roads operating at LOS "F" may still be subject to requirements to offset those impacts as a condition of approval. 1. LOS "E" shall be acceptable on the following arterial segments: • Freitas Parkway from Las Gallinas to Del Presidio • Lucas Valley from Las Gallinas to 101 S/B ramps (PM peak only) • Los Ranchitos from North San Pedro to Lincoln • Francisco Blvd East from Bellam to Main (Richmond Bridge) (PM peak only) 2. LOS "F" shall be acceptable on the following segments: • Francisco Blvd East from Grand Avenue to Bellam • Lincoln from 101 SB/Hammondale to Mission • Del Presidio from Las Gallinas to Freitas e. **Downtown Standards.** Intersections and arterials within the boundaries of the Downtown San Rafael Precise Plan are not subject to LOS standards, recognizing their unique context, operation, and physical constraints, as well as their multi-modal character. Proactive measures shall be taken to address and manage downtown congestion, evaluate and reduce the impacts of new development on the transportation network, and ensure the long-term functionality of streets and intersections. Traffic shall be monitored and evaluated to identify the need for improvements to ensure that downtown streets adequately serve both local and regional traffic. f. **Additional Provisions for Roads Operating at LOS "E" or "F."** Where the adopted standard is LOS "E" or "F," measures should be taken to avoid further degradation of traffic conditions. Projects impacting roads operating at LOS "F" may still be subject to requirements to offset those impacts as a condition of approval.	
Program M-2.5A: Traffic Circulation Studies	Traffic impact studies will be required for projects with the potential to increase congestion, create safety hazards, or otherwise impact local circulation conditions. Unless covered by the exceptions in Policy M-2.5, such studies should include projections of future LOS, an assessment of the contribution of the proposed project to increases in congestion, an	***Consistent.*** As described in Section 4.9, Transportation, a Transportation Impact Study, Signal Warrant Analysis, and Traffic Operations Study were prepared for the proposed project (see Appendices F, G, and H, respectively). The Traffic Operations Study includes projections of future LOS, and determined that the proposed project would not cause any of the study

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
	assessment of projected increases in congestion on greenhouse gas emissions, and an assessment of traffic impact fees related to the project. Measures to maintain adopted service levels may be required as a condition of approval. Projects that are exempt from LOS and/or VMT standards may still be required to perform limited scope traffic and circulation studies to evaluate impacts on traffic conditions or traffic control devices in the immediate area of the proposed project. For projects in Downtown San Rafael, local traffic assessments (LTAs) should evaluate the potential for additional delay or safety hazards at nearby intersections. LTAs should identify necessary road or operational improvements, ingress and egress requirements, and potential site plan changes that reduce delays, conflicts between travel modes, and potential safety hazards. Guidelines for traffic impact studies and Local Traffic Assessments have been developed concurrently with General Plan 2040. The guidelines should be periodically updated to ensure they are achieving their intended purpose and to reflect new data, forecasts, and methodologies.	intersections to operate at an unacceptable LOS. The proposed project would also result in a reduction in both residential and retail VMT.
Goal M-3: Cleaner Transportation	Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.	***Consistent.*** As described in Section 4.9, Transportation, the proposed project would result in a reduction in automobile trips to and from the project site relative to the existing permitted uses. In addition, the proposed project would result in a reduction in residential and retail VMT, therefore reducing both trips and overall trip length. These reductions would reduce GHG emissions, traffic noise, air quality and water pollution (by reducing the amount of pollutants emitted compared to permitted site conditions).
Policy M-3.1: VMT Reduction	Achieve State-mandated reductions in Vehicle Miles Traveled by requiring development and transportation projects to meet specific VMT metrics and implement VMT reduction measures.	***Consistent.*** As described in Section 4.9, Transportation, the proposed project would result in a reduction in both residential and retail VMT on the project site.
Policy M-3.2: Using VMT in Environmental Review	Require an analysis of projected Vehicle Miles Traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/policy plans as well as proposed development projects.	***Consistent.*** As described in Section 4.9, Transportation, the proposed project would result in a reduction in both residential and retail VMT on the project site.
Policy M-3.3: Transportation Demand Management	Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, flexible work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.	***Consistent.*** As described in Section 4.9, Transportation, the proposed project would result in a reduction in both residential and retail VMT on the project site. In addition, the proposed project would include pedestrian and bicycle improvements on the site that would increase access to alternative transit for users of the project site.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy M-3.6: Low-Carbon Transportation	Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.	***Consistent.*** The most recently adopted version of CALGreen Tier 2 Voluntary Standards require that a project with 201 or more parking spaces provide 45 percent of total parking spaces as EV-capable spaces, and 33 percent of the EV-capable spaces (meaning 15 percent of total parking spaces) as EV charging stations. As described in Section 4.11, Greenhouse Gas Emissions, for the residential development, the proposed project would provide 763 EV-ready residential parking spaces, which exceeds the CALGreen Tier 2 requirement of 359 spaces, and 134 chargers, which achieves the Tier 2 requirement. Regarding the non-residential (commercial) requirement, in Phase 1, the proposed project would include a total of 465 spaces, and would provide 210 spaces as EV capable, with 70 of those spaces as active charging stations, meeting the Tier 2 Voluntary Standards requirements. For Phase 2, the proposed project would include a total of 171 commercial parking spaces, and would provide an additional 77 spaces as EV capable, with 26 of those EV charging stations in line with the CalGreen Tier 2 Voluntary Standards.
Policy M-5.1: Traffic Calming	Protect residential areas from the effects of speeding traffic or traffic from outside the neighborhood through appropriate traffic calming solutions such as speed humps, bulb-outs, speed limits, stop signs, and chicanes. Traffic calming measures shall not conflict with emergency response capabilities.	**Consistent.** The proposed project would include a network of internal roadways that would serve the residential and commercial uses on the project site. These roadways would be appropriately designed to reduce the effects of speeding or traffic from outside the neighborhood because they would include speed humps, bulb-outs, and stop signs. In addition, the proposed project would include a network of multi-use pathways throughout the site that would be physically separated from roadways.
Policy M-6.1: Encourage Walking and Cycling	Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips, such as trips to school, parks, transit stops, and neighborhood services. Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, public stairways, paths, and sidewalks should be part of San Rafael's identity.	***Consistent.*** The proposed project would include a network of multi-use pathways throughout the project site that would provide safe access for pedestrians and bicyclists because they would be physically separated from roadways.
Policy M-6.3: Connectivity	Develop pedestrian and bicycle networks that connect residents and visitors to major activity and shopping centers, existing and planned transit, schools, and other neighborhoods. Work to close gaps between existing facilities. Funding and prioritization for projects should consider relative costs and benefits, including such factors as safety, number of potential users, and impacts on parking.	***Consistent.*** The proposed project would include a network of multi-use pathways throughout the project site. These pathways would connect residents from the project site and surrounding residential areas to commercial uses on the project site as well as to commercial uses adjacent to the project site.
Policy M-6.7: Universal Design	Design and construct bicycle and pedestrian facilities to serve people of all ages and abilities, including children, seniors, families, and people with limited mobility.	***Consistent.*** The proposed project would include a network of multi-use pathways throughout the project site that would provide safe access for pedestrians and bicyclists because they would be physically separated from roadways.
Policy M-7.8: Parking for Alternative Modes of Transportation	Designate parking spaces to incentivize and encourage carpooling, electric vehicles, and other more sustainable modes of travel.	***Consistent.*** See Policy M-3.6.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Program M-7.8A: Charging Stations	Install additional chargers in public parking lots and garages for electric vehicles and e-bikes. Consider expanding electric charging requirements for private parking lots and structures.	***Consistent.*** See Policy M-3.6.
San Rafael General Plan 2040 – Community Services and Infrastructure Element		
Policy CSI-3.2: Mitigating Development Impacts	Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public health and safety, fire prevention, and emergency access and response times meet current industry standards.	***Consistent.*** Refer to Section 4.13, Public Services and Recreation. The proposed project would not result in any significant impacts related to police or fire service.
Program CSI-3.2B: Emergency Response Time	Use the development review process to identify appropriate measures to reduce fire hazards and ensure emergency response capacity that is consistent with National Fire Protection Association standards.	***Consistent.*** Refer to Section 4.13, Public Services and Recreation. The proposed project would not result in any significant impacts related to fire service.
Policy CSI-4.2: Adequacy of City Infrastructure and Services	As part of the development review process, require applicants to demonstrate that their projects can be adequately served by the City's infrastructure. All new infrastructure shall be planned and designed to meet the engineering and safety standards of the City as well as various local service and utility providers	***Consistent.*** Refer to Section 4.14, Utilities and Service Systems. The proposed project would be adequately served by the City's utilities, and new connections on the project site would be required to be reviewed and approved by the City and the appropriate service provider.
Policy CSI-4.8: Potable Water Supply and Delivery	Work with Marin Municipal Water District (MMWD) to meet projected water demand, encourage water conservation, and ensure the reliability and safety of the water supply and distribution system.	***Consistent.*** Refer to Section 4.14, Utilities and Service Systems. MMWD would have adequate water supplies to serve the proposed project.
Policy CSI-4.9: Wastewater Facilities	Ensure that wastewater collection, treatment and disposal infrastructure is regularly maintained and meets projected needs. Improvements should be programmed to meet state and federal standards, respond to sea level rise and seismic hazards, repair and replace aging or leaking pipes, and protect environmental quality.	***Consistent.*** Refer to Section 4.14, Utilities and Service Systems. The proposed project would not result in an exceedance of the capacity of wastewater infrastructure.
Policy CSI-4.17: Reducing Landfilled Waste Disposal	Reduce landfilled waste disposal and related greenhouse gas emissions by reducing material consumption; requiring curbside collection and composting of organic materials; increasing recycling, reuse, and resource recovery; and encouraging the use of recyclable goods and materials.	***Consistent.*** Refer to Section 4.14, Utilities and Service Systems. The proposed project would be required to reduce landfill waste by recycling construction debris and by providing the appropriate facilities for users on the project site to recycle or compost organic materials.
San Rafael 2023-2031 Housing Element		
Policy H-3.5: Housing and Greenhouse Gas Emissions.	Design and locate new housing in a way that supports the city's greenhouse gas reduction goals. This includes building new housing near transit and in locations where it is easier to walk to shopping, restaurants, services, work, school, and other destinations. It also includes reducing the use of non-renewable fossil fuels through electrification, decreased natural gas use, energy efficiency, and tree planting.	***Consistent.*** The proposed project is a mixed use development that includes a variety of housing types and commercial uses that would provide dining and shopping opportunities. The site is located within walking distance to the existing Marin Civic Center SMART station. All residential construction would be all-electric in compliance with the City and State's goals for the reduction of GHG emissions and, overall, the proposed project would reduce natural gas use compared to existing conditions. The project would also comply with and in some cases exceed the requirements of the CalGreen Code. Specifically, EV-capable parking spaces and EV charging spaces that meet the CALGreen Tier 2 Voluntary Standards would be provided for all residential uses. New trees would be planted on site that exceed a ratio of 1:1 for trees removed.

Table 4.1.A: Relationship of Proposed Project to Relevant Plans and Policies

Goal/Policy/ Program No.	Policy Summary	Project's Relationship to Policy
Policy H-3.6: Sustainable Design.	Encourage the use of building materials, construction methods, and designs that reduce environmental impacts and the consumption of non-renewable resources.	***Consistent.*** As discussed in Section 4.15, Energy, the proposed project would result in an increased demand for electricity during operation and a temporary demand for petroleum during construction; however, compared to existing conditions, the proposed project would result in decreased demand for natural gas and petroleum during operation under both the Phase 1 and full project buildout under Phase 2. In addition, the proposed project would support the City's goals, including the City's CCAP 2030, because the residential development would be 100 percent electric. The proposed project would also be consistent with the strategies of the City's CCAP 2030 by including solar power that is generated on site, EV charging stations, bicycle amenities, site connectivity, and a connection to the SMART Marin Civic Center station. Additionally, the proposed project would meet or exceed CalGreen Code Tier 2 Voluntary Standards for EV charging. As such, the proposed project would meet and exceed the applicable requirements for energy efficiency.
Policy H-4.15: Housing and Infrastructure.	Coordinate with water, sanitary sewer, and dry utility service providers to ensure that infrastructure is available to support anticipated housing development. The cost of infrastructure maintenance and improvement should be equitably shared among property owners rather than assigned entirely to new development.	***Consistent.*** As discussed in Section 4.14 Utilities and Service Systems, adequate infrastructure is or would be in place to support the proposed project, including the residential uses prior to occupancy. The existing sewer line does not have sufficient capacity to support Phase 1 development; therefore, Mitigation Measure UTL-1 is required to ensure that adequate infrastructure is installed.

Source: San Rafael General Plan 2040, July 2021 and Housing Element, May 2023. Compiled by LSA (2023).

ADU = accessory dwelling unit
BAAQMD = Bay Area Air Quality Management District
BMP = Best Management Practice
Cal/OSHA = California Occupational Safety and Health Administration
CALGreen = California Green Building Standards Code
CARB = California Resources Board
CCAP = Community Climate Action Plan
CCR = California Code of Regulations
City = City of San Rafael
dB = decibels
DOT = Department of Transportation
EIR = Environmental Impact Report
ESCP = Erosion and Sediment Control Plan
EV = electric vehicle
FAR = floor area ratio
HBMS = Hazardous Building Materials Survey
HVAC = heating, ventilation, and air conditioning
L_{dn} = day-night average sound level
LED = light-emitting diode
LID = low impact development
LOS = level of service
LTA = local traffic assessments
MMWD = Marin Municipal Water District
OSHA = Occupational Safety and Health Administration
PD District = Planned Development District
RCRA = Resource Conservation and Recovery Act
SMART = Sonoma-Marin Area Rail Transit
SWPPP = Stormwater Pollution Prevention Plan
TCM = Transportation Control Measures
TDM = Transportation Demand Management
TDR = Transfer of Development Rights
VMT = vehicle miles traveled

4.2 POPULATION AND HOUSING

This section provides background information on existing and projected population, employment, and housing conditions in San Rafael and estimates changes to the City's demographics and projected population growth that could result from the proposed project. The analysis is based on population, employment, and housing data published by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC),[1] the United States Census Bureau, the San Rafael General Plan 2040 (General Plan), and the 2023-2031 Housing Element of the City's General Plan.[2]

4.2.1 Setting

The following setting information provides a basic foundation of existing conditions with respect to population, housing, and employment conditions within San Rafael, as well as for the region. The information presented in this section is based on data, research, and growth projections drawn mainly from United States Census data, ABAG's Projections 2040,[3] the General Plan, the 2023-2031 Housing Element, and California Department of Finance data.

4.2.1.1 Population

The City of San Rafael is located in Marin County in the northwestern region of the San Francisco Bay Area (Bay Area). San Rafael is bounded by Novato to the north, the Towns of Fairfax, San Anselmo, and Ross to the west, Larkspur to the south, and the San Pablo and San Francisco Bays to the east. According to the United States Census Bureau, San Rafael encompasses approximately 16.47 square miles.[4] In 2020, when the United States Census was conducted, the population in the Bay Area was 7,765,640, Marin County was 262,321, and San Rafael was 59,800.[5] Table 4.2.A provides a summary of the population trends and projections for the Bay Area, Marin County, and San Rafael from 2023 (the current year) to 2040. The 2023 projections show that the population in the area has declined slightly since the census was completed; nevertheless, future long-range regional population projections through 2040 remain valid as population trends may fluctuate over time according to market conditions and other factors (i.e., availability of housing, the COVID 19 pandemic). According to the State of California Department of Finance, the population of the Bay Area was 7,548,792 in 2023, and ABAG and MTC's Plan Bay Area 2050 projections estimates that the region's population

1 Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2018. *Plan Bay Area Projections 2040.* Website: http://projections.planbayarea.org/ (accessed January 17, 2022).

2 City of San Rafael. 2023. *City of San Rafael 2023-2031 Housing Element*. June 7.

3 Plan Bay Area 2050 was adopted October 21, 2021 but does not include detailed population projections for individual counties and cities within the Bay Area; therefore, this document utilizes projections from Plan Bay Area 2040.

4 United States Census Bureau. n.d. *QuickFacts*, *San Rafael city, California*. Website: https://www.census.gov/quickfacts/sanrafaelcitycalifornia (accessed January 17, 2022).

5 Ibid.

Table 4.2.A: Population and Household Trends and Projections: 2023 to 2040

Area	2023			2025			2040		
	Population	Household	Average Household Size	Population	Household	Average Household Size	Population	Household	Average Household Size
San Francisco Bay Area (millions)	7.55	3.02	2.49	8.23[1]	3.09[1]	2.66	9.49[1]	3.84[1]	2.47
Marin County	252,959	112,183	2.25	277,580[2]	123,991[2]	2.23	320,569[e]	144,874[e]	2.21
San Rafael	59,681	24,699	2.41	65,056[2]	25,271[2]	2.57	68,710	28,160	2.43

Source 1: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023 (California Department of Finance n.d.).
Source 2: *Plan Bay Area 2050, A Vision for the Future* (ABAG and MTC 2021).
Source 3: *San Rafael General Plan 2040* (City of San Rafael 2021a).

1 Plan Bay Area 2050 assumes a growth rate of 1.45 percent per year.

2 Projections for population and households at the County and City level are not available for 2025. These estimates are proportional to the County and City's share of population and households compared to 2023 and 2040.

3 Plan Bay Area 2050 does not include population projections for the year 2040 at the County level. This estimate is proportional to average population per household in 2023 for the County (252,959/112,183 = 2.25 persons per households).

ABAG = Association of Bay Area Governments
MTC = Metropolitan Transportation Commission
n.d. = no date

will grow to approximately 9.49 million by 2040. Marin County's total population in 2023 was 252,959, with anticipated increases to 271,024 by 2025 and 320,569 by 2040.[6]

Of the 11 incorporated cities and towns within Marin County, San Rafael has the largest population as of 2023, with a total of 59,681 residents.[7] The San Rafael General Plan 2040 predicts that San Rafael's total population will increase to approximately 68,710 by 2040 (or by 9,029 residents compared to 2023 conditions or 8,910 residents compared to 2020 conditions when the General Plan was prepared, equating to a difference of 119 fewer residents during the 3-year period).[8] The data in Table 4.2.A indicate that the rate of population growth from 2023 to 2040 in San Rafael (15 percent) would be higher than the anticipated population growth of Marin County (8 percent), and less than the Bay Area as a whole (24 percent).

Based on the population and household estimates shown in Table 4.2.A, the Bay Area had an average household size (total population divided by number of households) of 2.49 persons in 2023, and is estimated to have average household sizes of 2.66 and 2.47 in 2025 and 2040, respectively. In 2023, Marin County had an average household size of 2.25, and San Rafael's average household size

6 California Department of Finance. 2023. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023.* Website: https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/ (accessed August 2023).

7 City of San Rafael. 2021a. San Rafael General Plan 2040. August 2.

8 City of San Rafael. 2021b. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR.* January 7.

was 2.41.[9] As noted in Table 4.2.A, population and household projections are not available at the city and county level for 2025; therefore, estimates were made proportionate to the 2040 totals. These estimates indicate that average household size in Marin County would be approximately 2.23 in 2025 and 2.57 in San Rafael. In 2040, the average household size in Marin County is estimated to be approximately 2.21, and the average household size in San Rafael is estimated to be 2.43.

4.2.1.2 Housing

The following section discusses existing housing conditions within San Rafael and focuses on the city's housing stock, housing values/rental costs, rental affordability, overcrowding, and the city's Regional Housing Needs share. Table 4.2.B shows the estimated number of total housing units in San Rafael, Marin County, and the Bay Area in 2023, as well as occupancy status and housing type. As shown in Table 4.2.B, according to the California Department of Finance, the estimated number of housing units in San Rafael as of January 1, 2023 was 24,699, with a vacancy of 1,140 units (a vacancy rate of 4.7 percent). The estimated number of housing units in Marin County and the Bay Area was 112,183 and 3,021,536, respectively.[10]

Table 4.2.B: San Rafael and Marin County Housing Characteristics, 2023 Estimates

Housing Characteristic – 2023 Estimates	San Rafael	Marin County	Bay Area
Total Housing Units	**24,699**	**112,183**	**3,021,536**
Occupancy Status			
Vacant Units	1,140	7,588	176,623
Occupied Units	23,559	104,595	2,844,913
Housing Type			
Single-Family Units (Detached and Attached)	13,926	79,958	1,845,125
Multiple-Family Units	10,380	30,334	1,118,831
Mobile Homes/Other	393	1,891	57,580

Source: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023 (California Department of Finance n.d.).

According to ABAG and MTC, the number of households in Marin County is projected to grow to approximately 144,874 units by 2040, which is an increase of approximately 28 percent. According to forecasts from the San Rafael General Plan 2040, the number of households in San Rafael is projected

9 It is acknowledged that the average household size can fluctuate over time and from year to year, as population trends and housing stock also fluctuates. For example, according to the 2023-2031 Housing Element, the average household size in San Rafael grew from 2.44 in 2020 to a high of 2.55 in 2023. The analysis in this Environmental Impact Report (EIR) considers the average household size in San Rafael to be 2.49 persons per household, which is consistent with the household size evaluated in the City of Rafael's General Plan and the General Plan EIR, which include the growth assumptions for the planning area, including the project site, through the year 2040. This number also conservatively equates to the current regional Bay Area household size of 2.49.

10 California Department of Finance. n.d. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023.* Website: https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/ (accessed August 2023).

to grow to approximately 28,160 units by 2040, which is an increase of approximately 17 percent. Overall, the household growth rate in San Rafael is expected to be similar to the household growth rate for the Bay Area, which is 19 percent.

Of the 24,699 total housing units in San Rafael, approximately 56 percent of the housing stock consists of housing units within single-family detached and attached[11] structures, and 42 percent consists of multi-family units.[12,13] According to the United States Census, approximately 50 percent of the City's occupied housing units were owner-occupied between 2017 and 2021, the years for which the most recent data are available.[14]

Housing Value/Rental Costs. Housing prices in the Bay Area are among the highest in the country, and Marin County includes some of the most expensive residential communities in the Bay Area. According to 2019 United States Census data, Marin County was the fifth wealthiest county in the United States.[15] The median value of owner-occupied housing units in San Rafael was $923,100 between 2015 and 2019, which represents a 14 percent increase from the 2006–2010 median value of $811,000, and a 93 percent increase from the 2000 median value of $477,100.[16,17] According to a variety of online real estate marketplaces, the current typical home value in San Rafael, as of January 2022, is between $1 million and $1.3 million. The need for affordable housing in San Rafael has been highlighted as a top issue in the current and previous General Plans since 1974.[18]

Rental Affordability. The cost of housing is generally the greatest expense for households. Generally accepted affordability standards measure housing cost in relation to gross household income. The measure of affordability is based on the 30 percent of income standard used in federal housing policy subsidy programs. For example, those households spending in excess of about 30 percent of their income on housing are generally "cost-burdened." According to the San Rafael General Plan 2040, the median rental price for a two-bedroom, two-bath apartment was $3,144 in 2019, a 65 percent increase from the 2010 median cost of $1,904. According to United States Census data from 2014–2018, 5,264 renter-occupied units (or 47.5 percent of renters in San Rafael) paid more than 35 percent of their income on rent.[19] Table 4.2.C shows fair market rental rates per unit size for 2022.

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11 Single-family attached structures refer to side-by-side units such as townhomes.
12 Ibid.
13 A multi-family unit refers to two or more units included in a single building (e.g., apartments).
14 United States Census Bureau. n.d. *QuickFacts*, *San Rafael city, California*. Website: https://www.census.gov/quickfacts/sanrafaelcitycalifornia (accessed January 17, 2022).
15 City of San Rafael. 2021a. San Rafael General Plan 2040. August 2.
16 United States Census Bureau. n.d. *QuickFacts*, *San Rafael city, California*. Website: https://www.census.gov/quickfacts/sanrafaelcitycalifornia (accessed January 17, 2022).
17 Bay Area Census. n.d. *City of San Rafael, Marin County*. Website: http://www.bayareacensus.ca.gov/cities/SanRafael.htm (accessed January 17, 2022).
18 City of San Rafael. 2015. *City of San Rafael 2015-2023 Housing Element.*
19 City of San Rafael. 2021a. San Rafael General Plan 2040. August 2.

Table 4.2.C: Fair Market Rents – Marin County, 2022

No. of Bedrooms	Fair Market Monthly Rent
0	$2,115
1	$2,631
2	$3,198
3	$4,111
4	$4,473

Source: 2022 Fair Market Rent Documentation System (United States Department of Housing and Urban Development n.d.).

Overcrowding. Information regarding overcrowding conditions can provide another measure of the relative affordability of housing in San Rafael. Typically, a housing unit is considered overcrowded if there is more than 1.0 person per room. According to United States Census data from 2021, 2,335 housing units (or 9.47 percent of households in San Rafael) met the definition of overcrowded.[20]

4.2.1.3 Employment

The employment profile for an area provides an indication of the composition of an area's economy and the present and future demand for employees. San Rafael is the county seat of Marin County and serves as an important employment and economic center, accounting for about 33 percent of Marin County's jobs. There is primarily a concentration of health care and social assistance; retail; professional, scientific, and technical services; construction; and accommodation and food services.[21] As described in Chapter 3.0, Project Description, a total of 2,190 workers would be employed on the project site at full occupancy under current leasing agreements.

Approximately 66 percent of San Rafael residents over the age of 16 were estimated to be in the workforce as of 2019, slightly higher than the Marin County rate (64 percent) and State rate (63 percent). As of April 2021, Marin County had an unemployment rate of 4.6 percent.[22] As of 2021, the average median household income within San Rafael is $104,521, and 9.2 percent of the population is below the poverty line.[23] Table 4.2.D presents ABAG and MTC's projections for total jobs in San Rafael compared to Marin County and the Bay Area.

As shown in Table 4.2.D, ABAG and MTC projections from 2020 to 2040 show a steady increase in employment in the Bay Area (23.7 percent) and San Rafael (12 percent), and a slower increase in employment in Marin County (3.9 percent).

20 City of San Rafael. 2021a. San Rafael General Plan 2040. August 2.
21 Ibid.
22 Ibid.
23 United States Census Bureau. n.d. *QuickFacts*, *San Rafael city, California*. Website: https://www.census.gov/quickfacts/sanrafaelcitycalifornia (accessed January 17, 2022).

Table 4.2.D: Employment Trends in San Rafael, Marin County, and the Bay Area, 2020-2040 (Total Number of Jobs)

Jurisdiction	2020	2040	Growth (2020-2040)
San Rafael	43,430	48,650	4,050 (12 percent)
Marin County	129,900	134,960	5,060 (3.9 percent)
San Francisco Bay Area	4,080,000	5,050,000	970,000 (23.7 percent)

Source 1: San Rafael General Plan 2040 (City of San Rafael 2021a).
Source 2: *Plan Bay Area 2050, A Vision for the Future* (ABAG and MTC 2021).
ABAG = Association of Bay Area Governments
MTC = Metropolitan Transportation Commission

4.2.1.4 Regulatory Framework

The following section provides brief discussions of the applicable State, regional, and local regulatory framework related to population and housing.

State Regulations. State regulations applicable to the proposed project include California Housing Element Law and recently adopted legislation, as described below.

California Housing Element Law. The Regional Housing Needs Allocation (RHNA) is a process established under the State Housing Element law that requires cities in California to plan for the future development of new housing units to meet their share of regional housing needs. Housing needs for each region in the State are determined by the State Department of Housing and Community Development (HCD) and submitted to Councils of Government for local jurisdictions. ABAG is ultimately responsible for determining the share of regional housing needs to be met by each city in the Bay Area. State housing law has established three housing affordability categories. The categories are based on the region's median income, taking into account households ranging in size from one to six people. These three affordability categories are used by ABAG in allocating regional housing needs:

- **Very-Low:** 0 to 50 percent of the area's median income
- **Low:** 51 to 80 percent of the area's median income
- **Moderate:** 81 to 120 percent of the area's median income

The current RHNA identifies allocated housing units for the 2023 to 2031 period.[24] As shown in Table 4.2.E, ABAG identified 3,220 units (defined by income category) as the City's fair share of the regional housing need for the 2023 to 2031 period.

[24] Association of Bay Area Governments (ABAG). 2022. *Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031.* November.

Table 4.2.E: ABAG Regional Housing Need Allocation for 2023–2031

Income Level	San Rafael Need	Marin County Need	Regional Need
Very-Low	857	4,171	114,442
Low	492	2,400	65,892
Moderate	521	2,182	72,712
Subtotal of Affordable Units	**1,870**	**8,753**	**253,046**
Above Moderate	1,350	5,652	188,130
Total	**3,220**	**14,405**	**441,176**

Source: Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023–2031 (ABAG 2022).
ABAG = Association of Bay Area Governments

Sustainable Communities Strategy and Senate Bill (SB) 375. SB 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) for the Bay Area. Plan Bay Area 2050, the SCS for the region, was jointly approved in October 2021 by ABAG and MTC. Plan Bay Area 2050 is the strategic update to the original Plan Bay Area, approved in 2013, which represented a transportation and land use/housing strategy for how the Bay Area will address its transportation mobility and accessibility needs, land development, and greenhouse gas (GHG) emissions reduction requirements through 2050. Plan Bay Area 2050 builds on earlier work to develop an efficient transportation network, provide more housing choices, and grow in a financially and environmentally responsible way. SB 375 requires that the RHNA be consistent with the SCS and establishes an 8-year cycle. The 2023-2031 RHNA has been incorporated into Plan Bay Area 2050.

Housing Accountability Act, Permit Streamlining Act, and Senate Bill (SB) 330. SB 330, adopted in 2019, made numerous changes to both the Housing Accountability Act (HAA) and Permit Streamlining Act (PSA), and established the Housing Crisis Act (HCA). SB 330 established a two-step process by which project sponsors can "lock in" applicable fees and development regulations by submitting a Preliminary Application.[25] The HAA was amended to prohibit more than five hearings for projects that comply with the general plan and zoning code objective standards in effect when full applications are deemed complete. SB 330 also shortens the time frame for approval of housing projects under the PSA, requiring local agencies to approve a project within 90 days of certification of an Environmental Impact Report (EIR). However, a local agency can disapprove a project that is inconsistent with objective development standards or that would have a specific adverse effect on public health and safety if there are no feasible mitigation measures to reduce the impact. Finally, the HCA restricts local agencies' ability to adopt housing moratoria and from changing a land use designation to remove housing as a permitted use or to reduce residential density unless corresponding zoning amendments are made elsewhere to compensate for the reduced housing units.

[25] SB 1030, adopted in 2020, now allows project sponsors to lock in fees without a Preliminary Application.

Regional Regulations. ABAG and MTC are the regional planning and transportation agencies that consider regional population growth in the Bay Area. The applicable regulatory framework is described below.

Plan Bay Area 2050. As discussed above, Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan for the San Francisco Bay Area. As required by SB 375, all metropolitan regions in California must complete an SCS as part of an RTP. This strategy integrates transportation, land use, and housing to meet GHG reduction targets set by the California Air Resources Board (CARB). The plan meets those requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The plan neither funds specific transportation projects nor changes local land use policies.

In the San Francisco Bay Area, the MTC and ABAG adopted Plan Bay Area 2050 in October 2021. To meet the GHG reduction targets, the plan identifies four growth geographies where future growth in housing and jobs should be focused: Priority Development Areas (PDAs), Priority Production Areas (PPAs), Transit-Rich Areas (TRAs), and High-Resource Areas (HRAs). The agencies estimate more than 80 percent of housing growth would occur within TRAs and nearly 30 percent would be within HRAs, and more than 60 percent of job growth would be within walking distance of high-quality transit between 2015 and 2050.[26] The project site is located within the Northgate PDA, which indicates that it is an area generally near job centers or frequent transit that has been identified by the City of San Rafael for housing and job growth.

Jobs-Housing Connection Strategy. The Jobs Housing Connection Strategy was adopted by ABAG and MTC as part of Plan Bay Area in July 2013.[27] The Jobs Housing Connection Strategy reflects the preferred land use pattern, which was selected from a series of land use alternatives and based on input from the public, cities and counties, and transportation agencies. The preferred scenario aims to concentrate growth near transit-served employment centers in the inner Bay Area. For the SCS, the methodology used for assigning household growth to local jurisdictions incorporates multiple factors, including housing development capacity, base housing unit growth, vehicle miles traveled/transit service adjustment, and additional growth factors.

Local Regulations. The project would be required to comply with local regulations including the 2040 General Plan, the 2023-2031 Housing Element (Housing Element), and the Inclusionary Housing Requirements in the Zoning Ordinance.

San Rafael General Plan 2040. The General Plan contains the following goals, policies, and actions related to population and housing:

[26] Growth projections do not sum to 100 percent because PDAs, TRAs, and HRAs are not mutually exclusive.
[27] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2012. *Jobs-Housing Connection Strategy.* May.

Goal LU-1: Well-Managed Growth and Change: grow and change in a way that serves community needs, protects the environment, improves fiscal stability, and enhances the quality of life.

> **Policy LU-1.3:** Land Use and Climate Change**:** focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.
>
> **Policy LU-1.8:** Density of Residential Development: use the density ranges in the Land Use Element to determine the number of housing units allowed on properties within the Planning area.

Goal LU-2: A Complete Community: San Rafael is a complete community, with balanced and diverse land uses.

> **Policy LU-2.2:** Mixed Use Development: encourage mixed-use development (combining housing and commercial uses) in Downtown San Rafael and on commercially designated properties elsewhere in the city. Mixed-use development should enhance its surroundings and be compatible with adjacent properties.
>
> **Policy LU-2.12:** Innovative Housing Types: encourage non-traditional and innovative forms of housing that respond to local housing needs, changing demographics, high housing costs, remote work trends, and sustainability goals.

Goal LU-3: Distinctive Neighborhoods: create and sustain neighborhoods of integrity and distinctive character.

> **Policy LU-3.3:** Housing Mix: encourage a diverse mix of housing choices in terms of affordability, unit type, and size, including opportunities for both renters and owners.
>
> **Policy LU-3.5:** Neighborhood Identity: enhance neighborhood identity and sense of community by retaining and creating gateways, landscape features, and other improvements that help define neighborhood entries and focal points
>
> **Policy LU-3.6:** Transitions Between Uses: outside of mixed use developments, maintain buffers between residential uses and adjacent commercial and institutional uses. Parking lots, loading areas, trash facilities, and similar activities associated with non-residential uses should be appropriately screened.

Goal EV-1: A Healthy and Resilient Economy: maintain a healthy and resilient local economy that attracts investment, creates jobs, and provides services for residents and visitors.

> **Policy EV-1.8:** Workforce Housing: aggressively encourage creation and retention of housing that is affordable to low and moderate-income workers, especially those providing necessary local services, such as public safety, health care, elder care, and education.

Goal EDI-3: Housing Stability: improve housing stability for all San Rafael residents, particularly those with low or very low incomes.

Policy EDI-3.2: Affordable Housing Development: encourage the development of affordable rental housing to meet the needs of all San Rafael households.

Policy EDI-3.4: Healthy Homes: promote and ensure safe and sanitary housing and healthy living conditions for all residents, particularly lower income renters.

City of San Rafael 2023-2031 Housing Element. The Housing Element contains the following goals, policies, and actions related to population and housing:

Goal H-4: Housing Choice. Meet housing needs through a range of housing choices and affordability levels throughout the city.

Policy H-4.2: Preventing Displacement. Prevent the displacement of lower income residents due to expiring housing subsidies, rising costs, evictions without cause, conversion of housing units to non-residential use, and other factors that make it difficult for people to stay in San Rafael. Ensure that any housing units occupied by lower income renters are replaced in kind in the event they are demolished and redeveloped, including first right of return to renters who may be displaced.

Policy H-4.14: Commercial to Residential Conversion. Encourage the adaptive reuse of older commercial buildings, including office and retail buildings, for housing.

Policy H-4.15: Housing and Infrastructure. Coordinate with water, sanitary sewer, and dry utility service providers to ensure that infrastructure is available to support anticipated housing development. The cost of infrastructure maintenance and improvement should be equitably shared among property owners rather than assigned entirely to new development.

San Rafael Zoning Ordinance. Section 14.16.030 of the San Rafael Zoning Ordinance requires all new developments, residential and non-residential, to contribute to the provision of affordable housing units for very-low, low-, and moderate-income households. Residential projects providing 15 or more housing units are required to provide 5 percent of the proposed units (excluding density bonus units) as affordable to low-income households. Development of more than 15 units must also satisfy a secondary requirement of either additional on-site affordable units, in-lieu fees for residential development, off-site affordable units, or donation of land to the City of San Rafael (City). Non-residential projects are required to provide 20 percent of the total number of residential units needed to provide housing for project employees in very-low, low-, and moderate-income households.

4.2.2 Impacts and Mitigation Measures

The following describes the proposed project's potential impacts related to population and housing according to the significance criteria described below. Mitigation measures are provided as appropriate.

4.2.2.1 Significance Criteria

The proposed project would have a potentially significant effect related to population and housing if it would:

Threshold 4.2.1: Induce substantial unplanned population growth, either directly or indirectly through:

- Development in excess of applicable Plan Bay Area 2050 or San Rafael General Plan housing or employment projections;
- Provision of infrastructure improvements substantially in excess of that needed to serve increased housing and employment growth projected by the San Rafael General Plan or Plan Bay Area 2050; or

Threshold 4.2.2: Directly or indirectly displace existing housing or people such that construction of replacement housing would be needed elsewhere and in turn result in one or more significant environmental effects.

4.2.2.2 Project Impacts

The following section discusses potential impacts related to population and housing associated with development of the proposed project, including construction and implementation of Phase 1, which would result in the creation of 922 residential units and a reduction of approximately 756 jobs (2025 Master Plan) and Phase 2, resulting in an additional 500 residential units and a reduction of approximately 813 jobs (2040 Vision Plan). Impacts associated with Phase 1 and Phase 2 are differentiated where appropriate.[28]

Threshold 4.2.1: Unplanned Growth. In its existing condition, the project site consists of an approximately 942,597-square-foot mall and associated parking, circulation, open space, and landscaping. As described in Chapter 3.0, Project Description, a total of approximately 2,190 workers would be employed on the project site under existing conditions at full occupancy. The proposed project would result in the redevelopment of the existing mall through demolition, renovation, and new construction to accommodate a mix of commercial and residential land uses. At full buildout, the proposed project would include approximately 217,520 square feet of commercial space and up to 1,422 residential units. At full buildout, approximately 10.5 percent of the proposed residential units (i.e., 147 of the 1,422 units) would be provided to Below Market Rate (BMR) households in compliance with Section 14.16.030 of the City's Zoning Ordinance, which requires that a minimum of 5 percent of the units be provided on site as BMR. While the City's Zoning Ordinance only requires 5 percent to be located on the project site, all of the affordable units would be provided on the project site. Additionally, despite the City's RHNA allocation, very-low income units are not

[28] Although this analysis discusses the potential impacts of Phase 1 and Phase 2 development as projected to occur in the years 2025 and 2040, respectively, it is acknowledged that potential development could be accelerated or slowed depending on market conditions. Therefore, to be conservative, this analysis considers the impact of project operations at full buildout as a singular phase.

required by the City. Affordable units would consist of units restricted to low-income households.[29] The proposed project would also include various associated site improvements, including a town square, modifications to the internal circulation and parking, and improvements to infrastructure and landscaping.

Construction. Construction of the proposed project would provide short-term construction jobs over two phases, with buildout expected by 2040. Many of the construction jobs for each phase would be temporary and would be specific to the variety of construction activities. The workforce would include a variety of construction trade workers, such as cement finishers, ironworkers, welders, carpenters, electricians, painters, grading workers, site prep workers, surveyors, and laborers. Generally, construction workers are only at a job site for the time frame in which their specific skills are needed to complete that phase of construction. Although the proposed project would increase the number of employees at the project site during construction activities, it is expected that local and regional construction workers would be available to serve the construction needs of the project, and construction workers would not be expected to permanently relocate their household as a consequence of working on the proposed project due to the short-term nature and localization of the construction work.

Overall, Phase 1 is anticipated to last approximately 19 to 32 months in total, with the majority of activities (demolition, site preparation, grading, etc.) lasting 2 months or less. The building construction phases would be the longest phases, with the residential portion lasting approximately 10 months and the retail portion lasting approximately 23 months. Construction of Phase 2 is anticipated to last approximately 60 months, including expected breaks between construction phases. Within each of these phases, a variety of trades would be used. As a result, no single trade would be on the project site for the entire Phase 1 or Phase 2 construction process. Therefore, it is not anticipated that any trade would be employed at the project site for a year or more. In the event of regional construction worker shortages, it is anticipated that workers from outside of the region or the State could temporarily relocate to the area for the duration of certain construction activities, but it is unlikely that such workers, who may be transient in nature due to their specific skillset, would permanently relocate to the area and be in need of permanent housing, thus increasing the demand for housing within San Rafael, Marin County, or the Bay Area.

Therefore, the proposed project would result in a **less than significant** impact associated with inducing substantial population growth or demand for housing through increased construction employment demands.

Operation. As detailed in Chapter 3.0, Project Description, it is estimated that the approximately 501,940 square feet of commercial uses in Phase 1 would generate an estimated maximum of 1,434 daily employees on the site, for a decrease of approximately 756 employees compared to the full occupancy of the project site that could occur under existing conditions. In light of the net reduction to approximately 217,520 square feet of commercial space associated with Phase 2, it is estimated that the proposed uses in Phase 2 would result in a decrease in the

[29] Low-income households are those earning between 51 and 80 percent of the area median income, subject to adjustment factors.

estimated maximum number of daily employees on the site, from 1,434 to 621 employees, a reduction of 813 employees compared to Phase 1 and 1,569 compared to full occupancy of the project site.

As described in Section 4.1, Land Use and Planning, the proposed project fits within the overall development assumptions envisioned under the General Plan and assumed in the General Plan Final EIR, as well as the specific density requirements for the project site. In addition, Phase 1 of the proposed project is specifically identified in the 2023-2031 Housing Element, which was certified in May 2023 and did not change any of the overall buildout figures from the 2040 General Plan.

Based on San Rafael's average household size of 2.49 persons per household as identified in the San Rafael 2040 General Plan, the proposed project would result in an increase to the city's population by approximately 2,295 residents with completion of Phase 1 in approximately 2025 and an additional 1,246 residents with completion of Phase 2, for a total of 3,541 residents at project buildout in approximately 2040.[30,31] The number of residents conservatively assumed through Phase 1 and Phase 2 (buildout) represent approximately 64 percent and 39 percent of San Rafael's anticipated population growth of 3,575 and 9,029 residents by 2025 and 2040, respectively.[32] At full buildout, the proposed project would include 201 studio units, 823 one-bedroom units, 324 two-bedroom units, 54 three-bedroom units, and 20 four-bedroom units.

As outlined in Table 4.2.A, the County's population is expected to increase from 252,959 persons in 2023 to 320,569 in 2040. Population growth associated with the increase in housing supply would be approximately 5 percent of the projected increase in the County's population by 2040 (3,541 of the 67,610 person increase) and 0.2 percent of the projected increase in the region (3,541 of the 1,887,310 person increase). Therefore, the proposed project is within the forecasted population growth planned for in the San Rafael General Plan 2040 and ABAG and MTC Projections 2040, and the proposed project would not result in substantial unplanned population growth.

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30 922 residential units x 2.49 persons per household = 2,295;
1,422 residential units x 2.49 persons per household = 3,541

31 The average assumed household size of 2.49 persons per household is conservative and likely overestimates the projected population for the proposed project as evaluated in this EIR. According to the project sponsor, due to the smaller residential square footage and number of bedrooms proposed by the project, compared to the City's average dwelling unit types (which are typically single-family residential and include higher square footages and bedroom counts), the proposed project is likely to generate fewer new residents, at approximately 2,150 at project buildout (or 1,391 fewer residents than projected using the City's average household size). (Economic & Planning Systems, Inc. 2022. Household Size Analysis for the Northgate Town Square Project. September.)

32 2,258 residents introduced by Phase 1 ÷ 3,575 residents estimated in the General Plan by 2025 = 63%;
3,541 residents introduced at project buildout (2040) ÷ 8,910 residents estimated at General Plan buildout (2040) = 39.7%

Furthermore, the proposed project would contribute to the projected housing supply needs for San Rafael, Marin County, and the Bay Area. The proposed project's contribution to the increase in population and households is shown in Tables 4.2.F through 4.2.H. As shown in Tables 4.2.F through 4.2.H, the proposed project would represent less than 2 percent of the Bay Area's population and household growth through 2025 and less than 0.2 percent through 2040. For Marin County, the proposed project would represent approximately 9.32 percent of the population growth and 7.8 percent of the household growth through 2025, and less than 6 percent of the population and household growth throughout 2040. For San Rafael, the proposed project would represent 42.7 percent of the projected population growth and 161 percent of the projected household growth through 2025, and approximately 39.2 percent of the population growth and 41.1 percent of the household growth through 2040.

Table 4.2.F: Project Contribution to Projected Growth – Bay Area

Type	2023	2025 Estimate	Change (2023-2025)	Proposed Project – Phase 1 (% Change)	2040 Estimate	Change (2023-2040)	Proposed Project Buildout (% Change)
Population	7.55 million	8.23 million	680,000	2,295 (0.49%)	9.49 million	1.94 million	3,541 (0.18%)
Households	3.02 million	3.09 million	70,000	922 (1.31%)	3.84 million	820,000	1,422 (0.17%)

Source 1: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023 (California Department of Finance n.d.)
Source 2: *Plan Bay Area 2050, A Vision for the Future* (ABAG and MTC 2021)
Source 3: San Rafael General Plan 2040 (City of San Rafael 2021a).
ABAG = Association of Bay Area Governments
MTC = Metropolitan Transportation Commission

Table 4.2.G: Project Contribution to Projected Growth – Marin County

Type	2023	2025 Estimate	Change (2023-2025)	Proposed Project – Phase 1 (% Change)	2040 Estimate	Change (2023-2040)	Proposed Project Buildout (% Change)
Population	252,959	277,580	24,621	2,295 (9.32%)	320,569	67,610	3,541 (5.2%)
Households	112,183	123,991	11,808	922 (7.8%)	144,874	32,691	1,422 (4.3%)

Source 1: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023 (California Department of Finance n.d.)
Source 2: *Plan Bay Area 2050, A Vision for the Future* (ABAG and MTC 2021)
Source 3: San Rafael General Plan 2040 (City of San Rafael 2021a).
ABAG = Association of Bay Area Governments
MTC = Metropolitan Transportation Commission

Table 4.2.H: Project Contribution to Projected Growth – San Rafael

Type	2023	2025 Estimate	Change (2023-2025)	Proposed Project – Phase 1 (% Change)	2040 Estimate	Change (2023-2040)	Proposed Project Buildout (% Change)
Population	59,681	65,056	5,375	2,295 (42.7%)	68,710	9,029	3,541 (39.2%)
Households	24,699	25,271	572	922 (161%)	28,160	3,461	1,422 (41.1%)

Source 1: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2023 (California Department of Finance n.d.)
Source 2: *Plan Bay Area 2050, A Vision for the Future* (ABAG and MTC 2021)
Source 3: San Rafael General Plan 2040 (City of San Rafael 2021a).
ABAG = Association of Bay Area Governments
MTC = Metropolitan Transportation Commission

As shown in Tables 4.2.F and 4.2.G, the proposed project would be consistent with the projected population and household growth for the Bay Area and Marin County for both 2025 and 2040. These projections are based on Plan Bay Area 2050, which sets housing development goals for the Bay Area. Additionally, Plan Bay Area 2050 designates the project site as a TRA and HRA, indicating that it has been identified as an appropriate area for growth.

As shown in Table 4.2.H, the proposed project would represent 161 percent more households than were anticipated within San Rafael by 2025 and approximately 42.7 percent of the population increase. The proposed project would be consistent with the projected population and household growth for 2040. The 2025 and 2040 population and housing estimates in Table 4.2.H are from the 2040 General Plan and 2023-2031 Housing Element. As discussed previously, it is acknowledged that potential development could be accelerated or slowed, depending on market conditions. Additionally, the 922 units anticipated by 2025 are accounted for in the City's 2023-2031 Housing Element, as shown in Table 4.2.H. Therefore, while the proposed project would account for more growth within the City than was previously projected for the year 2025, the proposed project would still be consistent with the City's 2023-2031 Housing Element and overall (2040) development projections within the General Plan. Therefore, the proposed project would not directly induce substantial unplanned population growth.

As previously discussed, the proposed project would result in a reduction of 756 employees in Phase 1 and 1,569 employees at full buildout. Given the type of new and renovated commercial uses on the site, the types of jobs available are anticipated to be similar to existing conditions. Therefore, the proposed project would not result in significant unplanned job growth or result in significant unplanned population growth in San Rafael.

Given the analysis above, the proposed project would substantially increase the housing stock within San Rafael and the region, and would reduce the number of employment opportunities within the area. Therefore, the proposed project would not result in substantial direct or indirect population growth beyond that planned for the city, county, or region, and instead would contribute to the needed and planned supply of housing, including affordable housing. Therefore, this impact would be **less than significant**.

Threshold 4.2.2: Displacement. In its existing condition, the project site consists of an approximately 942,597-square-foot mall and associated parking, circulation, open space, and landscaping. Approximately 2,190 workers are employed at the project site at full occupancy under existing conditions.

The proposed project itself would not directly displace people or housing by demolishing units because there is no existing housing on the project site. Instead, the proposed project would add to the supply of market rate and affordable housing by introducing 1,422 new residential units at buildout (2040).

Increasing the availability of market rate and affordable housing would tend to moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock. Indirect displacement also occurs when employment, housing, or neighborhood conditions force existing residents to move or households feel like their move is involuntary.

Displacement can be caused by a range of physical, economic, and social factors including but not limited to foreclosure, condominium conversion, building deterioration or condemnation, increased taxes, natural disasters, eminent domain, and increases in housing costs.

As previously discussed, the proposed project would result in a decrease of approximately 756 employees in Phase 1 and 1,569 in Phase 2 compared to full occupancy of the mall. Therefore, the proposed project would result in a decrease in the level of demand for housing generated by workers at the project site. As previously discussed, as of April 2021, Marin County had an unemployment rate of 4.6 percent. This unemployment rate would indicate the workers who live in the area would have opportunities to find employment within Marin County and would not be expected to need to relocate due to job loss. Additionally, as previously discussed, the baseline for analysis in this EIR assumes full occupancy of the Northgate Mall. Many of the 2,190 persons assumed to be employed on the project site under existing conditions may not actually be realized due to current market conditions. Therefore, it is likely that the job loss on the project site is overstated. Additionally, the proposed project would provide up to 1,422 residential units. Increasing the availability of market rate and affordable housing would moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock. Therefore, the proposed project would not directly or indirectly result in the displacement of housing or people necessitating the construction elsewhere. Impacts would be **less than significant**.

4.2.2.3 Cumulative Impacts

As discussed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, this EIR takes into account growth within the San Rafael city boundary based on projected growth from the City's General Plan as well as regional forecasts by ABAG and MTC. Cumulative development within San Rafael is anticipated to result in 4,460 new residential units, 8,910 new residents, and 4,115 new employees by 2040.

As discussed above, the project site does not contain any existing residential uses, and the proposed project would result in an increase in the available housing stock within San Rafael by introducing up to 1,422 new dwelling units. The proposed project would not displace housing or people necessitating the construction of replacement housing elsewhere. Accordingly, under the cumulative conditions, implementation of the proposed project would also not displace housing or substantial numbers of people, thereby necessitating the construction of replacement housing elsewhere.

As previously discussed, full buildout of the project site has been identified in regional and local planning documents prepared for the City, including Plan Bay Area 2050 and the associated RHNA, General Plan 2040, and the 2023-2031 Housing Element. In particular, the proposed project is identified as a key project in helping the City achieve its allocations from the 2023-2031 RHNA cycle and is specifically accounted for in the Housing Element.

As discussed above, the proposed project is also identified as a TRA and HRA in Plan Bay Area 2050, indicating that it is an appropriate area for growth within the City and region based on surrounding transit opportunities or access to schools, jobs, or open spaces among other advantages. Therefore, the proposed project would be consistent with regional projections for housing and population, and

when combined with other reasonably foreseeable projects, would not conflict with the development assumptions or projections for San Rafael, Marin County, or the Bay Area. In addition to the proposed project, a total of 225 residential units have either been approved or are under construction since adoption of the 2040 General Plan and 2023-2031 Housing Element. Furthermore, the proposed project would assist the City, County, and region in meeting the established RHNA goals for 2023-2031 and beyond. Therefore, the proposed project would have a **less than significant** impact related to population growth under the cumulative condition.

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4.3 VISUAL RESOURCES

This section assesses the effects of the proposed project on visual resources within and in the vicinity of the project site. The proposed project's consistency with the San Rafael General Plan 2040 (General Plan) policies relevant to aesthetics, as well as compliance with relevant requirements and standards set forth in the San Rafael Zoning Code, are also discussed. This analysis also considers the visual quality of the project site and its surroundings in addition to public views of the project site. Mitigation measures to reduce or avoid potentially significant impacts are identified where appropriate.

4.3.1 Setting

This section describes the existing visual character of the project site, the areas immediately surrounding the project site, and the area in the general vicinity of the project site.

4.3.1.1 Local Context

The approximately 44.76-acre project site consists of the existing Northgate Mall, which is located within the San Rafael Town Center in northern San Rafael, just west of United States Route 101 (US-101). The project site is generally surrounded by a mix of uses, including commercial, residential, open space, and institutional that are primarily one to two stories in height but also range up to six stories. Circulation in the surrounding area is provided by one- to two-lane roadways. The roadways serving the project vicinity generally do not provide on-street parking; parking is instead provided in surface lots and low-rise parking structures with some on-street parking available in the residential neighborhoods to the south. The nearest access points to and from US-101 are the on- and off-ramps located immediately north of the project site along Manuel T. Freitas Parkway. Local roadways surrounding and providing public views of the project site include Las Gallinas Avenue, Northgate Drive, Merrydale Road, Thorndale Drive, and Del Presidio Boulevard, which connects Las Gallinas Avenue to Manuel T. Freitas Parkway.

4.3.1.2 Existing Visual Character of the Project Site

The Northgate Mall originally opened in 1965, with The Emporium as the original anchor tenant. Today, only fragments of the original 1964 Northgate Mall construction remain at the site. In 1987, the site underwent a major renovation that primarily enclosed the original open-air design. The facility is currently the only enclosed regional shopping center in Marin County. The mall underwent additional renovations and exterior improvements in 2008. Refer to Section 4.4, Cultural Resources, for a complete description of the site's development history.

The existing mall is generally oriented on a north-south axis on an existing generally level topography, with the main building located in the center of the project site and surrounded by large expanses of surface parking and standalone buildings and structures. The main mall building, which is a total of approximately 605,283 square feet in size, consists of five sections: (1) Mall Shops East, (2) Mall Shops West, (3) Century Theatre, (4) RH Outlet,[1] and (5) Macy's. The main building is characterized by remnant New Formalism architectural design (the former Emporium building) and

[1] The RH Outlet building was formerly known as the Sears anchor. Certain project application materials refer to the building this way.

Post-Modern style (the former Sears building, now RH Outlet). The New Formalism style is characterized by symmetry and monumental scale while using traditionally rich materials such as marble or granite, while the Post-Modernism style lacks traditional symmetry and proportions and uses columns and arches with overly defined features, which results in a contradictory and eclectic design style. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure, and a vacant retail building. The second floor of the parking structure also includes a pedestrian bridge that provides direct access to the second floor of the Kohl's building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building. As shown in Table 3.A in Chapter 3.0, Project Description, building heights on the site range from one to two stories.

Landscaping on the project site consists of ornamental landscaping throughout the project site, including landscaping strips along the boundaries of the site that contain street trees and shrubs, planters with trees within the surface parking lot, and some mature trees located adjacent to the existing buildings. A total of 679 trees are located on the project site. In addition, an approximately 9,505-square-foot artificial turf lawn is located between the main building and the Kohl's building.

4.3.1.3 Visual Character of the Surrounding Area

The project area is characterized by relatively dense urban development with some open space and landscaping in the nearby vicinity. The project site sits in a valley approximately 40 feet above mean sea level (amsl) between hillsides to the east and southwest, as well as Hartzell Park and Mt. Olivet San Rafael Cemetery to the south, which are approximately 160 feet and 90 feet, respectively, in elevation. The hillsides to the southwest of the project site, which are generally located southeast of Devon Drive, extend to approximately 640 feet amsl, while hillsides across US-101 to the east extend to approximately 1,000 feet amsl. Smaller hills are also located immediately north (360 feet amsl) and northwest (300 feet amsl) of the project site as well.

There are no officially designated scenic vistas in San Rafael; however, the General Plan identifies various natural and built environment resources as visually significant. Some visually significant mountains and hillsides identified in the General Plan are visible from neighboring properties in the project vicinity but are largely obstructed, including San Pedro Ridge to the east, San Rafael Hill to the south, and Mount Tamalpais to the southwest. The site is completely surrounded by Las Gallinas Avenue and Northgate Drive. There are also no State-designated Scenic Highways or potentially eligible Scenic Highways near or visible from the project site.[2] The visual character of the surrounding area is further described below.

- **North of the Project Site:** The project site is bordered to the north by the east-west segment of the four-lane Las Gallinas Avenue, across which are various one- to three-story commercial uses, including banks, office buildings, and two gas stations. Farther north is Manuel T. Freitas Parkway, which includes on- and off-ramps for US-101, as well as a five-story hotel and single- and multi-family residential uses. Manuel T. Freitas Parkway serves as an overpass over US-101

[2] California Department of Transportation (Caltrans). 2023. California State Scenic Highways. Website: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways (accessed March 2023).

immediately north of the site, which provides pedestrians and vehicles an elevated view of the project site and surrounding areas.

- **East of the Project Site:** The project site is bordered to the east by the north-south segment of Las Gallinas Avenue. Across Las Gallinas Avenue to the east are a mix of one- to two-story uses, including a commercial strip mall north of Merrydale Road and the Mt. Olivet San Rafael Cemetery located south of Merrydale Road. As noted above, the cemetery has a high point of approximately 90 feet in elevation, which is approximately 50 feet higher than the project site,[3] due to the fact that it sits on top of a knoll. Merrydale Road is located east of and terminates at the project site. Merrydale Road serves as an overpass over US-101, which provides pedestrians and vehicles an elevated view of the project site and surrounding areas. Farther east is US-101, which runs north-south in the vicinity of the project site, across which are one- to five-story commercial, healthcare, and residential uses.

- **South of the Project Site:** The project site is bordered to the south by the east-west segment of Northgate Drive. Land uses south of Northgate Drive generally consist of one- to three-story single- and multi-family residential uses. Hartzell Park is also located south of the project site, and Terra Linda High School is located to the southeast. Similar to the Mt. Olivet San Rafael Cemetery, Hartzell Park also sits atop a knoll that extends approximately 160 feet in elevation, which is approximately 120 feet higher in elevation than the project site, similar to the hillside to the west of the project site.[4]

- **West of the Project Site:** The project site is bordered to the west by the north-south segment of Northgate Drive. Across Northgate Drive is a sloped hillside on top of which is Villa Marin, a retirement community, as well as two- to five-story multi-family residential units. Past Villa Marin are additional single- and multi-family residential units, Vallecito Elementary School, and the Kaiser Permanente San Rafael Medical Center, which ranges in height from one to five stories.

4.3.1.4 Views from the Project Site

Views from within the project site to surrounding areas are largely obstructed due to existing development (both on and off site) and off-site mature trees. Available views are generally limited to the immediate surroundings and surrounding hillsides. Typical views of surrounding land uses from the project site are shown on Figures 3-8 through 3-10 in Chapter 3.0, Project Description, of this Environmental Impact Report (EIR). Viewpoint locations are shown on Figure 4.3-4.

- **Views to the North:** Views to the north are restricted by mature trees within and on the north border of the project site and by existing commercial buildings to the north. These buildings vary in design but primarily consist of stucco and glass. Surrounding hillsides are visible to the north but are largely obstructed by the existing trees and development (see Figure 3-9, Photos 9 and 10, which depict views to the north along Las Gallinas Avenue and Northgate Drive.)

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[3] United States Geological Survey (USGS). 2022. TopoBuilder. Website: https://topobuilder.nationalmap.gov/ (accessed July 2023).

[4] Ibid.

- **Views to the East:** Views to the east are restricted by mature trees within and on the east border of the project site and existing commercial buildings to the east. These buildings vary in design but primarily consist of stucco, glass, and wood siding. Surrounding hillsides are visible to the east, including San Pedro Ridge, but are largely obstructed by the existing trees and development (see Figure 3-10, Photo 11, which depicts the view of mature eucalyptus trees bordering the Mt. Olivet San Rafael Cemetery).

- **Views to the South:** Views to the south are restricted by mature trees within and south of the project site and single- and multi-family residential buildings to the south. These buildings vary in design but primarily consist of stucco and wood siding. Long-range views are generally not available to the south due to existing mature trees and development; however, there are occasional, largely obstructed views of hillsides to the south, including San Rafael Hill and Mount Tamalpais (see Figure 3-10, Photo 12, which depicts the view towards Northgate Drive.)

- **Views to the West:** Views to the west primarily consist of an adjacent vegetated, undeveloped hillside with intermittent views of adjacent residential and commercial uses. Views are partially obstructed by mature trees within and west of the project site. Long-range views are not available to the west due to the adjacent hillside and development (see Figures 3-8 and 3-9, Photos 7 through 9, which depict the surrounding residential hillsides and views available from Northgate Drive).

4.3.1.5 Views of the Project Site

Similar to views from the project site described above, views of the project site from areas that do not immediately border the site are generally limited due to the developed nature of areas immediately surrounding the project site, existing mature trees, and the topography, including surrounding hillsides. The following subsection describes existing views of the project site from select viewpoints that were used to develop visual simulations for the proposed project, the locations for which are shown on Figure 4.3-1. Existing views from these vantage points, which are shown on Figures 4.3-2 through 4.3-4, are described below:

- **Views from the North, Intersection of Las Gallinas Avenue and Del Presidio Boulevard (Viewpoint 1, Photo 1 on Figure 4.3-2):** Views of the project site from the intersection of Las Gallinas Avenue and Del Presidio Boulevard (located at the northwestern corner of the project site) looking south towards the project site are of surface parking and the Macy's and Mall Shops West buildings. Surrounding one- to three-story commercial uses are visible as well as mature street trees, which partially obstruct views of the surrounding hillsides.

- **Views from the North, Manuel T. Freitas Parkway Overpass (Viewpoint 2, Photo 2 on Figure 4.3-2):** Views of the project site from the elevated Manuel T. Freitas Parkway Overpass of US-101, north of the site and looking southwest towards the project site, are of the Macy's building. No other portion of the project site is visible due to intervening one- to three-story commercial development and mature trees. Views beyond the site of surrounding hillsides are generally available but are partially obstructed due to existing development and mature trees.

LSA

FIGURE 4.3-1

Visual Simulation Viewpoints

Project Site Boundary

N

0 400 800

FEET

SOURCE: MerloneGeier Partners, 10/19/2022

I:\CSR2001.03\G\ExistPropVisSimViewpoints.ai (7/13/2023)

Northgate Mall Redevelopment Project EIR

Existing and Proposed Project Visual Simulation Viewpoints

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Viewpoint 1 - Existing view of the project site looking south from the intersection of Las Gallinas Avenue and Del Presidio Boulevard

Viewpoint 2 - Existing view of the project site looking southwest from the Manuel T. Freitas Parkway Overpass

LSA

FIGURE 4.3-2

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR

Existing Views of the Project Site from the North

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- **Views from the East, Civic Center Drive (Viewpoint 3, Photo 3 on Figure 4.3-3):** Views of the project site from Civic Center Drive, just east of US-101 and approximately 0.15 mile east of the project site, looking west towards the project site are of the Macy's, Mall Shops East, and Century Theatre buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees, which partially obstruct views of the distant surrounding hillsides.

- **Views from the East, Merrydale Road Overpass (Viewpoint 4, Photo 4 on Figure 4.3-3):** Views of the project site from the elevated Merrydale Road Overpass of US-101 east of the site and looking west towards the project site are of the Macy's and Mall Shops East buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees, which partially obstruct views of the surrounding hillsides.

- **Views from the South, Hartzell Park (Viewpoint 5, Photo 5 on Figure 4.3-4):** Views of the project site from Hartzell Park, south of the site and looking north towards the project site, are limited and largely obstructed by mature vegetation. From this vantage point, views are of the RH Outlet building and surface parking. Surrounding one- to five-story commercial uses are visible as well as mature trees, which partially obstruct views of the distant surrounding hillsides.

- **Views from the South, Nova Albion Way (Viewpoint 6, Photo 6 on Figure 4.3-4):** Views of the project site from Nova Albion Way (a residential street located south of the project site) looking north towards the project site are largely obstructed due to existing mature trees and single-family residential units, but small portions of RH Outlet are visible.

4.3.1.6 Light and Glare

Sources of light and glare on the project site are generally limited to the interior and exterior lights of existing buildings on the project site, exterior lights on signage, surface parking and parking garage lighting, lamp posts greater than 20 feet in height, headlights from automobiles, and street lighting in the immediate vicinity. Sensitive receptors (with respect to light and glare) in the vicinity of the project site include existing single- and multi-family residential uses to the south, the existing retirement community and existing multi-family residential units to the west. Existing lighting on the project site is generally consistent with nighttime lighting conditions expected of urbanized areas, particularly those located along major thoroughfares in the vicinity of the site (e.g., Las Gallinas Avenue and Northgate Drive). These light sources generally consist of interior and exterior lights on buildings, exterior lights on signage, parking lot lighting with lamp posts greater than 20 feet in height, and headlights from automobiles.

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Viewpoint 3 - Existing view of the project site looking west from Civic Center Drive

Viewpoint 4 - Existing view of the project site looking west from the Merrydale Road Overpass

LSA

FIGURE 4.3-3

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR

Existing Views of the Project Site from the East

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Viewpoint 5 - Existing view of the project site looking north from Hartzell Park

Viewpoint 6 - Existing view of the project site looking north from Nova Albion Way

LSA

FIGURE 4.3-4

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR

Existing Views of the Project Site from the South

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4.3.1.7 Shade and Shadow

Existing buildings on and in the vicinity of the site, particularly the taller five-story commercial, multi-family residential, hotel, and healthcare uses, currently cast shadows onto adjacent structures and properties during certain seasons and times of day, particularly during the late afternoon hours during the winter months when days are shorter and shadows cast are longer (e.g., December 21, the date of the winter solstice, represents the worst case shadow day). This is generally the nature of the development pattern within existing urbanized areas. The existing mall currently does not cast shade or shadows on any historical resources sensitive to shade or quasi-public park/open space areas. Existing buildings are also separated from most nearby residential areas by existing roadways, including Northgate Drive. Existing shadows cast from the project site onto adjacent properties and structures are therefore currently minimal and typical of an urban environment.

4.3.1.8 Regulatory Framework

The following discusses applicable standards and policies related to visual resources, including those from the California State Scenic Highway Program, San Rafael General Plan 2040, San Rafael Municipal Code, San Rafael Design Guidelines (Design Guidelines), and North San Rafael Vision Promenade Conceptual Plan (Promenade Conceptual Plan).

State Regulations. State regulations applicable to the proposed project include the California State Scenic Highway Program, as described below.

> ***California State Scenic Highway Program.*** The California State Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. State laws governing the State Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway may be designated as "scenic" based on the expanse of the natural landscape that can be seen by travelers, the scenic quality of that landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. A Scenic Corridor is described as the land generally adjacent to and visible from such a highway and is usually limited by topography and/or jurisdictional boundaries. In addition to State Highways, Marin County roads are also eligible for scenic designation. As noted above, no State-designated Scenic Highways are located within view of the project site.

Local Regulations. The project would be required to comply with local regulations, including the General Plan, the Municipal Code, the Design Guidelines, and the Promenade Conceptual Plan.

> ***San Rafael General Plan 2040.*** The General Plan contains the following goals, policies, and actions related to visual resources:
>
> > **Goal LU-1: Well-Managed Growth and Change.** Grow and change in a way that serves community needs, protects the environment, improves fiscal stability, and enhances the quality of life.
> >
> > > **Policy LU-1.18: Height Bonuses.** Allow the granting of height bonuses for development that provides one or more of the amenities listed in Table 3-2, provided that the

building's design is consistent with applicable design guidelines and standards. No more than one height bonus may be granted on each site. Use permit requirements for height bonuses are shown in Table 3-2. The bonuses may be used in lieu of those provided by State density bonus programs for affordable housing. Bonuses are not additive. In other words, an applicant using State density bonuses is not eligible for additional bonuses offered through local programs.

Goal LU-3: Distinctive Neighborhoods. Create and sustain neighborhoods of integrity and distinctive character.

Policy LU-3.2: New Development in Residential Neighborhoods. Preserve, enhance, and maintain the residential character of neighborhoods to keep them safe, desirable places to live. New development, redevelopment of existing buildings, and land use changes within and adjacent to residential areas should:

- Enhance neighborhood image and design quality
- Incorporate sensitive transitions in height and setbacks from adjacent properties
- Preserve historic, unique, and architecturally significant structures
- Respect and enhance natural features and terrain
- Reduce exposure to hazards, including limited emergency vehicle access
- Include amenities such as sidewalks, pathways, trees, and other landscape improvements
- Maintain or enhance infrastructure service levels
- Meet expected parking demand
- Minimize reduction of views, privacy, and solar access for neighboring properties

Policy LU-3.6: Transitions Between Uses. Outside of mixed-use developments, maintain buffers between residential uses and adjacent commercial and institutional uses. Parking lots, loading areas, trash facilities, and similar activities associated with nonresidential uses should be appropriately screened.

Goal CDP-1: A Beautiful City. Preserve and strengthen San Rafael's natural and built features to enhance the appearance and livability of the city.

Policy CDP-1.1: City Image. Reinforce San Rafael's image by respecting the city's natural features, protecting its historic resources, and strengthening its focal points, gateways, corridors, and neighborhoods.

Policy CDP-1.2: Natural Features. Recognize and protect the key natural features that shape San Rafael's identity, including the Bay, local hills and ridgelines, creeks and wetlands, tree cover, and views of Mt. Tamalpais and other natural landmarks. Height limits and other building standards should respect San Rafael's natural topography and reinforce its sense of place, including the character and boundaries of individual neighborhoods.

Policy CDP-1.3: Hillside Protection. Protect the visual integrity and character of San Rafael's hillsides and ridgelines.

- **Program CDP-1.3A: Hillside Design Guidelines.** Continue to implement hillside design guidelines through the design review process, as well as larger lot size requirements where there are access limitations or natural hazards. Update the design guidelines as needed.

Policy CDP-1.5: Views. Respect and enhance to the greatest extent possible, views to the Bay and its islands; wetlands, marinas, and canal waterfront; hillsides and ridgelines; Mt. Tamalpais; Marin Civic Center; and St. Raphael's bell tower; as seen from streets, parks, and public pathways.

- **Program CDP-1.5A: Evaluating View Impacts.** Consider the impact of proposed development on views, especially views of Mt Tamalpais and nearby ridgelines. Where feasible, new development should frame views of ridges and mountains and minimize reduction of views, privacy, and solar access.

Policy CDP-4.1: Design Guidelines and Standards. Use design guidelines and standards to strengthen the visual and functional qualities of San Rafael's neighborhoods, districts, and centers. Guidelines and standards should ensure that new construction, additions, and alterations are compatible with the surrounding neighborhoods while still allowing for innovative, affordable design.

Policy CDP-4.11: Lighting. Encourage lighting for safety and security while preventing excessive light spillover and glare. Lighting should complement building and landscape design.

San Rafael Municipal Code. Title 14 (Zoning Ordinance) of the San Rafael Municipal Code is the primary tool that shapes the form and character of physical development in San Rafael. The Zoning Ordinance contains all the Zoning Districts, and identifies land use standards, site development regulations, and other general provisions that ensure consistency between the General Plan and proposed development projects. Section 14.01.030, Purposes, states that the San Rafael Zoning Ordinance is, among other things, intended to reduce or remove negative impacts caused by inappropriate location, use, or design of buildings and improvements, promote design quality in all development, and preserve and enhance key visual features in the community, including the bay shoreline, canal, wetlands, and hillsides.

Chapter 14.07, Planned Development (PD) District. The project proposes a change in zoning to a PD District, meaning it is subject to the PD District regulations described in Chapter 14.07 of the City of San Rafael Municipal Code. Although the PD District regulations permit project-specific design and standards to be applied as part of the approval process, Chapter 14.07 also describes general development criteria for projects within the PD District.

Section 14.16.227, Light and Glare. Section 14.16.227, Light and Glare, regulates the type of colors, materials, and lighting to avoid creating undue off-site light and glare impacts. New or amended building or site colors, materials, and lighting would be required to comply with the standards, subject to review and recommendation by the police department, public works department, and community development department. Further requirements include discouraging use of reflective or glossy

materials, and the shielding of light fixtures and minimization of foot-candle intensity to minimize impacts on adjacent development.

Chapter 14.18, Parking. Section 14.18.160, Parking Lot Screening and Landscaping, regulates the type of landscaping and trees for parking lots. Section 14.18.170, Lighting, states that lights provided to illuminate any parking facility or paved area shall be designed to reflect away from residential use and motorists. It is the intent to maintain light standards in a low-profile design, as well as to be compatible to the architectural design and landscape plan. Light fixtures (e.g., pole and wall-mount) should be selected and spaced to minimize conflicts with tree placement and growth.

Chapter 14.19, Signs. Section 14.19.101, Purpose, states that this chapter is intended to regulate the location, size, type, and number of signs that are permitted in the city. These regulations are in part intended to preserve the visual appearance of the city. Section 14.19.046, Sign Programs, illustrates the City of San Rafael's (City's) establishment of a sign program intended to create design standards and provisions to regulate signs used for larger complexes, commercial centers, or buildings with multiple tenants, to achieve aesthetic compatibility between all signs proposed in a project, and with signs on adjacent properties. These standards include design continuity that requires all signs be of a common design theme and placement, use common materials, colors, and illumination. Section 14.19.055, Illumination Standards, further restricts the type of signs that may be permitted. This section minimizes the allowance of signs illuminated by an artificial source so as to influence light and glare on adjacent properties. This section outlines specific design criteria and restrictions for these signs, including an outline of which types of illuminated signs are prohibited within the city.

Chapter 14.25, Environmental and Design Review Permits. This chapter implements General Plan policies concerning the environment and design by guiding the location, functions, and appearance of development. The key environmental and design goal of the City is to respect and protect the natural environment and ensure that development is harmoniously integrated with the existing qualities of the city. The permits aim to maintain the balance between the natural and built environment, ensure that development materials are compatible with the surrounding environment and promote design excellence, contribute to the attractiveness of the city, preserve neighborhood integrity, enhance views from public property, and protect the right for citizens to conduct residential structure modifications while reducing the impacts to the neighboring residences. Section 14.25.050, Design Review Criteria, specifically identifies the standards for site design in Section 14.25.050(E). Section 14.25.050(E)(1), Views, states that major views of the San Pablo Bay, wetlands, bay frontage, the Canal, Mount Tamalpais, and the hills should be preserved and enhanced from public streets and public vantage points. In addition, views of St. Raphael's Church up "A" Street should be respected. Section 14.25.050(E)(2), Site Features, requires the City to respect site features and recognize site constraints by minimizing grading, erosion, and removal of natural vegetation. Sensitive areas such as highly visible hillsides, steep, unstable or hazardous slopes, creeks and drainageways, and wildlife habitat should be preserved and respected.

San Rafael Design Guidelines. The City adopted the interim Design Guidelines for residential and nonresidential structures to ensure that the design of new buildings and additions are compatible with their surroundings. The Design Guidelines reflect what the City considers to be desirable design and are applicable in all areas except those that are amended by subsequent plans. Design Guidelines specific to both residential and non-residential developments include, but are not limited to, building design, scale, building height, roof shapes, and lighting. The review of projects is conducted by City staff and the Design Review Board to evaluate the quality of project design.

The Historic and Architecturally Significant Buildings section of the Design Guidelines applies to development in the immediate vicinity of buildings designated by the City of San Rafael as being historically or architecturally significant resources. The list of historical resources is based on a September 1986 survey. Design Guidelines prescribed for historically or architecturally significant resources include, but are not limited to, pattern and scale, transition, horizontal lines, proportions, materials, differentiation between ground floor and upper floors, roof shapes, and views of the St. Raphael Church spire. The Design Guidelines specifically require a view evaluation for locations in the viewshed of the spire if a future development is over one story.

North San Rafael Vision Promenade Conceptual Plan. The North San Rafael Vision, completed in 1997, summarizes the community-wide effort for the vision of north San Rafael. The Promenade Conceptual Plan, adopted in November 2002, expands on the North San Rafael Vision and includes recommendations for pedestrian and bicycle ways, promenade amenities, and unified promenade themes. The Promenade Conceptual Plan includes criteria and recommendations for architectural elements, signage, lighting, landscaping, and the protection of views applicable to future development in north San Rafael.

4.3.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to aesthetics that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.3.2.1 Significance Criteria

The project site is located in an urbanized setting; therefore, an analysis of visual character or quality of public views of the site and its surroundings is not required. Implementation of the proposed project would have a significant effect on visual resources if it would:

Threshold 4.3.1: Substantially or completely block public views of identified scenic resources;

Threshold 4.3.2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway;

Threshold 4.3.3: Conflict with applicable zoning and other regulations governing scenic quality;

Threshold 4.3.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area; or

Threshold 4.3.4: Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces.

As previously noted, the project site consists of the existing Northgate Mall complex and is generally surrounded by a developed urban environment, with views of distant hillsides available from some surrounding locations. The project site does not contain any unique visual features or scenic resources; therefore, the following analysis focuses on the views of scenic resources available from the project site and the surrounding areas.

For the purposes of the following analysis, high-quality views have topographic relief, a variety of vegetation, rich colors, impressive scenery, and unique natural and/or built features. Moderate quality views have interesting but minor landforms, some variety in vegetation and color, and/or moderate scenery. Low quality views have uninteresting features, little variety in vegetation and color, uninteresting scenery, and/or common elements.[5] In addition, viewer types in the project area are broad, including motorists, pedestrians, and neighboring uses. Public viewer groups are limited to motorists, bicyclists, and pedestrians along public roadways in the project vicinity, as well as users of nearby parks and public open spaces. Private views are not considered protected scenic views pursuant to the California Environmental Quality Act (CEQA) and are not discussed in this analysis.[6]

Viewer exposure conditions were determined based on a review of a variety of data, including project maps and drawings, aerial and ground-level photographs of the project area, conceptual simulations of the proposed project, and field observations. Variables include the viewing distance, angle of view, the extent to which views are screened or open, and duration of view. Viewing distances are described according to whether the proposed project would be viewed within a foreground zone (within 0.5 mile), middleground zone (0.5 to 2 miles), or background zone (beyond 2 miles). Viewing angle and extent of visibility consider the relative location of the proposed project to the viewer and whether visibility conditions are open and panoramic, or limited by intervening vegetation, structures, or terrain.

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5 Federal Highway Administration (FHWA). 2015. *Guidelines for the Visual Impact Assessment of Highway Projects.* January. View definitions are adapted from these guidelines to aid in the analysis of the proposed development project given that the City of San Rafael does not have established view definitions.

6 The California Court of Appeals concluded in its *Mira Mar Mobile Community v. Oceanside* decision that potential impacts related to views from private lands are not considered impacts under CEQA unless the lead agency has specifically adopted a standard or policy relevant to the project site specifically protecting a private landowner's views. The City of San Rafael, as the CEQA lead agency for the proposed project, has not adopted any such policy or standard.

The duration of the view pertains to the amount of time the viewing area would typically be seen from a sensitive viewpoint. In general, the duration of the view would be less for motorists on major travel routes and other locations where the project would be seen for short or intermittent periods. Duration becomes greater when the project may be seen regularly and repeatedly, with the viewer facing the project for an extended period of time.

4.3.2.2 Project Impacts

The following describes the potential impacts related to aesthetics that could result from implementation of the proposed project. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) are differentiated where appropriate.[7]

Threshold 4.3.1: Substantially or Completely Block Public Views of Identified Scenic Resources. Scenic resources may consist of unique topographic, geologic, landscape, or built-environment features and include limited or expansive views of such resources. A scenic vista is generally defined as a publicly accessible vantage point that provides expansive or panoramic views. Cities may also recognize scenic corridors as being locally significant. Scenic corridors are considered a defined area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or a series of points along a linear transportation route. Public view corridors are areas in which short-range, medium-range, and long-range views are available from publicly accessible viewpoints (e.g., from city streets).

There are no officially designated scenic vistas in San Rafael; however, the General Plan identifies the following natural and built environment (i.e., architectural or historic) resources as visually significant, to the extent they are visible from public streets, parks, and public pathways:

- **Mountains and Hillsides:** Scenic views to short- and long-range ridgelines and hillside open space include those of Mount Tamalpais, San Rafael Hill, San Pedro Ridge, and Big Rock Ridge.
- **San Pablo Bay and San Rafael Bay and Bay Wetlands:** San Pablo Bay and San Rafael Bay are prominent natural features on the eastern edge of San Rafael, providing wetlands, extensive wildlife habitat, and open space.
- **Offshore Islands:** Several offshore islands serving as wildlife habitat are visible from higher elevations and limited shoreline areas in San Rafael.
- **Mission San Rafael Arcangel:** The bell tower of the Mission San Rafael Arcangel is located in Downtown San Rafael and visible from some downtown locations, adjacent hillsides, and limited portions of Interstate 580 (I-580) and US-101.
- **Marin Civic Center:** The Marin Civic Center, designed by renowned architect Frank Lloyd Wright, is a prominent historic structure.

[7] Although this analysis discusses the potential impacts of Phase 1 and Phase 2 development as projected to occur in the years 2025 and 2040, respectively, it is acknowledged that potential development could be accelerated or slowed, depending on market conditions. Therefore, to be conservative, this analysis considers the impact of project operations at full buildout as a singular phase.

- **San Rafael Canal:** The San Rafael Canal is a defining water feature to the east of Downtown San Rafael. Several marinas, walking paths, parks, homes, and businesses are adjacent to the canal.

The project site is not located near San Pablo Bay, San Rafael Bay, the bay wetlands, the offshore islands, Mission San Rafael Arcangel, or the San Rafael Canal, and none of these visually significant resources are visible from the project site or surrounding areas. The Marin Civic Center is approximately 0.5 mile east of the project site but is not visible from the project site or surrounding areas due to intervening development, topography, and mature trees. As discussed above in Section 4.3.1, Setting, surrounding hillsides and mountains (including Mount Tamalpais, San Rafael Hill, and San Pedro Ridge) are visible in the background from the project area; however, views are intermittently or largely obstructed by existing development and mature trees and therefore are not considered to be expansive from any given public vantage point or of such high quality as to constitute a scenic vista. Potential impacts to existing visually significant resources are discussed below for both Phase 1 and Phase 2. Figures 4.3-5 through 4.3-10, which are provided at the end of this subsection, depict the changes in the visual conditions from each of the viewpoints discussed in Section 4.3.1.5, Views of the Project Site, and each figure includes the existing condition, Phase 1 conditions, and Phase 2 (buildout) conditions.

Phase 1 Impacts: As detailed in Chapter 3.0, Project Description, Phase 1 would generally include the demolition of the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building, and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units. "Residential 1" would be located at the southwest corner of the project site and would contain approximately 96 residential units in a five-story building that would contain four levels of residential use over ground-level parking for an overall height of 60 feet. Elevator penthouses and other projections would reach 75 feet in height. "Residential 2" would contain a total of approximately 100 residential units in 15 three-story townhome buildings, with a height of 35 feet. "Residential 3" would contain a total of approximately 280 residential units in a six-story building. A seven-level parking structure with one level of underground parking would also be located at the center of Residential 3, for an overall height of 68 feet. Elevator penthouses and other projections would reach 80 feet in height. "Residential 4" would contain a total of approximately 446 residential units within a seven-story building with an overall height of 78 feet. Elevator penthouses and other projections would reach 90 feet in height. Changes to the viewshed resulting from implementation of Phase 1, which are shown on Figures 4.3-5 through 4.3-10, are discussed below:

- **Views from the North, Intersection of Las Gallinas Avenue and Del Presidio Boulevard (Viewpoint 1, Figure 4.3-5):** Views of the project site from the intersection of Las Gallinas Avenue and Del Presidio Boulevard (located at the northwestern corner of the project site) and looking south towards the project site are of surface parking and the Macy's and Mall Shops West buildings. Surrounding one- to three-story commercial uses are visible in the foreground as well as mature street trees that partially obstruct middleground views of the surrounding hillsides. As described above, the hillside to the east of the project site is the main scenic resource visible from Viewpoint 1. Retail uses located along the northern boundary of the project site would be the most visible existing improvements in the

foreground of the project site, as opposed to the Macy's building and surface parking under the existing condition. The proposed retail buildings would slightly obscure the hillsides east of the project site that are visible in the middleground; however, the resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible with implementation of Phase 1, as shown on Figure 4.3-5. The proposed residential buildings included in Phase 1 (Residential 1, 2, 3, and 4), which would range from 35 to 90 feet in height, would not be visible from this viewpoint. Therefore, implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the intersection of Las Gallinas Avenue and Del Presidio Boulevard, a public roadway.

- **Views from the North, Manuel T. Freitas Parkway Overpass (Viewpoint 2, Figure 4.3-6):** Views of the project site from the elevated Manuel T. Freitas Parkway Overpass of US-101 north of the site and looking southwest towards the project site are of the Macy's building. No other portion of the project site is visible due to intervening one- to three-story commercial development and mature trees. Views beyond the site of surrounding hillsides are generally available in the middleground, and views of Mount Tamalpais are available in the distant background but are partially obstructed due to existing development, intervening topography, and mature trees. As described above, the hillsides to the south and west of the project site are the main scenic resources visible from Viewpoint 2. With implementation of Phase 1, the Macy's building would still be visible, in addition to new multi-family residential buildings located southeast of Macy's. Two of the proposed multi-family residential buildings—Residential 1 and 4—would extend up to a maximum of 60 feet and 90 feet in height, respectively, would be taller than existing uses, and would slightly obscure the already only partially visible hillsides south of the project site. The resulting viewshed, however, would be similar to existing conditions, and the hillside and Mount Tamalpais would continue to be visible in the middleground and background with implementation of Phase 1 as shown on Figure 4.3-6. Therefore, implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the north at the Manuel T. Freitas Parkway Overpass, a public roadway and sidewalk.

- **Views from the East, Civic Center Drive (Viewpoint 3, Figure 4.3-7):** Views of the project site from Civic Center Drive, just east of US-101 and approximately 0.15 mile east of the project site and looking west towards the project site, are of the Macy's, Mall Shops East, and Century Theatre buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees that partially obstruct views of the distant surrounding hillsides in the background. As described above, the hillsides to the west and south of the project site are the main scenic resources visible from Viewpoint 3. With implementation of Phase 1, Macy's would still be visible, in addition to Residential 4, which would be a maximum of approximately 90 feet in height, located southeast and southwest of Macy's that would replace the existing Mall Shops East and Century Theatre. The proposed residential buildings would be taller than existing uses and would slightly obscure the already only partially visible hillsides south of the project site in the middleground and background; however, the resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible with implementation of Phase 1 as shown on Figure 4.3-7. Therefore,

implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the east at Civic Center Drive, a public roadway.

- **Views from the East, Merrydale Road Overpass (Viewpoint 4, Figure 4.3-8):** Views of the project site from the elevated Merrydale Road Overpass of US-101, east of the site and looking west towards the project site are of the Macy's and Mall Shops East buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees that partially obstruct views of the surrounding hillsides in the middleground and background. As described above, the hillsides to the west of the project site would be the main resource visible from Viewpoint 4. Macy's would still be visible, and the proposed Residential 4 building would replace the existing Mall Shops East. The proposed Residential 4 building would be a maximum of approximately 90 feet in height, would be taller than existing uses, and would slightly obscure the hillsides west of the project site in the middleground; however, the resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible with implementation of Phase 1, as shown on Figure 4.3-8. Therefore, implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the east at the Merrydale Road Overpass, a public roadway.

- **Views from the South, Hartzell Park (Viewpoint 5, Figure 4.3-9):** Views of the project site from Hartzell Park, south of the site and looking north towards the project site are limited and largely obstructed by mature vegetation. From this vantage point, views are of the existing RH Outlet building and surface parking. Surrounding one- to five-story commercial uses are visible as well as mature trees, which partially obstruct views of the distant surrounding hillsides in the background. As described above, the hillsides in the background to the north and west of the project site are the main scenic resource visible from Viewpoint 5. The RH Outlet building would be replaced with new commercial and multi-family residential development. Viewpoint 5 is at a higher elevation than the project site and looks down at the project site. While the proposed residential buildings would be taller than the existing buildings on the project site, the new buildings would be similar in scale and height to existing uses when viewed from this vantage point and would not significantly further obscure views of the hillsides northwest of the project site. Due to distance, elevation differences, intervening vegetation, and the similarity of the proposed development with surrounding existing uses, the proposed project would blend with the existing surrounding development when viewed from Viewpoint 5. In particular, the visible portions of the proposed project, which includes the rooftops and rooftop equipment, would be similar to the visible portions of the existing buildings on the project site and surrounding buildings. The resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible in the background with implementation of Phase 1 as shown on Figure 4.3-9. Therefore, implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the south at Hartzell Park, a public park.

- **Views from the South, Nova Albion Way (Viewpoint 6, Figure 4.3-10):** Views of the project site from Nova Albion Way, a residential street located south of the project site, looking

north towards the project site are largely obstructed due to existing mature trees and single-family residential units, but small portions of RH Outlet are visible in the middleground. Viewpoint 6 is representative of a public street within a residential development, and therefore reasonably represents the view for residents that have visibility of the project site. As described above, the hillsides to the north of the project site visible in the background are the main scenic resource visible from Viewpoint 6.The RH Outlet would be replaced with new multi-family residential development. The new buildings, Residential 3 and 4 in particular would be a maximum of approximately 68 feet and 90 feet, respectively, in height and would be partially visible within the middleground zone above existing vegetation and residential development, but views of the site would be largely obstructed by existing vegetation and residences. The resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible with implementation of Phase 1 as shown on Figure 4.3-10. The new buildings included in the proposed project would not significantly further obscure views of the hillsides north of the project site in the background. Therefore, implementation of Phase 1 of the proposed project would not have a substantial effect on scenic resources as viewed from the south at Nova Albion Way, a public roadway within a residential area.

Phase 2 Impacts: As detailed in Chapter 3.0, Project Description, Phase 2 would generally include the demolition of the 254,015-square-foot Macy's building and 79,051-square-foot Kohl's building, and the construction of up to 55,440 square feet of new commercial space and up to 500 additional residential units. Phase 2 of the proposed project would include two new residential buildings that would contain a total of 500 residential units within two apartment-style buildings, each on their own parcel. "Residential 5" would contain a total of approximately 251 residential units in a five-story building. A six-level parking structure would also be located at the center of Residential 5 for an overall height of 60 feet. Elevator penthouses and other projections would reach 75 feet in height. "Residential 6" would contain a total of approximately 249 residential units in a seven-story building, 15 of which would be affordable. A five-level parking structure would also be located at the southwest corner of Residential 6 for an overall height of 78 feet. Elevator penthouses and other projections would reach 90 feet in height. Proposed views resulting from implementation of Phase 2, which are shown on Figures 4.3-5 through 4.3-10, are discussed below:

- **Views from the North, Intersection of Las Gallinas Avenue and Del Presidio Boulevard (Viewpoint 1, Figure 4.3-5):** Views of the project site from the intersection of Las Gallinas Avenue and Del Presidio Boulevard, located at the northwestern corner of the project site and looking south towards the project site, are of surface parking and the Macy's and Mall Shops West buildings. Surrounding one- to three-story commercial uses are visible in the foreground as well as mature street trees that partially obstruct middleground views of the surrounding hillsides. As described above, the hillside in the middleground to the east of the project site would be the main resource visible from Viewpoint 1. Views at buildout of Phase 2 would be similar to Phase 1 but would include additional commercial development in foreground views and Residential 5, which extends up to a maximum of 60 feet in height, that would be visible behind the new commercial development. Residential 5 would be taller than existing uses and would further obstruct middleground views of the hillside east of the project site. However, the hillside would continue to be visible with implementation

of Phase 2, and the resulting viewshed would be similar to existing conditions as shown on Figure 4.3-5. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the intersection of Las Gallinas Avenue and Del Presidio Boulevard, a public roadway.

- **Views from the North, Manuel T. Freitas Parkway Overpass (Viewpoint 2, Figure 4.3-6):** Views of the project site from the elevated Manuel T. Freitas Parkway Overpass of US-101, north of the site and looking southwest towards the project site, are of the Macy's building. No other portion of the project site is visible due to intervening one- to three-story commercial development and mature trees. Views beyond the site of surrounding hillsides are generally available in the middleground, and views of Mount Tamalpais are available in the distant background but are partially obstructed due to existing development, intervening topography, and mature trees. As described above, the hillsides to the south and west of the project site would be the main resource visible from Viewpoint 2. At buildout of Phase 2, views of Macy's would be replaced with new commercial buildings and Residential 5. Residential 6 would also be developed north of the residential buildings visible from Viewpoint 2 in Phase 1. Both Residential 5 and 6, which would be a maximum of approximately 60 and 90 feet in height, would be taller than existing uses and would further obscure views of the hillsides visible in the middleground south of the project site. The resulting viewshed, however, would be similar to existing conditions. The hillsides in the middleground would continue to be visible with implementation of Phase 2, and no obstruction of Mount Tamalpais in the distant background would occur, as shown on Figure 4.3-6. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the north at Manuel T. Freitas Parkway Overpass, a public roadway and sidewalk.

- **Views from the East, Civic Center Drive (Viewpoint 3, Figure 4.3-7):** Views of the project site from Civic Center Drive, just east of US-101 and approximately 0.15 mile east of the project site looking west toward the project site are of the Macy's, Mall Shops East, and Century Theatre buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees that partially obstruct views of the distant surrounding hillsides in the background. As described above, the hillsides to the west and south of the project site would be the main resource visible from Viewpoint 3. At buildout of Phase 2, views of Macy's would be replaced with new commercial buildings and residential. Residential 6 would also be developed north and east of the residential buildings visible from Viewpoint 3 in Phase 1. Both Residential 5 and Residential 6, which would be a maximum of approximately 60 and 90 feet, respectively, in height, would be taller than existing uses and would further obscure views of the hillsides in the middleground west and south of the project site. However, the resulting viewshed would be similar to existing conditions, and the hillsides would continue to be visible with implementation of Phase 2 as shown on Figure 4.3-7. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the east at Civic Center Drive, a public roadway.

- **Views from the East, Merrydale Road Overpass (Viewpoint 4, Figure 4.3-8):** Views of the project site from the elevated Merrydale Road Overpass of US-101, east of the site and looking west towards the project site are of the Macy's and Mall Shops East buildings. Surrounding one- to five-story commercial uses are visible as well as mature trees that partially obstruct views of the surrounding hillsides in the middleground and background. As described above, the hillsides to the west of the project site would be the main resource visible from Viewpoint 4. At buildout of Phase 2, views of Macy's would be replaced with new commercial buildings and Residential 5. The Residential 5 building would be a maximum of approximately 60 feet in height, would be taller than existing uses, and would further obscure middleground views of the hillsides west of the project site. However, the resulting viewshed would be similar to existing conditions, and the hillsides would continue to be visible with implementation of Phase 2 as shown on Figure 4.3-8. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the east at the Merrydale Road Overpass, a public roadway.

- **Views from the South, Hartzell Park (Viewpoint 5, Figure 4.3-9):** Views of the project site from Hartzell Park, south of the site and looking north towards the project site are limited and largely obstructed by mature vegetation. From this vantage point, views are of the RH Outlet building and surface parking. Surrounding one- to five-story commercial uses are visible as well as mature trees that partially obstruct views of the distant surrounding hillsides in the background. As described above, the hillsides to the north and west of the project site would be the main resource visible from Viewpoint 5. At buildout of Phase 2, commercial development visible from Viewpoint 5 at the northern end of the project site would be replaced with Residential 6. New buildings in Phase 2 would be similar in height and mass to Phase 1 and would not significantly alter existing views or obscure background views of the hillsides north and west of the project site. The resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible with implementation of Phase 2 as shown on Figure 4.3-9. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the south at Hartzell Park, a public park.

- **Views from the South, Nova Albion Way (Viewpoint 6, Figure 4.3-10):** Views of the project site from Nova Albion Way, a residential street located south of the project site, looking north towards the project site are largely obstructed due to existing mature trees and single-family residential units, but small portions of the RH Outlet building are visible in the middleground. Viewpoint 6 is representative of a public street within a residential development and therefore reasonably represents the view for residents that have visibility of the project site. As described above, the hillsides to the north of the project site would be the main resource visible from Viewpoint 6. The buildout of Phase 2 would not result in any significant visual changes from Viewpoint 6 compared to the buildout of Phase 1. The resulting viewshed would be similar to existing conditions, and the hillside would continue to be visible in the background with implementation of Phase 2 as shown on Figure 4.3-10. Therefore, implementation of Phase 2 of the proposed project would not have a substantial effect on scenic resources as viewed from the south at Nova Albion Way, a public roadway within a residential area.

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Viewpoint 1 - Existing

Viewpoint 1 - Proposed Project Simulation, Phase 1

Viewpoint 1 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-5

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR
Viewpoint 1:
Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Viewpoint 2 - Existing

Viewpoint 2 - Proposed Project Simulation, Phase 1

Viewpoint 2 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-6

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR
Viewpoint 2:
Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Viewpoint 3 - Existing

Viewpoint 3 - Proposed Project Simulation, Phase 1

Viewpoint 3 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-7

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR
Viewpoint 3:
Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Viewpoint 4 - Existing

Viewpoint 4 - Proposed Project Simulation, Phase 1

Viewpoint 4 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-8

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR
Viewpoint 4:
Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Viewpoint 5 - Existing

Viewpoint 5 - Proposed Project Simulation, Phase 1

Viewpoint 5 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-9

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR

Viewpoint 5:

Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Viewpoint 6 - Existing

Viewpoint 6 - Proposed Project Simulation, Phase 1

Viewpoint 6 - Proposed Project Simulation, Phase 2

LSA

FIGURE 4.3-10

Viewpoint locations are depicted on Figure 4.3-1

Northgate Mall Redevelopment Project EIR
Viewpoint 6:
Existing and Proposed Project (Phase 1 and 2) Visual Simulations

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Conclusion. Phase 1 and Phase 2 (buildout) would result in an increase in density and intensity of uses at the project site that would partially further obstruct already limited views of surrounding hillsides and mountains, including San Pedro Ridge to the east and San Rafael Hill to the south. However, as shown on the visual simulations completed for the proposed project (Figures 4.3-5 through 4.3-10), intermittent views of surrounding hillsides and mountains would still be available from all six representative viewpoints that depict publicly accessible views of the project site. Furthermore, because hillside views are already obstructed under existing conditions, existing views from the project site and surrounding areas are not considered to be of such high quality as to constitute a scenic vista. The General Plan encourages greater development intensity in a limited number of locations that support the goal of a more sustainable, less auto-oriented city, which includes portions of North San Rafael and the Northgate Mall. Because the proposed project would occur in an existing urban, developed area that is currently underutilized, the intensification of development on the project site would have a lesser impact on scenic vistas compared to new development in a previously undeveloped or sparsely developed area.

Additionally, the proposed project is undergoing design review prior to project approval pursuant to San Rafael Municipal Code Chapter 14.25, Major Environmental and Design Review Permits, as necessary. The design review process serves to preserve and enhance views from other buildings and public property (see San Rafael Municipal Code Section 14.25.010, Specific Purposes), thereby reducing the potential for new development to block public views of significant visual resources. The design review criteria include consistency with the various planning documents that govern scenic quality in San Rafael, including the Design Guidelines and the Promenade Conceptual Plan.

Overall, although the proposed project would result in an increase in intensity of development at the project site and an increase of building heights, the proposed development would not substantially or completely block public views of identified scenic resources. Therefore, the proposed project would not have a substantial adverse effect on views of scenic resources and vistas, and impacts would be **less than significant.**

Threshold 4.3.2: Substantially Damage Scenic Resources, Including Those Within a State Scenic Highway. As described in Section 4.3.1.3, Visual Character of the Surrounding Area, there are no State-designated Scenic Highways within, or in the vicinity of, the project site. The nearest eligible State Scenic Highways include State Route 37 (SR-37) and US-101 in Novato, both of which are located approximately 5 miles north of the project site. The nearest officially designated State Scenic Highway is I-580 in Oakland, which is located approximately 19.4 miles southeast of the project site. Due to distance, the project site is not visible from any of these highways. Therefore, implementation of the proposed project would not damage existing scenic resources within a State Scenic Highway, and **no impact** would occur.

Threshold 4.3.3: Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality. The project site is located within an urbanized area. Development of the proposed project would alter the visual character of the project site through the demolition of existing structures, construction of new buildings and associated improvements, and intensification of existing land uses. The proposed project would be developed in two phases, and at full buildout would include a

total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units. The proposed project would also include various associated site improvements, including a town square, modifications to the internal circulation and parking, and improvements to infrastructure and landscaping.

As discussed previously, the proposed project would result in the construction of new structures that would be a maximum of seven stories in height, which would be taller than the existing structures on site and surrounding the project site that are generally one to five stories in height. The project sponsor is requesting to use the density bonus to modify the development standards for height on the project site to increase the height limit from 36 feet to 90 feet. The City allows a density bonus in exchange for providing a certain percentage of affordable units, and the project sponsor proposes the development of up to 147 affordable units. Therefore, the proposed increase in building height would not conflict with applicable zoning or other regulations governing scenic quality. Although the proposed project would increase the intensity and density of development at the project site, the proposed land uses would remain consistent with existing surrounding land uses, which would ensure the proposed project would maintain a complimentary visual relationship with development surrounding the project site.

In addition, as discussed above under Threshold 4.3.1, although development of Phase 1 and Phase 2 would result in an increase in density and intensity of uses at the project site that would partially further obstruct already limited views of surrounding hillsides and ridgelines, intermittent views of surrounding short- and long-range hillsides and ridgelines would still be available from all six representative viewpoints that depict publicly accessible views of the project site. Additionally, because the proposed project would occur in an existing urban, developed area that is currently underutilized, the intensification of development on the project site would have a lesser impact on short- and long-range ridgelines compared to new development in a previously undeveloped or sparsely developed area.

As discussed in Chapter 3.0, Project Description, the project site would be rezoned to the Planned Development (PD) District as part of the proposed project. The PD District establishes a procedure for the development of large lots of land in order to reduce or eliminate the rigidity, delays, and conflicts that otherwise would result from application of zoning standards and procedures designed primarily for small lots. The PD District encourages innovative design on large sites by allowing flexibility in property development standards and accommodates various types of large-scale, complex, mixed-use, and phased developments. The PD zoning designation allows flexible design standards that are more responsive to site conditions as well as the transfer of allowable General Plan and zoning density between contiguous sites under common ownership.

Additionally, the proposed project requires an Environmental and Design Review Permit and Master Signage Program. These processes are underway and would ensure that the proposed project meets all guidelines, standards, and objectives related to building design and aesthetics. Also evaluated in this process is a proposed project design's compatibility with or appropriateness for its surroundings. The development review process relies on the goals, policies, and programs in the General Plan, ordinances in the San Rafael Municipal Code, and additional regulations governing scenic quality included in the Design Guidelines and the Promenade Conceptual Plan. As a result of regulations built into the PD District and conformance with the design review process, the proposed

project would not conflict with the visual quality-related policies and programs set forth in the San Rafael General Plan or impede attainment of a complimentary visual relationship between the proposed project and existing and planned development surrounding the site, the project area's overall topography, or short-range and long-range ridgelines. Therefore, impacts would be **less than significant**.

Threshold 4.3.4: Create a New Source of Light or Glare. The project site is located in an urban area with a variety of existing light sources, including street and parking area lights, interior and exterior building lighting, and light associated with traffic on nearby roadways (including US-101, Las Gallinas Avenue, Manuel T. Freitas Parkway, Merrydale Road, and Northgate Drive). The proposed project would result in an increase in building intensity and density at the project site, which would introduce new sources of light and glare to the area in the form of new windows, new interior lighting, new exterior safety and security lighting, and shifts in the timing of automobile presence (although overall vehicle trips would be reduced compared to the baseline shopping mall use). The proposed project would also result in an increase in building height at the project site to 90 feet. The majority of the parking supply for the proposed project would be provided in parking structures, resulting in a decrease in surface parking spaces at the project site compared to existing baseline conditions which assume full occupancy of the existing mall; therefore, windshield and window glare would be reduced due to the reduction in large expanses of surface parking lots.

The City's Municipal Code Section 14.16.227, Light and Glare, regulates the type of colors, materials, and lighting to avoid creating undue off-site light and glare impacts. New or amended building or site colors, materials, and lighting would be required to comply with the standards, subject to review and recommendation by the police department, public works department, and community development department. These processes are underway independent of the environmental review process and would ensure that the proposed project meets all guidelines, standards, and objectives related to lighting. Further requirements include discouraging use of reflective or glossy materials, the shielding of light fixtures and minimization of foot-candle intensity to minimize impacts on adjacent development, and compatibility with on-site and off-site light sources.

Additionally, Section 14.18.170, Lighting, of the San Rafael Municipal Code states that lights provided to illuminate any parking facility or paved area shall be designed to reflect away from residential use and motorists. It is the intent to maintain light standards in a low-profile design, as well as to be compatible with the architectural design and landscape plan. Light fixtures (e.g., pole and wall-mount) should be selected and spaced to minimize conflicts with tree placement and growth. Section 14.19.055, Illumination Standards, of the Municipal Code restricts the type of signs that may be permitted and minimizes the allowance of signs illuminated by an artificial source so as to influence light and glare on adjacent properties. Section 14.19.055 outlines specific design criteria and restrictions for these signs, including an outline of which types of illuminated signs are prohibited within the city limits.

In accordance with General Plan Program CDP-4.11A: Lighting Plans, the project sponsor has prepared and submitted a Lighting Plan that will be reviewed as part of the design review process to ensure consistency with dark sky objectives and reduce negative impacts on nearby properties. The General Plan goals, policies, and programs also require reducing light and glare spillover from future development to surrounding land uses by buffering or shading new development.

Overall, although the proposed project would result in an increase in intensity of lighting and glare at the project site, the project site and surrounding areas are already developed and contribute to nighttime illumination and glare under existing conditions, and the proposed project would generally be consistent with existing surrounding uses. While the height and mass of the new buildings would make light from the project site noticeable from off-site locations, it would be absorbed into the overall lighting patterns that already exist in the area. In particular, existing nighttime lighting would blend in with existing lighting from the buildings west of the project site along Thorndale Drive, which would be higher in elevation than any of the proposed residential buildings. Additionally, the proposed project would be subject to various Municipal Code and General Plan requirements that would minimize potential impacts related to light and glare that may result from the increase in intensity at the project site. As such, implementation of the proposed project would not create a source of light and glare that would substantially or adversely affect day or nighttime views in the area, and this impact would be **less than significant**.

Threshold 4.3.5: Create New Shadows Affecting Open Spaces. Existing buildings on and in the vicinity of the site, particularly the taller five-story commercial, multi-family residential, hotel, and healthcare uses, currently cast shadows onto adjacent structures and properties during certain seasons and times of day. The most prominent shadows are cast around the winter solstice (December 21), typically earlier and later in the day. During these time periods, the days are shorter, the sun is lower on the horizon, and the shadows cast are longer and for a greater duration than during other times of the year. This is generally the nature of the development pattern within existing urbanized areas. The existing mall currently does not cast shade or shadows on any historical resources sensitive to shade or quasi-public park/open space areas. As previously discussed, the nearest open space areas to the project site are the Mt. Olivet San Rafael Cemetery east across Merrydale Road and Hartzell Park located to the south. As noted above, the cemetery has a high point of approximately 90 feet in elevation, which is approximately 50 feet higher than the project site[8] due to the fact that it sits on top of a knoll. Similar to the cemetery, Hartzell Park also sits atop a knoll that extends approximately 160 feet in elevation, which is approximately 120 feet higher in elevation than the project site. Additionally, existing buildings are also separated from most nearby residential areas by existing roadways, including Northgate Drive. Existing shadows cast from the project site onto adjacent properties and structures are therefore currently minimal and typical of an urban environment.

A Shadow Study was prepared to evaluate the potential shadows cast by new buildings on the project site.[9] The results of the Shadow Study indicate that the proposed buildings included in both Phase 1 and Phase 2 of the proposed project would not cast any new shadows on surrounding uses, including the open space areas to the east and south. In particular, during the winter solstice, when shadows are generally the most prominent, new shadows would either be cast on existing or proposed buildings on the project site or the hillside immediately west of the project site. Therefore, impacts would be **less than significant**. Furthermore, the proposed project would not result in any

8 United States Geological Survey (USGS). 2022. TopoBuilder. Website: https://topobuilder.nationalmap.gov/ (accessed July 2023).

9 Merlone Geier Partners. 2023. *Northgate Town Square Shadow Studies.* July 13.

new shadows on the adjacent Terra Linda Valley Neighborhood under any scenario evaluated in the Shadow Study (spring equinox, autumn equinox, summer solstice, or winter solstice).

4.3.2.3 Cumulative Impacts

The geographic area considered for the aesthetic cumulative analysis includes the neighborhoods adjacent to the project site and landscape within the immediate viewshed. The proposed project would have a significant effect on the environment if it would contribute to a significant cumulative impact on visual resources. There are no projects under review by the City in the vicinity of the project site that may impact similar visual resources. Accordingly, the proposed project would not make a cumulatively considerable contribution to any significant cumulative impact to visual resources, and this impact would be **less than significant.** Furthermore, development of proposed on-site uses would be subject to applicable standards, regulations, and design guidelines to create a visually consistent and cohesive pattern of development. It is anticipated that other development in San Rafael as assumed under the General Plan would equally be subject to these regulations. Because the proposed project and other cumulative development projects would be subject to the City's design review process, it is reasonable to conclude that each project will be conditioned to fully comply with the specific siting, design, and improvement requirements established in its respective zoning district or Specific Plan. As with the proposed project, as each cumulative project incorporates the appropriate City-required conditions, it is reasonable to conclude its project-specific impacts would be similarly reduced to ensure that significant impacts would not occur.

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4.4 CULTURAL RESOURCES

This section describes existing cultural resource conditions within the project site and vicinity, identifies potentially significant impacts to such resources that may result from development of the proposed project, and recommends mitigation measures to reduce the severity of potentially significant impacts. Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for their historical significance. Examples of cultural resources include precontact (Native American) and historic-period archaeological sites, and historic buildings and bridges of architectural significance. The California Environmental Quality Act (CEQA) requires agencies that are considering projects subject to discretionary action to consider the potential impacts on cultural resources that may occur from project implementation (see Section 15064.5 and Appendix G of the *State CEQA Guidelines*). Section 4.5, Tribal Cultural Resources, of this Environmental Impact Report (EIR) addresses the topic of tribal cultural resources.

In addition to the references listed in this section, an Archaeological Resources Inventory Report (Archaeological Report)[1] and Historical Resource Evaluation (HRE)[2] were prepared by the project sponsor's consultant for the built environment and potential archaeological resources located within the project site. The Archaeological Report and HRE were used in the analysis provided in this section and are included as Appendices B and C, respectively. The Archaeological Report and HRE were peer reviewed by LSA before being relied on for this EIR.[3,4,5]

4.4.1 Setting

To characterize the setting for cultural resources at the project site, the following tasks were completed: (1) record searches were conducted at the Northwest Information Center (NWIC) and local historical archives; (2) a field survey was completed to identify cultural resources; and (3) the Northgate Mall and adjacent Terra Linda Valley neighborhood were evaluated to determine their eligibility for listing in the California Register of Historical Resources (California Register). The results of these tasks are summarized below. This section also includes an overview of the applicable regulatory context related to cultural resources.

4.4.1.1 Records Searches

The results of the records searches at the NWIC and local historical archives are discussed below.

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1 Dudek. 2022a. *Archaeological Resources Inventory Report for the Northgate Town Square Project, City of San Rafael, California.* February 7.

2 Dudek. 2022b. *Final Built Environment Inventory and Evaluation Report, Northgate Town Square Project, San Rafael, California.* September.

3 LSA Associates, Inc. 2022a. *Peer Review of an Archaeological Resources Inventory Report prepared by Dudek for the Northgate Town Square Project in San Rafael, Marin County, California (LSA Project No. CSR2001.03).* January 19.

4 LSA Associates, Inc. 2022b. *Peer Review of the March 2022 Built Environment Inventory and Evaluation Report, Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No. CSR2001.03)*. April 14.

5 LSA Associates, Inc. 2023. *Built Environment Inventory and Evaluation Report Response Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No. CSR2001.03)*. April 19.

Northwest Information Center. The NWIC records search was conducted on October 12, 2021. The NWIC, an affiliate of the State of California Office of Historic Preservation (OHP), is the official State repository of cultural resource records and reports for Marin County. The NWIC database indicates there are no recorded cultural resources at, nor are there any previous studies of, the project site. There have been 60 previous studies (including their addendums and supplemental reports) that have been prepared within a 0.5-mile radius of the project site. There are five recorded cultural resources located within the 0.5-mile radius. Of these resources, two are prehistoric sites that include bedrock milling and habitation debris, and three are historic resources, including the Mt. Olivet San Rafael Cemetery, Northwestern Pacific Railroad, and Marin Center Veterans Memorial Auditorium.

Local Historical Archives. The following local history archives were also reviewed or consulted to obtain information on the historical context of the Northgate Mall: the Marin County Recorder; the San Rafael Community Development Department's online records; the Marin History Museum; San Rafael Heritage; the California Room of the Marin County Free Library; the University of California Berkeley's Environmental Design Archives; the Cultural Landscape Foundation; the University of Pennsylvania Stuart Weitzman School of Design Architectural Archives; and historical newspapers, maps, and aerial photographs. A synthesis of the information obtained about the Northgate Mall is presented in the HRE included in Appendix C and in the historical context provided below in Section 4.4.1.4.

4.4.1.2 Field Survey

A qualified architectural historian and qualified archaeologist conducted field reviews at the project site. The findings of the field surveys are discussed below.

Historical Architectural Survey. A qualified architectural historian conducted a field review of the Northgate Mall on October 19, 2021. The survey entailed walking the property and documenting it with notes and photographs. Specific note was taken of character-defining features, spatial relationships, observed alterations, and any historic landscape features on the project site. Three buildings within the Northgate Mall were determined to be over 45 years old.

Additionally, qualified architectural historians conducted a combination windshield and reconnaissance-level survey of the Terra Linda Valley neighborhood for historic built resources on October 26, 2021. The survey entailed a windshield survey of the entire neighborhood, documenting it with notes and photographs and accounting specifically for character-defining features, spatial relationships, observed alterations, and any historic landscape features observed to be common throughout the neighborhood. Following completion of the windshield survey, the reconnaissance-level survey entailed a more intensive survey from the public right-of-way, documenting representative examples of homes from the neighborhood with photographs and notes. The Terra Linda Valley neighborhood was determined to have been built between 1959 and 1960.

Archaeological Survey. A qualified archaeologist conducted a pedestrian archaeological survey of the project site on October 25, 2021. In addition to visual identification of any potential archaeological resources, exploratory trenches were dug in bare soils with hand tools. The project site is fully developed; only the landscaped islands in the parking lot are areas with exposed soil.

These areas were surveyed for any cultural material. Parking areas were also surveyed for any exposed areas in the asphalt. The interior of the mall and other building interiors were not surveyed because these areas contain no ground visibility. Development has resulted in substantial disturbance on the project site. However, there is some potential for existing development, notably parking areas, to have capped and preserved native soils at depth. No archaeological cultural resources were identified within the project site.

4.4.1.3 Geomorphology

The topography of Marin County consists of north-to-northwest-trending mountain ranges and intervening valleys that are characteristic of the Coast Range geomorphic province. The underlying geology is composed primarily of Franciscan complex rock bounded on the east by the Hayward Fault and on the west by the San Andreas Fault. The Franciscan rocks are formed by pieces of former oceanic crust that have been accreted to North America by the subduction and collision of the North American and Pacific Plates. These rocks are primarily marine sandstone and shale. However, chert and limestone are also found within the assemblage.

The Marin County landscape has been subject to substantial change since the Late Pleistocene. Between 15,000 and 9,000 years ago, sea levels rose approximately 230 feet, resulting in the initial infilling of San Francisco Bay. Over time, stream and river channels were diverted by sediments, resulting in the creation of large alluvial floodplains like the San Pablo Peninsula. The Bay continued to grow in size over the last 4,000 years, allowing the formation of large tidal mudflats and peat marshes, further promoting the deposition of sediment around the Bay. By approximately 3,500 years ago, the Bay was 22 feet below its current level. Landforms became more stable after approximately 2,800 years ago, after which there was less comparative deposition of alluvial sediments. Radiocarbon dates taken from the Palo Alto Marsh and lower Colma Creek suggest that these were formed in the last 2,000 years.

The landform on the project site is comprised of Urban land-Xerorthents complex, 0 to 9 percent slopes, which is normally associated with valley floors that have been highly developed. Historically, a drainage to South Fork Creek passed through the project site. The project site is fairly level, consisting of slopes ranging from 0 to 9 percent. Based on review of this information and notwithstanding its disturbed context, the flat topography and proximity to a drainage indicates the project site would be well suited to support the formation or continued presence of buried archaeological deposits or surface manifestations, but most or all of these would have been disrupted by extensive excavation from the west side of the site and fill on the east side, beginning in 1957, to construct the Northgate Mall. See Section 4.6.1.1, Geologic Conditions.

4.4.1.4 Prehistoric and Historical Background

The prehistoric and historical context of the project area is discussed below.

Marin County. Studies and analysis of archaeological materials uncovered in the San Francisco Bay Area (Bay Area) indicate that native peoples have occupied the Bay region for over 11,000 years. At the time of the European settlement in the Bay Area, San Rafael was part of the Coast Miwok territory. The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about

which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near freshwater sources and in ecotones where plant life was diverse and abundant.

It is believed that members of the Coast Miwok were the Native Americans who met with both Sir Francis Drake and Sebastian Rodriguez Cermeño during their voyages to California. After those two contacts, there were no recorded contacts with the Coast Miwok for nearly 200 years until the construction of the San Francisco Presidio and Mission Dolores in 1776. The present-day territory of Marin County was first encountered by Spanish Lieutenant Juan de Ayala in 1775 when he led a military reconnaissance expedition into the San Francisco Bay.

Post-contact history for the State is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period began with the establishment of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848 (ending the Mexican-American War) signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769–1822). Despite early exploration of the San Francisco Bay by British explorer Sir Francis Drake, the present-day territory of Marin County was first encountered by Spanish Lieutenant Juan de Ayala in 1775 when he led a military reconnaissance expedition into the San Francisco Bay Area. Beyond exploration, a major emphasis during the Spanish Period in California was the construction of missions and associated presidios to convert the Native American population to Christianity and integrated communal enterprise. Mission San Francisco de Asís, commonly known as Mission Dolores, was established in San Francisco in 1776. By the early 19th century, the high rate of death among the Native American neophytes at Mission Dolores prompted a provisional move across the Bay to what was believed to be a more beneficial climate on a site within the modern city of San Rafael. Initial settlers to this new area indicated that the move was advantageous for the Native American population, which prompted the establishment of Mission San Rafael Arcángel in 1817.

Outside of the mission sites, several factors kept growth within Alta (Upper) California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. In 1783, Pedro Fages served as the fifth Governor of Alta California and was given permission from the King of Spain to make land grants in California as an incentive to settlers to form pueblos or towns. The majority of these Spanish-era land grants were presented to Spanish military officers following the conclusion of their life-long military service.

Mexican Period (1822–1848). After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade and decreed that California ports be open to foreign merchants. In

addition to eliminating the system of Spanish nobility in California, the Spanish missions across the territory were secularized during this period. The secularization of the Spanish Missions meant that all communal mission property was placed in a trust with the intention of being eventually returned to the local Native American population.

Extensive land grants called 'Ranchos' during the Mexican period were established in part to increase the population inland from the more settled coastal areas where the Spanish first concentrated their colonization efforts. During the supremacy of the ranchos in the Mexican Period, landowners largely focused on the cattle industry and devoted large tracts to grazing. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. Land grants to citizens covered the majority of present-day Marin County. The project site forms a portion of the Rancho San Pedro, Santa Margarita Y Las Gallinas granted by Governor Micheltorena to Timothy (Timoteo) Murphy in 1844. Murphy was an Irish immigrant who arrived in Monterey, California in 1828 to oversee the shipment of beef for Hartnell and Company. While there, Murphy became acquainted with General Mariano Vallejo, who not only considered him as a possible son-in-law, but also appointed him the administrator of the now secularized Mission San Rafael Arcángel in 1837.

American Period (1848–Present). Mexican control of California was brief, and the territory became part of the United States following the end of the Mexican-American War with the Treaty of Guadalupe Hidalgo in 1848. This ushered California into its American Period. Marin was designated as one of the 27 original counties of California on February 18, 1850. On September 16, 1850, Marin County had a population of 323 people and was divided into four townships: Bolinas, Novato, San Rafael, and Sausalito.

Prior to California becoming a state in 1850, the discovery of gold in 1848 prompted a massive influx of fortune seekers who steadily flooded into the rural counties throughout Northern California. Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the economy through the 1850s. After the Gold Rush began in Northern California in 1848, cattle were no longer desired mainly for their hides but also as a source of meat and other goods to support the influx of people seeking gold. The mild climate of Marin County became known for its ability to support the production of a wide selection of dairy products, the most desirable of which was butter.

While dairy production continued as the leading industry of the various townships in Marin County, agriculture also benefited from the fertile soil and temperate climate in the valley areas of the county. The principal crops in Marin County consisted of beets, potatoes, grains, and vine fruit. Lumber also formed an early industry in Marin County but became less common by the 1880s. Mining also emerged as an early, but short-lived industry in the county in the mid-19th century with the discovery of copper near Bolinas township in 1863. Speculation about the value of Marin County land rising if a reliable connection to San Francisco could be established encouraged a number of ferry companies. The Sausalito Land and Ferry Company began operations in 1868 and eventually was purchased by the Southern Pacific Railroad.

As Marin County progressed into the 1900s, dairy and agriculture continued as the region's most prominent economic drivers, supporting a general population of 15,702 in 1900. An influx of more than 10,000 refugees from San Francisco reestablished their lives in Marin County following the devastating effects of the 1906 earthquake. This caused the population of Marin County to grow to 25,114 by 1910. During this period, Marin County was still only accessible from San Francisco via ferry. The idea of a bridge across the strait was first proposed in 1916 but did not realistically take hold until the 1920s. Following the end of World War I, new manufacturing jobs throughout the Bay Area prompted the population of Marin County to nearly double from 27,342 residents in 1920 to 52,907 by 1940. During this period, construction on the first bridge connecting Marin County to San Francisco (i.e., the Golden Gate Bridge) was initiated in 1933 and completed in 1937.

The proximity of Marin County to major business and manufacturing centers in San Francisco and the Bay Area caused another population surge following the end of World War II. In 1950, the County maintained a population of 85,619; by 1960, that number had risen to 146,820. This large swell in population was supported by the completion of numerous large-scale "bedroom" residential developments throughout Marin County that sought to provide housing and associated amenities for the burgeoning surplus of Bay Area residents. Population growth in Marin County continued in the ensuing decades, reaching 206,038 by 1970 and 247,289 by 2000. Presently, management occupations, sales occupations, and office and administrative support are the key industries that provide the economic base for Marin County's 262,321 residents.

City of San Rafael. The City of San Rafael began its development with the establishment of the Mission San Rafael Arcángel in 1817. After being appointed the administrator of the now secularized Mission in 1837, Timothy Murphy was granted a section of land adjacent to the Mission in 1839 at the present intersection of Fourth Street and C Street. The adobe residence that Murphy completed on this grant was the first building completed in San Rafael that was not related to the establishment of the Mission. In 1850, San Rafael was named the seat of Marin County, and a town plat was laid out by surveyors Myers and McCullough that consisted of 300-foot square blocks.

The City of San Rafael was incorporated in 1874, 3 years after the Marin County Courthouse building was completed in 1871. In 1875, the narrow-gauge, North Pacific Coast Railroad was completed, providing an ease of travel between Sausalito and Tomales, which had been formerly impeded by the rugged terrain of the country.

The development of San Rafael during the 20th century closely mirrored development patterns found elsewhere in Marin County, which were largely characterized by residential expansion that supported the economic growth in San Francisco and other manufacturing locales in the Bay Area. As transportation corridors such as the Golden Gate Bridge were completed in the early 20th century, San Rafael developed into a bedroom community for these proximate centers of economic activity. Precipitated by growth throughout the Bay Area in the period during and following World War II, the population of San Rafael rose from 13,848 citizens in 1950 to 20,460 citizens by 1960. Census data indicate that the jump in population was supported by the construction of new suburban housing developments along United States Route 101 (US-101) in unincorporated areas of Marin County that were gradually annexed to San Rafael. The rate of growth continued to accelerate

during the 1960s, and the population reached 38,977 citizens by 1970. This suburban expansion prompted the corresponding development of regional commercial centers to support the populations located there. In 1964, the Northgate Mall, an open-air regional shopping mall, was developed to support the growing population of the Terra Linda Valley neighborhood in North San Rafael.

By 2000, San Rafael's population had risen to 56,063 with the majority of open space lots seen in the 1960s infilled with single-family residences, apartment complexes, and commercial properties. As of 2020, the population of San Rafael has remained consistent, with 59,800 people residing in the city who are principally employed in management and professional occupations, sales and related occupations, or customer service occupations.

Both subareas known as the North San Rafael Town Center and Terra Linda are located in North San Rafael, which encompasses the area to the west and east of US-101 north of Puerto Suelo Hill, including the Las Gallinas Valley. The North San Rafael Town Center subarea contains the Northgate Mall, and the Terra Linda subarea contains the Terra Linda Valley neighborhood. North San Rafael was initially developed from rural ranch land owned by the Manuel T. Freitas family, which formed a section of the Rancho San Pedro, Santa Margarita Y Las Gallinas land grant. In the period following World War II, the Freitas Ranch was subdivided into the densely populated mix of suburban residential neighborhoods, commercial shopping centers, and business parks that comprise the area today. The incorporated subareas of North San Rafael include Terra Linda, the North San Rafael Town Center, Mont Marin/San Rafael Park, Rafael Meadows/Merrydale, the Northgate Business Park/Los Gamos, the Marin County Civic Center and Smith Ranch. The unincorporated San Rafael Planning Area subareas include Marinwood-Lucas Valley, Santa Venetia and Los Ranchitos.

The Northgate Mall. The Northgate Mall (i.e., the project site) is located in the North San Rafael Town Center subarea of North San Rafael, a commercial area initially developed in the late 1950s that includes retail, automotive, service, and office uses. The North San Rafael Town Center includes the Northgate Mall at its core along with the Northgate One and the Northgate Three shopping centers. Following the construction of the Emporium building in 1964, the Northgate Mall was expanded in multiple stages over the course of a 46-year development period. In addition to physical redevelopment projects, the property has been referred to by multiple names within its history, including the Northgate Regional Shopping Center, the Northgate Shopping Center, and the Northgate Mall.

Between the 1930s and 1960s, the site of the Northgate Mall was primarily open space. In 1962, the Draper Company announced plans for the construction of a 400,000-square-foot shopping center on the west side of US-101 that would include a 200,000-square-foot branch of the Emporium department store as an anchor store. A newspaper article in the *Daily Independent Journal* in 1962 indicates that a preliminary conceptual design for the open-air regional shopping center was drafted by architect Welton Beckett & Associates and landscape architect Lawrence Halprin. Overall, the property was initially expected to be developed in phases between 1963 and 1969, and it was originally conceptualized to include two department stores and 50 small retail stores and offices clustered around common pedestrian pathways at the interior with parking at the exterior of the site.

The first phase of the property's development began in 1963 with the construction of a 200,000-square-foot Emporium department store at the northwestern corner of the Northgate Mall. Completed in June 1964, the three-story, New Formalist-style building was designed by architect Welton Beckett & Associates and was constructed from reinforced blue-colored, rough-textured, split brick masonry walls with panels of blue-green and yellow ceramic tile. A two-story, columned balcony adorned the northern elevation below a flat cornice that projected out 8 feet from all sides of the building. Consistent with 20th century department store planning, the Emporium building had very few exterior window displays, instead favoring a select few exterior window-box display cases and interior displays in each department. The interior plan of the building included two main floors, a smaller third floor used for stock storage and the maintenance department, and a furnished customer patio surrounded by glass-sided escalators. Also, in keeping with the times, the large store was constructed with abundant customer parking surrounding it on the west, north, and east.

Modifications and expansion of the Northgate Mall began in 1972. This second major phase of development took place south of the original core facility on the remaining 10 acres of the property. Sears and Roebuck began construction on a 225,000-square-foot Sears Department store. The two-story, Post-Modern-style building was designed by Parkin Architects, Engineers, and Planners of Los Angeles (Parkin Architects); the project engineers were Simpson, Stratts, and Associates of San Francisco. The building was constructed by Williams and Burrows contractors of Belmont and featured angled walls, thick, arched indentations, and a light grey brick exterior with orange ceramic tile trim. The interior plan of the building included two main floors and a basement. The main Sears building was supplemented by a stand-alone automotive service building and seasonal sales building. In addition to the 2,323 parking stalls surrounding the existing areas of the Northgate Mall, development of the Sears building entailed the installation of another 700 parking spaces.

The Northgate Mall Unit 2 Addition and Units 4 and 5 were also completed during this development phase. The one-story buildings provided a connection between the buildings completed during the first phase of development in 1964 and the new Sears Department store, and offered new space for smaller retail shops. Following the development of the Sears buildings and the two new units in 1972, historic aerial photographs and building permits issued by the City of San Rafael (City) confirm that the property remained relatively unchanged until 1986. At this time, the Northgate Mall underwent a large-scale enclosure and expansion redevelopment, which resulted in the destruction of the original design. The once open-air center pedestrian walkways that were key features of the original mall concept by Welton Beckett & Associates and that featured Halprin's landscape design elements were eliminated by a process of connecting all of the buildings through enclosure of the original open-air areas with metal-framed glass ceiling panels. The end result was that all of the original 1964 and 1972 buildings were connected and joined into a single unit, essentially creating a new, massive building. The landscaped areas in the main and secondary corridors of the mall designed by Halprin were completely removed during this renovation. The original exterior concrete aggregate walkways were replaced with interior flooring punctuated by palm trees.

Three new free-standing buildings were also added to the property during this redevelopment period, including a department store building that is currently occupied by Kohl's; a parking garage to the west of the main Northgate Mall; and another store to the east that presently houses Home Goods. According to permit research, the mall underwent another large-scale exterior remodel in

2008, which resulted in modifications to exterior storefront walls to accommodate signage and designs based on modern brand recognition, including BJ's Restaurant, Chipotle, and Peet's Coffee & Tea. The interior landscaping installed during the 1986 (not associated with Halprin) redevelopment had been removed, although it is not clear if this change was made as part of the 2008 renovation work or earlier. Subsequent building additions to the property include the development of a Rite Aid in 2009 in the northeastern corner of the site and the addition of a Panera franchise store onto the eastern elevation of the Kohls department store in 2010. Today, only fragments of the original 1964 Northgate Mall construction remain at the site.

New Formalism Architecture. The Emporium building designed by Welton Beckett & Associates and completed in 1964 employs a New Formalist design. New Formalism developed during the 1950s as a response to rigid, inflexible characteristics dictated by the International Style. The new style sought to explore classical architectural elements and forms in monumental size and stature but fabricated from the innovative modern building technologies advanced by the International Style during the preceding decades. New Formalism was frequently employed for civic and institutional architecture during the 1950s and 1960s due to its playful yet striking colossal forms. Characteristics of the New Formalism style include:

- Architectural reference to Classicism, such as the use of evenly spaced columns, repetitive patterns, arches and use of decoration;
- Symmetry;
- Monumental scale;
- Formal landscape, often using pools, fountains, and sculptures within a central plaza; and
- Use of traditionally rich materials, such as travertine, marble, and granite or manmade materials that mimic their luxurious qualities.

Post-Modernism Architecture (1970s–1990s). The Sears department store designed by Parkin Architects and completed in 1972 displays elements associated with the Post-Modern style of architecture. Post-Modernism developed during the late 1960s as a stark response to the popularity of modernist architecture, which customarily disregarded the use of traditional architectural language in its designs. Post-Modernism embraced a diverse stance on stylistic representation that sought to combine the vocabulary of traditional classical forms present in the architecture of the Italian High Renaissance and Baroque periods, the 18th-century French, German, and English Rationalists, and early 20th century Classicism with the newer architectural language generated by modernism. Conventional symmetry and proportions associated with classic forms are rarely present, although classical features such as the column, arch, and entablature are commonly employed. These elements, however, are rarely at the heart of the design aesthetic and often are paradoxical in application to the overall design. Examples of Post-Modern architecture range widely in style, owing to the wholly contradictory and eclectic theory at the center of the style's aesthetic. Characteristics of the Post-Modernism style include:

- Architectural reference to classical forms on modern, playful architectural forms;
- Lack of traditional classical symmetry and proportions;

- Pronounced entablatures and projecting cornices;
- Use of columns, usually the Tuscan order;
- Use of arches, typically with overly defined voussoirs and keystones;
- Use of lunette and circular windows; and
- Defined entrances demarcated by columns, piers, arches, and entablatures.

Terra Linda Valley Neighborhood. The Terra Linda Valley neighborhood is located in the North San Rafael subarea of Terra Linda. The Terra Linda subarea occupies the Las Gallinas Valley to the west and the northwest of the North San Rafael Town Center subarea. Subdivision of the Terra Linda subarea began in the early to mid-1950s and included the development of over 900 Mid-Century Modern-style homes by Joseph Eichler in two distinct residential neighborhoods, known respectively as Terra Linda (1955–1961) and Terra Linda Valley (1959–1960). The first Eichler Homes, Inc. homes in San Rafael were completed as part of the Eichler Terra Linda subdevelopment, also known as "Terra Linda North," in two phases between 1955 and 1956 and 1959 and 1961. This initial development contains over 600 homes concentrated around the intersection of Del Ganado and Las Raposas Road, approximately 1.10 miles northwest of the project site. These neighborhoods were later joined by other subdevelopments by Alliance and Kenney that featured homes in a similar style to Eichler's developments, causing the residential zones of the Terra Linda subarea to maintain a cohesive architectural appearance.

The residential neighborhood of Terra Linda Valley was developed by Eichler Homes, Inc. between 1959 and 1960 and was the second Eichler neighborhood to be constructed in the Terra Linda subarea. It is situated to the southeast of the initial Eichler Homes, Inc. Terra Linda neighborhood and southwest of the Northgate Mall. The neighborhood is comprised of two contiguous subdevelopment units, Terra Linda Valley Unit 1 (1959) and Terra Linda Valley Unit 2 (1960), which feature three Eichler model homes. The three main arteries through the neighborhood include Nova Albion Way, Golden Hinde Boulevard, and Devon Drive and the minor streets of Sao Augustine Way, Don Timoteo Court, Cermenho Court, Corte Pacheco, Dias Way, Anchorage Court, Del Haro Way, Arcangel Way, Ayala Court, De Anza Way, Sussex Court, and Drakes Cove. The Mid-Century Modern Post-and-Beam-style homes in the neighborhood were designed by architectural firms Jones & Emmons and Anshen & Allen, and each three- or four-bedroom/two-, three- or four- bathroom model floor plan is designed around a "Mediterranean courtyard" entryway. The private street-facing elevations of the homes in the Terra Linda Valley neighborhood are balanced by the rear-facing elevations that feature floor-to-ceiling glass walls that overlook the private backyard spaces behind the homes.

Post-and-Beam Architecture (1950–1970). Post-and-Beam is a method of construction in which the structural framing consists of load-bearing beams supported by columns, rather than solid bearing walls. Highly architectonic in Modern designs, Post-and-Beam construction utilizes the structural members as architectural details, creating symmetry through the direct expression of vertical columns at regular intervals. Between the columns, the limited need for solid load-bearing walls allowed for the expansive use of glass on exterior walls. In fact, extensive use of glass (including entire walls of floor-to-ceiling glass) is a primary characteristic of this style. Character-defining features of the Post-and-Beam style include:

- Direct expression of the structural system, usually wood or steel frames;
- Horizontal massing;
- Flat or shallow-pitched roofs, with deep overhangs or no parapet;
- Floor-to-ceiling glass;
- Repetitive façade geometry;
- Minimal use of solid load-bearing walls;
- Absence of applied decoration;
- Strong interior/exterior connections;
- Open interior floor plans; and
- Exterior finish materials, including wood, steel, and glass.

4.4.1.5 Regulatory Context

The following describes the State and local regulatory and policy requirements for cultural resources that are relevant to the proposed project.

National Register of Historic Places (National Register). The National Register was first established in 1966, with major revisions in 1976. Federal regulations for the National Register are set forth in 36 Code of Federal Regulations (CFR) 60, which establishes the responsibilities of the State Historic Preservation Officers (SHPOs), standards for their staffs and review boards, and describes the statewide survey and planning process for historic preservation. Within these regulations, guidelines for nominations by the SHPO are set forth in 36 CFR 60.6. In addition, further regulations are found in 36 CFR 63 and 800 and *Bulletin 15: How to Apply the National Register Criteria for Evaluation* (1990) (Bulletin 15)[6], which define procedures for determination of eligibility, identification of historic properties, recovery, reporting, and protection procedures. The National Register was established to recognize resources associated with the accomplishments of all peoples who have contributed to the country's history and heritage. Guidelines were designed for federal and state agencies in nominating cultural resources to the National Register. These guidelines are based upon integrity and significance of the resource. Integrity applies to specific items such as location, design, setting, materials, workmanship, feeling, and association. Quality of significance in American history, architecture, archaeology, engineering, and culture is present in resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

- **Criterion A:** Associated with events that have made a significant contribution to broad patterns of our history.
- **Criterion B:** Associated with the lives of persons significant in our past.
- **Criterion C:** Embodies distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D:** Have yielded, or are likely to yield, information important in prehistory or history.

[6] United States Department of the Interior National Park Service (NPS). 1990. *Bulletin 15: How to Apply the National Register Criteria for Evaluation*.

Integrity is defined in the United States Department of the Interior National Park Service (NPS) Bulletin 15 as "…the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. If a property retains the physical characteristics it possessed in the past then it has the capacity to convey association with historical patterns or persons, architectural or engineering design and technology, or information about a culture or peoples." There are also seven aspects of integrity that are used: (1) location, (2) design, (3) setting, (4) materials, (5) workmanship, (6) feeling, and (7) association.

California Environmental Quality Act (CEQA). CEQA applies to all discretionary projects undertaken or subject to approval by the State's public agencies (14 California Code of Regulations [CCR] Section 15002(i)). Under the provisions of CEQA, "A project with an effect 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" (14 CCR Section 15064.5(b)).

State CEQA Guidelines Section 15064.5(a), briefly summarized here, defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources
- Listed in a local register of historical resources, unless the preponderance of the evidence demonstrates that it is not historically or culturally significant
- Identified by the lead agency as significant in a historical resource survey meeting the requirements of Public Resources Code (PRC) Section 5024.1

If an impact on a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (14 CCR Section 15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project would have on the resource. Generally, a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* shall be considered mitigated to a level of a less than significant impact on the historical resource (14 CCR Section 15064.5(b)(3)). As noted in Section 15126.4(b)(2) of the *State CEQA Guidelines,* "In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment will occur." Finally, CEQA requires that all feasible mitigation be undertaken even if the mitigation does not reduce impacts to less than significant levels (14 CCR Section 15126.4(a)(1)).

California Register of Historical Resources (California Register). PRC Section 5024.1 established the California Register. The requirements for listing in the California Register, including the criterion for listing and having integrity, are similar to those of the National Register. Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register (14 CCR Section 15064.5(a)(3)). For a cultural resource to qualify for listing in the California Register, it must be significant under one or more of the following criteria:

- **Criterion 1:** Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** Associated with the lives of persons important in our past.
- **Criterion 3:** Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- **Criterion 4:** Has yielded, or may be likely to yield, information important in prehistory or history.

In addition to being significant under one or more of these criteria, a resource must retain enough of its historic character and appearance to be recognizable as a historical resource and be able to convey the reasons for its significance (14 CCR Section 4852(c)). Generally, a cultural resource must be 50 years or older to be eligible for the California Register (14 CCR Section 4852(d)(2)).

In addition to meeting one or more of the significance criteria, a cultural resource must retain its historical integrity to be considered eligible for listing in the California Register. Historical integrity is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance."[7] The evaluation of integrity must be grounded in an understanding of a resource's physical features and its environment, and how these relate to its significance. There are seven aspects of integrity to consider when evaluating a cultural resource (i.e., location, design, setting, materials, workmanship, feeling, and association), which are described as follows:[8]

1. ***Location*** is the place where the historic property was constructed or the place where the historic event occurred. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons.

2. ***Design*** is the combination of elements that create the form, plan, space, structure, and style of a property. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

3. ***Setting*** is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. Physical features that constitute the setting of a historic property can be either natural or manmade, including topographic features, vegetation, paths or fences, or relationships between buildings and other features or open space.

4. ***Materials*** are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

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[7] California Office of Historic Preservation. n.d. California Office of Historic Preservation Technical Assistance Series #6, *California Register and National Register: A Comparison.* California Office of Historic Preservation, Sacramento.

[8] National Park Service (NPS). 1997. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*. United States Department of the Interior, Washington, D.C.

5. ***Workmanship*** is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of the artisan's labor and skill in constructing or altering a building, structure, object, or site.

6. ***Feeling*** is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.

7. ***Association*** is the direct link between an important historic event or person and an historic property.

California PRC Section 5097.98. Section 5097.98 of the PRC states that the Native American Heritage Commission (NAHC), upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5 (discussed below), shall immediately notify those persons (i.e., the Most Likely Descendant or "MLD") it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

California Health and Safety Code Section 7050.5. Section 7050.5 of the California Health and Safety Code states that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American MLD to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

City of San Rafael General Plan. The following policies of the San Rafael General Plan 2040 pertaining to cultural resources would be applicable to the proposed project:

> **Policy CDP-5.1: Historic Buildings and Areas.** Preserve buildings and areas with special and recognized historic, architectural or aesthetic value, including but not limited to those on the San Rafael Historical/Architectural Survey. New development and redevelopment should respect architecturally and historically significant buildings and areas.
>
> > **Program CDP-5.1A: Preservation Ordinance.** Continue to implement the City's Historic Preservation Ordinance. The Ordinance should be reviewed at least once every 10 years to ensure that its criteria, classifications, and procedures provide the most effective measures to assess proposed changes to historic properties and are consistent with Secretary of the Interior standards.
> >
> > **Program CDP-5.1B: Oversight Responsibilities.** Create a more formal means of oversight for review of planning and building applications affecting historic resources.

This could include a contract with an architectural historian, or an advisory committee convened as needed to advise the Planning Commission and Design Review Board on matters and policies related to preservation or the modification of historic structures. If an oversight body is created, it should represent diverse perspectives and interests.

Policy CDP-5.3: Districts. Encourage the formation of historic or architectural conservation districts in areas where important historic resources are concentrated and where there is property owner and community support for such designations. Such districts should provide for preservation, restoration, and greater awareness of the resources they contain, while providing financial and property tax incentives for property owners.

Policy CDP-5.6: Protecting the Integrity of Historic Properties. Ensure that modifications to designated historic properties, including additions, alterations, and new structures, are visually compatible with the property's contributing features, as defined by the San Rafael Municipal Code.

Program CDP-5.6B: Design Guidelines. Address historic preservation in the City's design guidelines, including successful examples of (a) adaptive reuse, alterations, and other changes; and (b) new infill development in the context of an older neighborhood, including examples of contemporary architecture. Infill development in older areas does not need to mimic historic development but should acknowledge and respect its context.

Program CDP-5.6C: Landscapes and Natural Features. Consider landscapes, gardens, mature trees, and natural features as contextually relevant when defining historic value. Encourage the preservation of such features when they are determined to be significant.

Policy CDP-5.13: Protection of Archaeological Resources. Protect significant archaeological resources by:

- Consulting the City's archaeological resource database prior to issuing demolition or construction permits in known sensitive areas.
- Providing information and direction to property owners to make them aware of these resources and the procedures to be followed if they are discovered on-site.
- Identifying, when possible, archaeological resources and potential impacts on such resources.
- Implementing measures to preserve and protect archaeological resources, including fines and penalties for violations.

Program CDP-5.13A: Archaeological Resources Ordinance. Continue to implement the existing Archaeological Resources Ordinance and the City's Archaeological Resources database.

Policy NH-4.5: Eichler and Alliance Homes. Preserve the design character of the neighborhood's iconic Eichler, Alliance, Kenney, and other single-story mid-century modern homes.

City of San Rafael Municipal Code Section 2.18.048 – Criteria for Designation as a Landmark. The following set of criteria is applied by the Cultural Affairs Commission and by the City Council in designating buildings, places, and areas as historic landmarks or historic districts:

(a) Historic, Cultural Importance

(1) Has significant character, interest, or value as part of the development, heritage or cultural characteristics of the city, state or nation; or is associated with the life of a person significant in the past;

(2) Is the site of a historic event with a significant effect upon society; or

(3) Exemplifies the cultural, political, economic, social or historic heritage of the community.

(b) Architectural, Engineering Importance

(1) Portrays the environment in the era of history characterized by a distinctive architectural style;

(2) Embodies those distinguishing characteristics of an architectural type or engineering specimen;

(3) Is the work of a designer whose individual work has significantly influenced the development of San Rafael or its environs;

(4) Contains elements of design, detail, materials or craftsmanship which represent a significant innovation; or

(5) The work of a designer and/or architect of merit.

(c) Geographic Importance

(1) By being part of or related to a square, park or other distinctive area, should be developed or preserved according to a plan based on a historic, cultural or architectural motif; or

(2) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or city.

(d) Archaeological Importance. Has yielded information important in prehistory or history.

4.4.1.6 Historical Evaluations

The results of the historical resource evaluation of the Northgate Mall and the Terra Linda Valley neighborhood[9] and peer reviews[10,11] are summarized below according to the criteria for listing in the

[9] Dudek. 2022a. *Archaeological Resources Inventory Report for the Northgate Town Square Project, City of San Rafael, California*. February 7.

[10] LSA Associates, Inc. 2022b. *Peer Review of the March 2022 Built Environment Inventory and Evaluation Report, Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No. CSR2001.03).* April 14.

[11] LSA Associates, Inc. 2023. *Built Environment Inventory and Evaluation Report Response Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No. CSR2001.03).* April 19.

National Register/California Register (Criteria A/1 through D/4, as well as historic integrity)[12] and the City's landmarks inventory. Please note that the criteria for listing are described in Section 4.4.1.5, Regulatory Context.

Northgate Mall. The Northgate Mall is comprised of six parcels containing a large commercial building flanked by several stand-alone buildings and landscaped spaces on approximately 44.76 acres. The complex was gradually developed and displays a variety of architectural styles and materials. The former Emporium building (now a Macy's department store) anchors the northeastern end of the mall complex, and the southern end is anchored by the Sears building. Between these two anchor stores is the central axis of the indoor Northgate Mall. Detached from the mall complex is the Sears Automotive Center to the southeast; the Sears Seasonal Sales Building, the parking garage, Kohls, and Panera to the west; Rite Aid to the northeast; and the Home Goods store to the east. Figure 3-3 in Chapter 3.0, Project Description, shows the locations of the existing buildings on the project site.

The Northgate Mall was modified and expanded in multiple stages over the course of a 46-year period, with major renovations in 1972, 1986, and 2009–2010. Alterations and modifications to each of the buildings are identified in detail in the HRE, which is included as Appendix C.

National Register of Historic Places and California Register of Historical Resources. Criteria A/1 through D/4 for listing on the National Register/California Register are discussed below, followed by a discussion of potential integrity.

Criterion A/1. Development of the Northgate Mall began in 1962 when the Draper Company announced plans for the construction of a 400,000-square-foot shopping center on the west side of US-101. Construction began in 1963 with the completion in 1964 of a 200,000-square-foot branch of the Emporium department store and three stand-alone shopping units comprising an open-air shopping center. The Emporium opened in 1965. The development of the Northgate Mall directly correlates to the residential and subsequent commercial expansion of Marin County and San Rafael during the 1950s and 1960s. Commonly referred to as the post-World War II era, communities throughout California and the United States experienced an unprecedented boom of expansion and growth. Specifically, residential developments in newly developed suburban areas located outside of city cores spurred the need to establish places for residents to acquire goods and services and gather. Near Detroit, architect Victor Gruen designed the first suburban outdoor shopping mall in 1954, and in 1956 he designed the first enclosed shopping mall in the United States located in Edina, Minnesota. Thousands of similar developments were established in the years and decades following their invention across the country and throughout the State.

Development of the Northgate Mall is a representative regional example of the commercial growth that developed to bolster suburban communities like Terra Linda Valley, which grew in response to the massive population surge in the Bay Area during the post-war period. The

[12] Due to their similar criteria, the evaluation for listing in the National Register of Historic Places and the California Register of Historical Resources has been combined.

Northgate Mall therefore provided a centralized commercial area to support the existing population of Terra Linda Valley, as well as population growth within Marin County and the greater Bay Area. Therefore, the Northgate Mall is associated with the post-World War II period of growth in Marin County and particularly in San Rafael as it contributed to the overall growth of the city in the mid-20th century and beyond. For these reasons, *the Northgate Mall is significant under National Register Criterion A/California Register Criterion 1* due to its association with events that have made a significant contribution to the broad patterns of California's history. Therefore, an integrity evaluation is further provided below.

Criterion B/2. According to Bulletin 15, Criterion B "is generally restricted to those properties that illustrate a person's important achievements." Examples of property types that have proven association with significant individuals under this Criterion include "the homes of an important merchant or labor leader, the studio of a significant artist, and the business headquarters of an important industrialist." To be found eligible under National Register Criterion B or California Register Criterion 2, the property has to be directly tied to the important person and the place where the individual conducted or produced the work for which he or she is known. Archival research failed to indicate any direct association between individuals known to be historic figures at the national, State, or local level and the Northgate Mall. Additionally, as a multi-component property, the Northgate Mall comprises several different stores and/or restaurants where companies and individuals occupy spaces and utilize the property to sell goods and services. Essentially, the Northgate Mall represents the collective efforts of many individuals and businesses, rather than the work of any single individual. Nevertheless, in consideration of all factors, the Northgate Mall is not known to have any historical associations with people important to the nation's or State's past. Due to a lack of identified significant associations with important persons in history, the Northgate Mall *does not appear eligible for listing under National Register Criterion B or California Register Criterion 2*.

Criterion C/3. As stated in Bulletin 15, for a property to be found eligible for listing under National Register Criterion C or California Register Criterion 3, a property is required to meet at least one of the following thresholds: represent the work of a master; embody distinctive characteristics of a type, period, or method of construction; or possess high artistic value.

In consideration of the Northgate Mall as a representative work of a master, the Northgate Mall, initially constructed in 1964, was conceptualized architecturally by Welton Beckett & Associates as an open-air regional shopping center designed in the New Formalist architectural style. The original shopping center complex featured several individual buildings loosely linked together almost like a school campus. The complex of buildings included open air walkways, with hardscape and softscape design elements from Lawrence Halprin. The landscape elements featured walkways that provided circulation patterns linking the buildings, outside seating areas, plantings, and a fountain. Following the initial creation of the site, it remained as originally conceptualized for only a few years.

By the early 1970s, the shopping area remained open air but was enlarged with the addition of Sears and Roebuck buildings just south of the original complex. Parkin Architects planned

and designed the Sears buildings, which were completed on the property in 1972. Parkin Architects was known for their designs of hospitals, schools, airports, and factories and became one of the most prolific architectural firms in Canada prior to the establishment of a branch firm in Los Angeles in 1970. The Sears buildings at the Northgate Mall was one of many large-scale commercial commissions the firm designed and does not represent a distinct or intact example of the firm's work. Although Parkin Architects was involved in the planning of commissions for large commercial clients including Sears, the lack of information related to the contributions of Parkin Architects to the overall field of architecture and engineering indicates they are not recognized as a master in the area of commercial property design.

Through the remainder of the 1970s and into the early 1980s, the subject property remained unchanged from its original concept as an open-air shopping center. In 1986, the property was redeveloped and converted from an open-air shopping center to a large, enclosed mall. Essentially, the result of this redevelopment was that all of the original 1964 and 1972 buildings were connected and joined into a single unit, creating a new, massive mall building. Building permit research did not identify the architects or engineers associated with the 1986 redevelopment.

Architectural firm Welton Beckett & Associates is responsible for the design of the Emporium anchor store and the first three Northgate Mall units completed in 1964. The senior partner of the architectural firm, Welton Beckett, is a recognized master architect for his daring modern designs, which include high-profile commissions such as the Capitol Records Tower in Hollywood, California, and the Music Center of Los Angeles County in Los Angeles, California. The Northgate Mall was one of several shopping centers Beckett designed during the post-World War II period. The Northgate Mall displays typical and ubiquitous features associated with open-air regional shopping centers during the mid-1960s and stands as a representative example of Beckett's shopping center work. For these reasons, *the Northgate Mall is significant under National Register Criterion A/California Register Criterion 3* due to its association with the work of an important creative individual. Therefore, an integrity evaluation is further provided below.

Regarding Halprin, the 1986 redevelopment that resulted in conjoining all the existing buildings under one roof to create a large mall structure resulted in the demolition of all of his contributions to the property, so there is no longer any existing material or physical connection between Halprin and the Northgate Mall.

<u>Criterion D/4.</u> This criterion is typically used to evaluate the potential for archaeological deposits to contain information important in understanding past lifeways. Its application to architecture is less common in eligibility assessments due to the prevalence of popular publications that thoroughly document the form, materials, and design of a building type. The *Northgate Mall is not significant under Criterion D of the National Register or Criterion 4 of the California Register* as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

Integrity. Historic integrity is what qualifies a property that has associative significance under a criterion or under multiple criteria. In addition to being significant under one or more criteria, a resource must retain enough of its historic character and appearance to be recognizable as an historical resource and retain its integrity, which is defined as the ability of a resource to convey the reasons for its significance. There are seven aspects of integrity used to measure a property's ability to convey its significance, as further defined in Section 4.4.1.5, Regulatory Context: location, design, setting, materials, workmanship, feeling, and association. Historical resources eligible for listing in the National Register and/or the California Register must meet one of the criteria of significance described above and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. As described above, the *Northgate Mall is significant under National Register Criterion A/California Register Criterion 1* due to its association with events that have made a significant contribution to the broad patterns of California's history and is *also significant under National Register Criterion A/California Register Criterion 3* due to its association with the work of an important creative individual. As such, the following discusses the Northgate Mall with respect to all seven aspects of integrity:

- **Location:** The Northgate Mall has not been moved and retains its integrity of location.

- **Design, Materials, and Workmanship:** The Northgate Mall does not retain its integrity of design, materials, or workmanship. Most of the project site no longer displays any characteristics of the New Formalist architectural style. This was the result of multiple large-scale alterations including: construction of a Post-Modern-style Sears building, a Sears Automotive Center, and a Sears Seasonal Sales building at the south end of the Northgate Mall (1972); enclosure of the open-air mall (1986); addition of a parking garage, a Kohl's building, and a Home Goods building (1986); and replacement of all exterior materials on Mall Units 1 through 5 (2008). The Northgate Mall was constructed in 1964 as an open-air regional shopping center and retains the following characteristics of this property type: inward-facing orientation, large surface parking lots surrounding the building, anchor stores, separation from the street, one-story in height, boxlike massing, and a location outside an established urban center or downtown. Despite retaining these characteristics, key elements such as a roofless center pedestrian walkway and the unifying design that would make the property appear as a single, unified complex have been lost. Additionally, there are no longer low-key openings and signs. Architectural features associated with the original New Formalist design including symmetry and a formal landscaped area featuring a central plaza with a fountain have all been lost as a result of the aforementioned alterations, particularly the enclosure of the open-air mall in 1986. Alterations have eliminated the features of the Northgate Mall that once distinguished it as a New Formalist open-air regional shopping center identifiable with its mid-century design and construction date.

- **Setting and Feeling:** The Northgate Mall retains its integrity of feeling and setting. The Northgate Mall was developed nearly a decade after the adjacent Terra Linda Valley neighborhood, which still exists today. The surrounding areas have largely been

developed with commercial uses that are compatible with those within the Northgate Mall. As described above, the Northgate Mall has undergone multiple large-scale alterations since it was constructed. However, this change has not diminished the experience of viewing or using the building.

- **Association:** The building partially retains its integrity of association. The building remains a regional shopping center and therefore remains a visual and functional link to San Rafael's post-World War II past. However, alterations to the original buildings within the Northgate Mall and the introduction of new buildings have largely resulted in the removal of key elements of the original design by Beckett and Halprin.

In summary, extensive alterations since its original construction have diminished the historic integrity of the Northgate Mall to the extent that it could not convey significance. The Northgate Mall does not appear to be eligible for inclusion individually or as part of a historic district in the National Register or California Register, or as a city landmark. Therefore, *the Northgate Mall does not qualify as a historical resource pursuant to the National Register or California Register criteria*.

City Landmarks. The criteria for designation of the Northgate Mall as a city landmark are discussed below.

Historical, Cultural Importance. As stated under the Integrity discussion above, the Northgate Mall does not maintain significant character, interest, or value as part of the development, heritage, or cultural characteristics of San Rafael, the state, or the nation. Archival research also failed to indicate any direct association with individuals that are known to be historic figures at the national, State, or local level and the Northgate Mall.

Archival research did not indicate that the Northgate Mall is the site of any historic event that has had a significant effect upon society.

Other than its role in accommodating the post-World War II period growth of San Rafael and being one of many shopping centers constructed in the 1950s and 1960s, archival research did not indicate that the Northgate Mall is associated with any other events that have resulted in significant contributions to the cultural, political, economic, social, or historic heritage of the community. The Northgate Mall followed the typical development history of a mid-century shopping center, including expansion and modifications in the 1970s, 1980s, and 2000s to ensure its continued commonplace use as a location where residents can purchase goods and services and gather. As discussed under Criterion 1/A, the Northgate Mall is directly associated with the post-World War II development of San Rafael and Marin County but lacks the integrity to convey this significance. Accordingly, the subject property is not significant under this city landmark criterion.

Architectural, Engineering Importance. As discussed in National Register Criterion C and California Register Criterion 3, the Northgate Mall as it currently stands displays multiple, incompatible architectural styles and does not present a unified design. However, as stated above, this shopping mall property is representative of the important work of a master

architect (Welton Beckett) but lacks the integrity to convey this association. For these reasons, the Northgate Mall does not appear significant under any of the above-listed architecture and engineering importance related criteria for San Rafael.

Geographic Importance. Archival research failed to indicate a historical relationship between the Northgate Mall and a square, park, or other distinctive area that should be developed or preserved according to a plan based on a historic, cultural, or architectural motif.

Despite the centralized location of the Northgate Mall and its proximity to the Terra Linda Valley neighborhood, the extensive alterations to the property over time have caused the mall to be incapable of representing an established and familiar visual feature of the neighborhood, community, or city. For this reason, the Northgate Mall does not appear eligible for listing under the theme of geographic importance.

Archaeological Importance. As discussed under National Register Criterion D and California Register Criterion 4, the Northgate Mall is not significant as a source, or likely source, of important archaeological pre-historical or historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

Terra Linda Valley Neighborhood. As described above, the Terra Linda Valley Neighborhood consists of two contiguous subdevelopment units, Terra Linda Valley Unit 1 and Terra Linda Valley Unit 2, which were completed in 1959 and 1960, respectively

Research indicates that the Terra Linda Valley neighborhood is listed on the San Rafael Historical/ Architectural Survey (Survey) as an area requiring further study as a historic district. The Survey, completed in 1986, assigned the neighborhood the California Register Status Code 7J: Received by OHP for Evaluation or Action but Not Yet Evaluated; however, the California Built Environment Resource Directory records the neighborhood as maintaining a California Register Status Code of 7W: Submitted to OHP for Action – Withdrawn or Inactive. It appears that the Terra Linda Valley neighborhood has not been formally evaluated for historic significance under National Register, California Register, or local criteria to determine whether the neighborhood is considered a historical resource for the purposes of CEQA. However, the City regards structures and areas included on the Survey as presumed significant historic resources warranting preservation, unless evidence to the contrary is provided. For this reason, *the Terra Linda Valley neighborhood is presumed eligible for listing as a historical resource under CEQA as a local historic resource*.

Additionally, the Neighborhoods and the Community Design and Preservation Elements of the San Rafael General Plan 2040 establish the following policies that seek to provide local protections for mid-century Eichler subdevelopments like the Terra Linda Valley neighborhood at the local level.

- **Neighborhoods Element Policy NH-4.5:** Eichler and Alliance Homes seeks to preserve the distinct character of the single-story mid-century modern subdevelopments present in the Terra Linda subarea and continues to enforce the conditions of an established Eichler-Alliance Overlay District, which limits the height and requires a design review for most modifications to roofs in Eichler and Alliance subdevelopments.

- **Community Design and Preservation Element Policy CDP-5.3: Districts,** outlines the formation of Conservation Districts as an alternative to historic districts or the designation of individual landmarks, and it also outlines the recognition of mid-century neighborhood districts planned by Eichler, Kenny, and Alliance in North San Rafael as important features of San Rafael's architectural heritage.

Based on this, *it appears that the Terra Linda Valley neighborhood may qualify as a historical resource at the local level of significance*.

The Terra Linda Valley neighborhood contains over 100 possible contributing buildings, appears historically significant at the local level as a district, and is significant as an example of mid-century neighborhood districts planned by Eichler in North San Rafael, and its ability to convey characteristics of the Post-and-Beam architectural style as designed by architects Anshen and Allen, and Jones and Emmons (historic significance is under architecture). The period of significance would be 1959–1960, which marks the date the neighborhood construction was completed, and the historic district boundary is limited to the extent of the neighborhood.

Integrity. Multiple buildings within the neighborhood have been altered since their original construction. Examples of consistently observed alterations throughout Terra Linda Valley include the following:

- Replacement cladding
- Reroofing
- Replacement windows and/or additional windows added to front elevation
- Replacement entry doors
- Replacement garage doors
- Alteration of original roofline including construction of second story

Despite alterations seen throughout the neighborhood, it is possible to identify many intact or mostly original examples of the three models of homes designed by Anshen and Allen and/or Jones and Emmons. Overall, the limited number of models offered within the neighborhood has contributed to a strong visual connection and sense of neighborhood cohesion. For this reason, *the neighborhood maintains a high degree of integrity overall in the areas of location, setting, design, materials, workmanship, feeling, and association*.

Character-Defining Features. The Terra Linda Valley neighborhood, to be considered a historic district with significance under architecture, must retain the following physical attributes (character-defining features) as they relate to the integrity of workmanship, materials, design, location, setting, feeling, and association:

- Maintains cohesion as a Mid-Century Modern subdivision.
    - Exhibits most construction methods, architectural details, and circulation patterns associated with the potential district's period of significance (1959–1960).

- Maintains its original residential setting and location.
- Continues to function as a residential neighborhood.

Individual residences in the Terra Linda Valley neighborhood share the following general character-defining features associated with significance under architecture:

- Mid-Century Modern Post-and-Beam construction
- Broad, single-plane front elevation with recessed entry at center
- Private street-facing elevations with minimal windows
- Flat and/or shallow-pitched, front-facing gable roofs
- Clerestory windows
- Vertical wood, wood shingle, or concrete masonry unit siding
- Uniform setback from the street
- Mature landscaping in front yards
- Concrete driveways
- Double- and single-width garages
- Integrated covered parking areas
- Mediterranean Courtyard entryway
- Mass-produced and economic materials

Actions that result in the diminishment of any of these features, such as removal or alteration, could result in a significant impact under CEQA. Additionally, a significant impact could occur if a project were to remove the ability of the Terra Linda Valley neighborhood to demonstrate any of these features, such as introducing new structures or landscaping that would substantially reduce their visibility.

4.4.2 Impacts and Mitigation Measures

As described above, the presence of and potential for significant cultural resources was determined by assessing previously documented cultural resources through archival background research, a field survey, and an evaluation of cultural resources in the project site to determine their eligibility for listing in the California Register. These findings were then compared to the *CEQA Guidelines'* cultural resource significance criteria identified below to determine if the project would have the potential to result in significant impacts to those types of cultural resources.

The following describes the project's potential impacts on cultural resources, consisting of historical resources, archaeological resources, and human remains. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. Impacts would be the same under the development of Phases 1 and 2; therefore, impacts of phasing are not differentiated in the discussion below and are focused on total project buildout.

4.4.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to cultural resources if it would:

Threshold 4.4.1: Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5;

Threshold 4.4.2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to *CEQA Guidelines* Section 15064.5; or

Threshold 4.4.3: Disturb any human remains, including those interred outside of formal cemeteries.

For the project to cause "a substantial adverse change" on a historical resource, it would have to demolish, destroy, relocate, or alter the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (*State CEQA Guidelines* Section 15064.5(b)). Archaeological sites may qualify as historical resources under CEQA (*State CEQA Guidelines* Section 15064.5(c)(1)).

Generally, for purposes of CEQA, the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register or an officially recognized local register of historical resources, or its identification in a historical resources survey meeting the requirements of PRC Section 5024.1(g).

4.4.2.2 Project Impacts

The following describes the project's potential impacts to cultural resources according to the significance criteria described above.

Impacts to historical resources could occur from project implementation. Note that under the *CEQA Guidelines*, "historical resources" can include both significant built-environment resources and archaeological deposits. Potential impacts to these two types of historical resources are discussed under the separate threshold discussions below.

Threshold 4.4.1: Built Environment Resources. As described above, the Northgate Mall was evaluated for its eligibility for listing in the California Register, National Register, and as a city landmark. The Northgate Mall does not appear eligible for inclusion in any of these three listings, and therefore would not be considered a historic or eligible historic resource under CEQA. Therefore, demolition of the Northgate Mall would not result in a substantial adverse change to a historic architectural resource under CEQA, and there would be **no impact.**

The project site is located immediately adjacent to the Terra Linda Valley neighborhood. As described above, this neighborhood is a historic resource under CEQA because it appears to be eligible as a city landmark as an important example of a mid-century neighborhood planned by Eichler in North San

Rafael, and for its ability to convey characteristics of the Post-and-Beam architectural style as designed by architects Anshen and Allen, and Jones and Emmons. The period of significance would be 1960, which marks the date the neighborhood was completed. The historic district boundary is limited to the extent of the neighborhood.

The project site is located adjacent to, but not within, the Terra Linda Valley neighborhood. The proposed project would not include any modifications to any of the buildings, contributing elements, or character-defining features of the historic district. Therefore, because the proposed project would not include any direct impacts, review under the Secretary of the Interior *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* would not be required.

The proposed project could result in indirect impacts to the historic district in the event that new sources of light, glare, or shadow are introduced within the district that could in turn diminish or disrupt the ability of the district to convey its architectural significance. The proposed project would be located north of the district, and therefore would not be expected to cast shadows that would impact the district. Additionally, lighting elements included in the proposed project would be designed to minimize light and glare spillover.

Project construction activities could also generate ground-borne vibration that could damage buildings located within the historic district, particularly along Sao Augustine Way. However, as noted in Section 4.12, Noise, of this EIR, all predicted vibration levels are lower than the occupant annoyance threshold of 72 vibration velocity decibels (VdB), and lower than the building damage risk threshold of 0.2 inches per second (in/sec) peak particle velocity (PPV). Therefore, implementation of the proposed project would not result in impacts to the Terra Linda Valley neighborhood as a historic district that would diminish the district's ability to convey significance, and indirect impacts would be **less than significant.**

Threshold 4.4.2: Archaeological Resources. No archaeological cultural resources were identified at the project site. However, as previously noted, the project site has moderate potential for the discovery of prehistoric archaeological resources due to the flat topography and the previous presence of a drainage to South Fork Creek. This is a **potentially significant** impact.

Impact CUL-1 Project ground disturbance has the potential to unearth significant archaeological deposits or resources, resulting in a potential substantial adverse change on historical resources, as defined in *State CEQA Guidelines* Section 15064.5. (S)

If significant archaeological deposits or resources were unearthed during project construction, a substantial adverse change in the significance of a historical resource could occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired through loss of information important in understanding San Rafael's prehistory (*State CEQA Guidelines* Section 15064.5(b)(1)). When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource. Those archaeological sites that do not qualify as historical resources shall be assessed to determine if these qualify as "unique archaeological resources" (California PRC Section 21083.2). The proposed project would have a potentially significant impact on archaeological historical resources and unique archaeological

resources unless mitigation described under Mitigation Measures CUL-1a through CUL-1c are incorporated.

Mitigation Measure CUL-1a **Preparation of a Cultural Resources Monitoring Plan.** Prior to issuance of a grading permit or building permit, the project sponsor shall retain an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology to prepare a Cultural Resources Monitoring Plan in consultation with the Federated Indians of Graton Rancheria (Graton Rancheria). The Cultural Resources Monitoring Plan shall include (but not be limited to) the following components for archaeological and Native American monitoring:

- Person(s) responsible for conducting archaeological monitoring
- Person(s) responsible for Native American monitoring
- Procedures for notification in the event of the identification of cultural resources, as well as methods for treatment of such resources (e.g., documentation, collection, identification, repatriation)
- Methods of protection for cultural resources, including items such as protective fencing, security, and protocol for notifying local authorities (i.e., law enforcement) should looting or other resource damage occur

The Cultural Resources Monitoring Plan shall include a stipulation that, if significant archaeological or tribal cultural resources are identified, all work shall stop immediately within 100 feet of the resource(s). The Cultural Resources Monitoring Plan shall also include a stipulation that, during the course of the monitoring, the frequency of archaeological and Native American monitoring may be reduced from full-time to part-time based on the conditions and only if Graton Rancheria and the qualified archaeologist agree.

Mitigation Measure CUL-1b **Cultural Resources and Tribal Cultural Resources Sensitivity WEAP Training.** Prior to issuance of a building permit, grading permit, or demolition permit involving any potential ground-disturbing activity (e.g., building foundation removal), all personnel involved in project-related ground-disturbing activities (e.g., on-site construction managers, backhoe operators) shall be required to participate in a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]). The WEAP shall be developed by an archaeologist that meets the Secretary of the Interior's Professional

Qualifications Standards in archaeology, in consultation with input from Graton Rancheria.

The WEAP training shall be conducted before any project-related ground-disturbing activities (including building foundation removal) begin at the project site. The WEAP will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP will also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

The WEAP training shall be presented by an archaeologist and a representative from Graton Rancheria. The project sponsor shall maintain a record of all construction personnel that have received the WEAP training and provide the record to the City. WEAP training recipient records shall be maintained by the project sponsor throughout the duration of construction. A final WEAP training recipient record shall be submitted to the City of San Rafael prior to issuance of a certificate of occupancy.

Mitigation Measure CUL-1c **Archaeological Monitoring and Resource Protection.** Archaeological monitoring shall be required during initial ground-disturbing activities of sediments on the project site (including building foundation removal). For example, archaeological monitoring shall not be required during excavation of sediments that have been previously monitored by an archaeologist. Any excavations that extend below sediments that were previously monitored shall be subject to archaeological monitoring.

Monitoring procedures shall follow the Cultural Resources Monitoring Plan prepared under Mitigation Measure CUL-1. Construction crews shall stop all work within 100 feet of any archaeological discovery until an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology can assess the previously unrecorded discovery and provide recommendations. Resources could include subsurface historic-period features such as artifact-filled privies, wells, and refuse pits, and artifact deposits, along with concentrations of

adobe, stone, or concrete walls or foundations, and concentrations of ceramic, glass, or metal materials. Native American archaeological materials could include obsidian and chert flaked stone tools (such as projectile and dart points), midden (culturally derived darkened soil containing heat-affected rock, artifacts, animal bones, and/or shellfish remains), and/or groundstone implements (e.g., mortars and pestles). (LTS)

The mitigation measures described under Mitigation Measures CUL-1a through CUL-1c would ensure that: (1) if archaeological cultural resources are identified during excavation, these would be evaluated, documented, and studied in accordance with standard archaeological practice, and (2) archaeological deposits and human remains would be treated in accordance with appropriate State codes and regulations. In addition, the mitigation measures described under Mitigation Measures TCR-1a and TCR-1b in Section 4.5, Tribal Cultural Resources, would require Native American monitoring of the site by a representative of the Federated Indians of Graton Rancheria (Graton Rancheria) and a survey of the site by trained human remains detection dogs. As such, implementation of these mitigation measures would reduce the project's potential impacts to archaeological historical resources to **less than significant with mitigation**.

Threshold 4.4.3: Human Remains. There are no known human remains at the project site. However, the project site is located within close proximity to the Mt. Olivet San Rafael Cemetery. The boundaries of historic-era cemeteries are generally well mapped in this region; however, there is the potential that additional, poorly documented burials could be present in the surrounding area. In the event that human remains are identified during project construction, these remains would be treated in accordance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98, as appropriate.

Section 7050.5 of the California Health and Safety Code states that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. In accordance with *State CEQA Guidelines* Section 15064.5(e)(1)(B)(2), the NAHC will identify an MLD to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, as required by Mitigation Measure TCR-1b in Section 4.5, Tribal Cultural Resources, the project site would be surveyed by a trained human remains detection dog. If human remains are confirmed, then the procedures in Mitigation Measure CUL-1c would be required to be followed.

PRC Section 5097.98 states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the MLD) it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of

the remains and associated cultural materials within 48 hours of being granted access to the site. With these regulations in place, impacts on human remains would be **less than significant**.

4.4.2.3 Cumulative Impacts

For cultural resources, the scope for assessing cumulative impacts depends on the nature of the resource and relevant current, or probable future projects under review by the City. The proposed project would have a significant effect on the environment if it would contribute to a significant cumulative impact on cultural resources.

Because demolition of the Northgate Mall would cause no impact to historic architectural resources, it would not contribute to any cumulative impacts. Project impacts on the Terra Linda Valley neighborhood would be less than significant, and there are no projects under review by the City in the vicinity of the project site that may impact similar architectural historical resources. As such, the project is not anticipated to contribute to a cumulative impact on local architectural historical resources.

There are no current or probable future projects under City review that include recorded archaeological historical resources, archaeological resources, or human remains within the vicinity of the site. However, similar to the proposed project, ground disturbance associated with projects that could be developed throughout San Rafael under buildout of the General Plan could result in potentially significant impacts on previously unidentified archaeological sites and associated human remains that may be unearthed. However, as noted above, the City has identified no such current or probable future projects in the vicinity of the proposed project site.

Accordingly, the proposed project would not make a cumulatively considerable contribution to any significant cumulative impacts to cultural resources, and this impact would be **less than significant**.

4.5 TRIBAL CULTURAL RESOURCES

This section identifies the known tribal cultural resources on the project site and in the surrounding area and evaluates the potential for changes to such resources that could result from project implementation.

According to California Public Resources Code (PRC) Section 21074 and Chapter 532, Statutes 2014 (i.e., Assembly Bill [AB] 52), "tribal cultural resources" are defined as:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources (California Register); or (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

Information in this section is based on the Archaeological Resources Inventory Report (Archaeological Report)[1] and Historic Resources Evaluation (HRE)[2] prepared for the proposed project by the project sponsor's consultant (which are included as Appendices B and C, respectively), AB 52 Native American consultation efforts, and the San Rafael General Plan 2040 & Downtown Precise Plan Final EIR.[3] The Archaeological Report and HRE were peer reviewed by LSA before being relied on for this EIR.[4,5,6]

4.5.1 Environmental Setting

4.5.1.1 Prehistory

Studies and analysis of archaeological materials uncovered in the Bay Area indicate that native peoples have occupied the Bay region for over 11,000 years. At the time of the European settlement in the San Francisco Bay Area, San Rafael was part of the Coast Miwok territory. The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about which were distributed

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1 Dudek. 2021. *Archaeological Resources Inventory Report for the Northgate Town Square Project, City of San Rafael, California.* November 24.

2 Dudek. 2022. *Final Built Environment Inventory and Evaluation Report, Northgate Town Square Project, San Rafael, California.* September.

3 San Rafael, City of. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Final Environmental Impact Report*. May 21.

4 LSA Associates, Inc. 2022a. *Peer Review of an Archaeological Resources Inventory Report prepared by Dudek for the Northgate Town Square Project in San Rafael, Marin County, California (LSA Project No. CSR2001.03).* January 19.

5 LSA Associates, Inc. 2022b. *Peer Review of the March 2022 Built Environment Inventory and Evaluation Report, Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No. CSR2001.03)*. April 14.

6 LSA Associates, Inc. 2023. *Built Environment Inventory and Evaluation Report Response Northgate Town Square Project, San Rafael, Marin County, California (LSA Project No.: CSR2001.03)*. April 19.

seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life was diverse and abundant.

It is believed that members of the Coast Miwok were the Native Americans who met with both Sir Francis Drake and Sebastian Rodriguez Cermeño during their voyages to California. After those two contacts, the Coast Miwok were left alone for nearly 200 years until the construction of the San Francisco Presidio and Missions Dolores in 1776. The present-day territory of Marin County was first encountered by Spanish Lieutenant Juan de Ayala in 1775 when he led a military reconnaissance expedition into the San Francisco Bay Area.

4.5.1.2 Project Site

Historic aerial photography indicates that the project site was undeveloped prior to construction of the Northgate Mall, which began with grading in 1957. The landform in the area is comprised of Urban land-Xerorthents complex, 0 to 9 percent slopes, which is normally associated with valley floors that have been highly developed. Historically, a drainage to the South Fork Creek passed through the project site. Given the flat topography and proximity to a drainage of the project site, it likely was occupied by a Coast Miwok camp or other activity center and thus would be well suited to support the formation or continued presence of buried archaeological deposits or surface manifestations, but most or all of these would have been disrupted by extensive excavation from the west side of the site and fill on the east side to construct the Northgate Mall.

The project site has been entirely disturbed as a result of construction of the Northgate Mall. The project site is completely developed with buildings, paving, and improved landscaped areas that have resulted in no natural or undisturbed areas left on the project site. The Archaeological Report determined that no known tribal cultural resources are located within the project site.

4.5.1.3 Regulatory Framework

The following discusses applicable laws, standards, and policies related to tribal cultural resources, including those from State and local agencies.

State Regulations. The following State regulations related to tribal cultural resources that would be applicable to the project are described below.

> ***California Health and Safety Code (HSC) Section 7050.5.*** California HSC Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the County Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to

inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Public Resources Code Section 5097.5. PRC Section 5097.5 provides for the protection of cultural resources and prohibits the removal, destruction, injury, or defacement of archaeological features on any lands under the jurisdiction of State or local authorities.

Assembly Bill 52 Tribal Consultation. California PRC Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., AB 52), require that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. The bill requires a lead agency, prior to determining whether an EIR (among other types of environmental documents) is required for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the tribe requested the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area; and (2) the tribe requests consultation. The bill specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a Notice of Preparation (NOP) filed on or after July 1, 2015. By requiring the lead agency to consider these effects relative to tribal cultural resources and to conduct consultation with California Native American tribes, this bill imposes a State-mandated local program.

Local Plans and Regulations. The City of San Rafael General Plan 2040 policies, programs, and Municipal Code requirements related to tribal cultural resources that would be applicable to the project are described below.

City of San Rafael General Plan.The following policies of the City of San Rafael General Plan 2040 pertaining to tribal cultural resources would be applicable to the proposed project:

Goal CDP-5: Protection of Cultural Heritage. Protect and maintain San Rafael's historic and archaeological resources as visible reminders of the city's cultural heritage.

Policy CDP-5.14: Tribal Cultural Resources. Coordinate with representatives of the Native American community to protect historic Native American resources and raise awareness of San Rafael's Native American heritage.

Program CDP-5.14A: AB 52 Compliance. Implement the requirements of Assembly Bill 52 by providing opportunities for meaningful input from Native American representatives in the development review process.

Program CDP-5.14B: Protection of Tribal Resources. Incorporate standard approval conditions in future development projects that ensure that Native American resources are protected during construction. In the event tribal resources are discovered, earth-disturbing work must be temporarily suspended pending evaluation by a qualified archaeologist and an appropriate Native American representative. Where appropriate, a mitigation plan shall be developed in accordance with state guidelines and tribal input.

San Rafael Municipal Code. The following chapter of the San Rafael Municipal Code pertaining to tribal cultural resources would be applicable to the proposed project:

> **Chapter 2.19, Archaeological Resources.** Section 2.19.010, Purpose, states that certain lands and geographic areas within the city of San Rafael contain significant archaeological resources, which include deposits and remains of the local Native Americans and other early inhabitants. These deposits and remains represent an important part of the early history of San Rafael and the culture of the Native American community. Without proper regulations and monitoring, continued excavation and grading activities within the city could significantly impact these resources.
>
> In recognizing the importance of protecting significant archaeological resources, the City of San Rafael has determined to:
>
> - Establish a procedure for identifying, when possible, archaeological resources and potential impacts to such resources prior to authorizing excavation and grading activities;
> - Provide valuable information and direction to property owners in the community in order to make them aware of these resources;
> - Implement measures that would preserve and protect valuable archaeological resources, when there is a potential for encountering such resources;
> - Establish a procedure which would ensure that appropriate advisory agencies and organizations are contacted and consulted, when there is a probability that archaeological resources could be encountered during an activity involving grading, excavation, and/or construction; and
> - Establish and implement specific protection and preservation measure in the event archaeological resources are encountered during grading, excavation and/or construction.

4.5.2 Impacts and Mitigation Measures

This section discusses potential tribal cultural resources impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the potential impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

4.5.2.1 Criteria of Significance

The project would have a significant impact related to tribal cultural resources if it would:

Threshold 4.5.1: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a

California Native American tribe, and that is: (i) listed or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k); or (ii) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.5.2.2 Project Impacts

The following section discusses the potential tribal cultural resource impacts associated with implementation of the proposed project. Impacts would be the same under the development of Phases 1 and 2; therefore, impacts of phasing are not differentiated in the discussion below and are focused on total project buildout.

Threshold 4.5.1: Adverse Changes to the Significance of a Tribal Cultural Resource. The City has not received any requests from Native American tribes to be notified of projects within the city pursuant to AB 52**.** On November 30, 2021, the City submitted to the NAHC a request for a list of Native American tribes that could be culturally and traditionally affiliated with the project area and requested a search of the Sacred Lands File (SLF). On February 22, 2022, the NAHC responded with a list of two Native American tribes and indicated that the SLF search was positive with a recommendation to contact the Federated Indians of Graton Rancheria (FIGR). The City notified the FIGR and the Guidiville Indian Rancheria of the proposed project and invited the tribes to consult on the proposed project in a letter dated March 16, 2022. On March 29, 2022, the FIGR responded in writing with a request to consult with the City pursuant to AB 52. No response was received from the Guidiville Indian Rancheria.

The City responded to the FIGR on April 6, 2022 and provided a copy of the Archaeological Report prepared for the proposed project. An initial tribal consultation meeting with the FIGR was held on June 22, 2022. The tribal representatives who attended the initial consultation meeting asked for an overview of the proposed project and to review the conclusions and recommendations from the Archaeological Report. The tribal representatives expressed a concern about the project site being located within a tribally sensitive area. In particular, concerns were raised related to monitoring the site for tribal cultural resources during various phases of construction of the project (i.e., ensuring that monitoring would occur during all potential ground-disturbing activities) and whether a testing program could be implemented after demolition but prior to any ground-disturbing activities (i.e., prior to excavation or grading not related to demolition). This is a potentially significant impact.

In response, on August 29, 2022, the City provided the FIGR with draft mitigation measures designed to reduce the potential impacts identified during the initial consultation meeting. These measures were developed utilizing standards implemented for other development projects within sensitive tribal areas throughout San Rafael and tailored to the project site. The FIGR provided suggested revisions to the mitigation measures on November 3, 2022, which the City concurred with and agreed to implement for the proposed project. On November 28, 2022, the City informed the FIGR

representative in writing that the City considered consultation pursuant to AB 52 to be concluded. No further communications from the FIGR representative were received.

Impact TCR-1 Project ground disturbance has the potential to disturb, damage, or degrade either a tribal cultural resource or the contextual setting of such a resource, resulting in a substantial loss of the resource's cultural value as determined in consultation with the Federated Indians of Graton Rancheria. (S)

Although the project site is fully developed, tribal cultural resources still may exist below the paved areas on the project site that originally experienced limited and shallow soil disturbance, or at a deeper depth below existing buildings with shallow foundations. Additionally, as described in Section 4.6, Geology and Soils, the eastern portion of the site is covered by fill up to 20 feet deep. Placement of fill materials could have removed or dispersed native soils and any associated archaeological materials across the site. While excavation across the entire project site is not anticipated to extend to this depth, excavation could occur to this depth in areas of the project site, especially where basement levels are being removed or utility trenches would be installed. If significant tribal cultural resources are unearthed during project construction, a substantial adverse change in their significance could occur from their demolition, destruction, relocation, or alteration such that the significance of the resources would be materially impaired through loss of information important to the FIGR. The proposed project would have a potentially significant impact on tribal cultural resources unless the measures prescribed under Mitigation Measures TCR-1a and TCR-1b are implemented.

Mitigation Measure TCR-1a **Native American Monitoring.** Native American monitoring by a representative of the Federated Indians of Graton Rancheria (FIGR) shall be required during all initial ground-disturbing activities on the project site (including building foundation removal). Any excavations that extend below sediments that were previously monitored shall be subject to Native American monitoring.

Monitoring procedures shall follow the Cultural Resources Monitoring Plan prepared under Mitigation Measure CUL-1a as described in Section 4.4 of the EIR. Construction crews shall stop all work within 100 feet of any tribal cultural resource discovery until the find has been assessed by an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology and by FIGR. Native American archaeological materials and tribal cultural resources could include obsidian and chert flaked stone tools (e.g., projectile and dart points), midden (culturally derived darkened soil containing heat-affected rock, artifacts, animal bones, and/or shellfish remains), and/or groundstone implements (e.g., mortars and pestles).

Mitigation Measure TCR-1b **Survey of Site by Trained Human Remains Detection Dogs.** Prior to the issuance of a grading or building permit, the project sponsor shall provide written evidence to the City's Community

Development Department that a consultant has been retained to conduct a survey of the site using trained human remains detection dogs with an FIGR tribal monitor present. The survey shall be performed after the demolition of structures, structure foundations, and paved areas but prior to when trenching, grading, or earthwork on the project site commences. If the survey results in the identification of an area potentially containing human remains, the area should be avoided. If avoidance of such areas is not feasible, then the City shall require that a professional archaeologist be retained to conduct subsurface testing in the presence of a tribal representative from the FIGR to verify the presence or absence of remains. If human remains are confirmed, then the procedures in Mitigation Measure CUL-1c shall be followed. (LTS)

The mitigation measures described under Mitigation Measures TCR-1a and TCR-1b would ensure that: (1) a tribal monitor from the FIGR would be present during initial ground-disturbing activities, and if tribal cultural resources are identified during these activities, these resources would be evaluated, documented, and studied in accordance with standard archaeological practice and under the supervision of the FIGR; and (2) the project site would be surveyed when bare soil is present, and any areas potentially containing human remains would either be avoided or treated in accordance with appropriate State codes and regulations under the supervision of the FIGR. As such, implementation of these mitigation measures would ensure that the project's potential impacts to tribal cultural resources would be **less than significant with mitigation**.

4.5.2.3 Cumulative Impacts

For tribal cultural resources, the scope for assessing cumulative impacts depends on the nature of the resources and relevant current or probable future projects under review by the City within the vicinity of the project site. The proposed project would have a significant effect on the environment if it would make a cumulatively considerable contribution to a significant cumulative impact on tribal cultural resources.

There are no recent past, current, or probable future projects under City review in the vicinity of the project site that have been determined to affect known tribal cultural resources. However, similar to the proposed project, ground disturbance associated with future projects that could be implemented under buildout of the General Plan could result in potentially significant impacts on previously unidentified tribal cultural resources. However, impacts on resources accidentally discovered during implementation of these future projects would be mitigated to **less than significant** levels with appropriate mitigation measures adopted as conditions of approval that are similar to project Mitigation Measures TCR-1a and TCR-1b. Similar to the proposed project, the City would impose standard conditions related to the accidental discovery of tribal cultural resources that notify and consult with Native American tribes pursuant to AB 52 and require archaeological surveys for all projects subject to CEQA that include ground-disturbing activities. Collectively, probable future projects that may occur in the vicinity—including the proposed project—would not result in a cumulative increase in impacts on tribal cultural resources because these resources would be avoided or otherwise removed, analyzed, and reported (i.e., by a qualified archaeologist).

However, as noted above, the City has identified no such current or probable future projects in the vicinity of the proposed project site. Accordingly, the proposed project would not make a cumulatively considerable contribution to any significant cumulative impacts to tribal cultural resources, and this impact would be **less than significant**.

4.6 GEOLOGY AND SOILS

This section describes the soils, geologic, and seismic environment in the vicinity of the project site; discusses the federal, State, and local regulations pertinent to soils, geology, and seismicity; assesses the potential impacts related to geology and soils that would occur as a result of project implementation; and identifies mitigation measures, where appropriate, to address those impacts.

The evaluation in this section is based on information obtained from the Geotechnical Investigation[1] (refer to Appendix D) prepared for the project and geologic reports and maps from the United States Geological Survey (USGS) and California Geological Survey (CGS), among others.

4.6.1 Setting

The existing geologic, soil, and seismic conditions and potential for paleontological resources at the project site and vicinity are discussed below. The regulatory framework related to geology, seismicity, soils and building safety, and paleontological resources is also discussed.

4.6.1.1 Geologic Conditions

The topography, geology, and soil and groundwater conditions for the project site and its vicinity are described below.

Topography. The project site is generally level. The existing ground surface elevation of the project site ranges from approximately 30 to 40 feet referenced to the North American Vertical Datum of 1988 (NAVD 88), and generally slopes gently down towards the east.[2]

Geology. The project site is located within the Coast Ranges geomorphic province,[3] which is a relatively geologically young and seismically active region.[4] The Coast Ranges are mountain ranges (approximately 2,000 to 4,000 feet, and in some areas 6,000 feet, in elevation above sea level) and valleys that trend northwest, approximately parallel to the San Andreas Fault, from near the Oregon border to southern California. The only major break in the Coast Ranges is the depression containing the San Francisco Bay region within which the project site is located.[5] Geologic mapping indicates that the project site is underlain by Holocene alluvium and Franciscan Complex mélange.[6]

Soils and Groundwater Conditions. The project site was developed by cutting into a steep ridge that was present on the western side of the project site. The excavated material was then placed as fill to level the eastern portion of the project site. Therefore, the western portion of the project site is predominantly underlain by shallow bedrock, while the eastern portion of the project site is

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1 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

2 Ibid.

3 A geomorphic province is a naturally defined geologic region that displays a distinct combination of features based on geology, faults, topography, and climate. Eleven geomorphic provinces are recognized in California.

4 Norris, Robert M., and Robert W. Webb. 1976. *Geology of California*, 2nd Edition. J. Wiley & Sons, Inc.

5 California Geological Survey (CGS). 2002a. California Geomorphic Provinces, Note 36.

6 Graymar et al. 2006. Geologic Map of the San Francisco Bay Region.

underlain by areas of fill material up to 20 feet thick. It is not known whether fill material was placed on the project site in a compacted (engineered) manner; therefore, it is considered "undocumented." The thicknesses of undocumented fill ranges from approximately 2 to 20 feet and generally consists of medium to very stiff clay with varying amounts of sand and gravel with interbedded layers of medium dense to very dense sand and gravel with varying fines contents. The clayey fill is low to moderately expansive.[7]

The undocumented fill is underlain by native soil characterized as alluvial deposits and residual soil[8] that varies in thickness from 1 to 22 feet where present. Alluvial deposits generally consist of medium stiff to hard clays with varying amounts of sand. However, areas of medium dense clayey silty sand and soft clay were encountered below the undocumented fill in the southeast and northeast portions of the project site. Residual soil consisting of very stiff sandy clay was encountered at various depths below the project site.[9]

Bedrock was encountered beneath the project site at depths ranging from approximately 1 to 41 feet and generally consists of interbedded shale and sandstone, shale, sandstone, siltstone, and claystone. Bedrock beneath the project site is predominantly crushed to closely fractured, low to moderate hardness, friable to moderately strong, little to deeply weathered, and oxidized.[10]

Groundwater has been encountered at depths ranging between approximately 11 feet and 33 feet beneath the project site during previous geotechnical investigations. Seasonal fluctuations in rainfall influence groundwater levels and may cause several feet of variation.[11] Groundwater was encountered at depths as shallow as approximately 7 to 10 feet in the southeast portion of the project site during groundwater sampling activities performed in June 2017.[12]

4.6.1.2 Seismic Conditions

The entire San Francisco Bay region is located within the San Andreas Fault Zone, a complex of active faults. Numerous historic earthquakes have been generated in northern California by the San Andreas Fault Zone. This level of active seismicity results in relatively high seismic risk in the San Francisco Bay region.

The project site is vulnerable to seismic activity based on the presence of several active faults in the region. An active fault is one that has experienced displacement within the last 11,700 years[13] and is

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7 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California.* December 22.

8 Soil formed from highly weathered rock.

9 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California.* December 22.

10 Ibid.

11 Ibid.

12 TŌR Environmental, Inc. 2017. *Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California*. August 22.

13 California Geological Survey (CGS). 2018. Special Publication 42, *Earthquake Fault Zones, A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards In California*.

expected to move again at some point in the future. The Hayward and San Andreas Faults are the major active faults closest to the project site.

The Working Group on California Earthquake Probabilities and the USGS have predicted a 33 percent probability of a Moment Magnitude (M_W)[14] 6.7 or greater earthquake on the Hayward Fault between 2014 and 2043, a 22 percent chance on the San Andreas Fault, and a total probability of 72 percent that an earthquake of M_W 6.7 or greater will occur on one of the regional San Francisco Bay Area (Bay Area) faults during that time.[15]

4.6.1.3 Seismic and Geologic Hazards

Seismic hazards are generally classified in two categories: primary seismic hazards (i.e., surface fault rupture and ground shaking) and secondary seismic hazards (i.e., liquefaction and other types of seismically induced ground failure). Each of these hazards are discussed below.

Surface Rupture. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. Surface rupture generally can be assumed to occur along an active or potentially active major fault trace. Areas that are most susceptible to fault rupture are delineated by the CGS Alquist-Priolo Earthquake Fault Zones. The project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Earthquake Fault Zone to the project site is the Hayward Fault, which is located about 9.5 miles east of the project site.[16] No known active or potentially active faults exist on the project site.[17]

Ground Shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The Modified Mercalli Intensity (MMI) Scale is the most commonly used scale for measurement of the subjective effects of earthquake intensity (Table 4.6.A). The MMI values range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from VI to XII can cause moderate to significant structural damage.[18]During a major earthquake, strong to very strong ground shaking is expected to occur at the project site.[19]

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14 M_W, as opposed to Richter Magnitude, is now commonly used to characterize seismic events. M_W is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance to rupture of the rock type along the fault.

15 United States Geological Survey (USGS). 2016. Earthquake Outlook for the San Francisco Bay Region 2014–2043, USGS Fact Sheet 2016-3020, revised August.

16 California Geological Survey (CGS). 2023. Earthquake Zones of Required Investigation. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed March 8, 2023).

17 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

18 California Geological Survey (CGS). 2002b. How Earthquakes and Their Effects are Measured, Note 32.

19 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

Table 4.6.A: Modified Mercalli Scale

Intensity Level	Description
I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like the passing of a truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in a building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Board fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: California Geologic Survey (CGS). 2002b. How Earthquakes and Their Effects are Measured, Note 32.

Liquefaction, Lateral Spreading, and Seismic Settlement. Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Because saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. The potential for liquefaction-induced ground failure (e.g., loss of bearing strength, ground fissures, sand boils) depends on the thickness of the liquefiable soil layer relative to the thickness of the overlying non-liquefiable material. The project site is located in an area where liquefaction hazards have not been mapped by CGS.[20] The materials below the groundwater table at the project

[20] California Geological Survey (CGS). 2023. Earthquake Zones of Required Investigation. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed March 8, 2023).

site level are predominantly clayey or bedrock; therefore, the potential for liquefaction settlement at the project site is low.[21]

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. In a lateral spread failure, a layer of soil at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward a river channel or other bank. The lateral spreading hazard tends to mirror the liquefaction hazard for a site, assuming a free face is located nearby. Because the potential for liquefaction at the project site is low, the potential for lateral spreading to occur at the project site is also low. [22]

Seismic settlement (also referred to as cyclic densification or differential compaction) can occur when non-saturated, cohesionless sand or gravel soil is densified by earthquake vibrations. When the degree of cyclic densification varies based on variations in soil types, differential (i.e., unequal) settlement may occur that can result in greater damage to improvements compared to relatively equal settlement. The materials above the groundwater table at the project site are sufficiently cohesive and/or dense such that the potential for cyclic densification at the project site is low.[23]

Static Settlement and Differential Settlement. Static settlement is the lowering of the land surface elevation as a result of loading (i.e., placing heavy loads, typically fill or structures), which often occurs with the development of a site. Differential settlement could occur if buildings or other improvements are built on variable low-strength foundation materials (including imported, non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Static settlement and differential settlement generally occur slowly enough that their effects are not dangerous to inhabitants, but they can cause significant building damage over time.

The western portion of the project site is generally underlain by shallow bedrock, while the eastern portion of the project site is underlain by undocumented fill and native soil above bedrock. Where explored, the undocumented fill appears to be comprised of relatively stiff clay; however, it cannot be confirmed that the fill was placed in an engineered fashion across the entire project site.[24] Based on the presence of varying thicknesses of undocumented fill and native soil, the project site could be susceptible to static settlement and differential settlement under new loads.

Subsidence or Collapse. Subsidence is the lowering of the land-surface elevation. Subsidence or collapse can result from the removal of subsurface water resulting in either catastrophic or gradual depression of the ground surface elevation. The mechanism for subsidence is generally groundwater pumping that lowers groundwater elevations and subsequent consolidation of loose aquifer sediments and/or drying of expansive clayey soil. The primary hazards associated with subsidence are increased flooding hazards and damage to underground utilities as well as above-ground structures. Other effects of subsidence include changes in the gradients of stormwater and sanitary

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21 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

22 Ibid.

23 Ibid.

24 Ibid.

sewer drainage systems in which the flow is gravity driven. Areas of the project site that are underlain by undocumented fill and/or native soils that are clayey and/or loose could be subject to subsidence due to the removal of groundwater.

Expansive Soils. Expansion and contraction of soil volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume. Shrink-swell potential is also influenced by the location of the soils; soils below the groundwater table maintain a steady moisture content and would therefore not be subject to shrink-swell effects. As a consequence of volume changes due to expansive soils, structural damage to buildings and infrastructure can occur if potentially expansive soils are not considered in project design and during construction. The clayey fill soil at the project site has been found to be low to moderately expansive.[25]

Landslides. Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous movement (creep) on slopes of varying steepness. Areas susceptible to landslides are characterized by steep slopes and downslope creep of surface materials. Slope failures can be triggered by seismic events, heavy rainfall, or grading/excavation activities. Seismically induced landslide hazards have not been mapped by CGS for the project site and surrounding areas.[26] The project site is generally level and therefore would not be subject to landslides. There is a steep slope located adjacent to the west of the project site across Northgate Drive. This steep slope has been graded, benched, and planted with trees, and much of the slope has exposed bedrock. Based on these characteristics, this adjacent slope does not appear to be at risk of significant soil creep or slope failures that could affect the project site; however, there are some boulders present on the ground surface along the base of this slope that suggest rockfall hazards could be present at the base of this slope. Because this slope has been benched, which significantly reduces rockfall hazards, and the project site is approximately 100 feet away from the base of this slope, potential rockfall from this slope would not be expected to affect the project site.

4.6.1.4 Paleontological Conditions

Paleontological resources include fossilized remains or traces of organisms, including plants, vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and microscopic plants and animals (microfossils) as well as their imprints from a previous geological period. Collecting localities and the geologic formations containing those localities are also considered paleontological resources because they represent a limited, non-renewable resource that once destroyed cannot be replaced. The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on non-renewable paleontological resources. The SVP has helped define the value of paleontological resources and, in particular, states that significant paleontological resources are fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon

[25] Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

[26] California Geological Survey (CGS). 2023. Earthquake Zones of Required Investigation. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed March 8, 2023).

invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 years).[27]

A search of paleontological localities in the fossil collections database maintained by the University of California Museum of Paleontology identified 369 fossil localities within Marin County, including plants, invertebrates, vertebrates, and microfossils. The precise locations of the fossil localities are not provided in the database, and for many of the localities there is no information provided to infer even the general location within Marin County; however, based on the available information, it appears there are several localities potentially near the project site, including the following:[28]

- An invertebrate fossil locality identified as "San Rafael" of Quaternary age
- An invertebrate fossil locality identified as "San Rafael quad" of possible Triassic age
- An invertebrate fossil locality identified as "San Quentin" of Quaternary age
- An invertebrate fossil locality identified as "San Pedro Point" of Quaternary age
- Two invertebrate fossil localities identified as "China Camp" of Quaternary age

The fill materials underlying the project site would not be expected to contain paleontological resources because fossils are not generally preserved in fill materials due to the highly disturbed nature of fill materials. Based on the presence of many previously discovered paleontological resources in Marin County and potentially near the project site, the native soils and bedrock underlying the project site could potentially contain paleontological resources.

4.6.1.5 Regulatory Framework

Federal, State, and local regulations and programs related to geology, seismicity, soils, and building safety that are applicable to the project are also described below.

Federal Regulations. Federal regulations applicable to the proposed project include the National Earthquake Hazards and Reduction Program, as described below.

> ***National Earthquake Hazards Reduction Program.*** The National Earthquake Hazards Reduction Program (NEHRP) was established by the United States Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law 95–124. In establishing the NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic NEHRP goals are:

[27] Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.

[28] University of California Museum of Paleontology. 2023. Collections Database, Locality Search. Website: https://ucmpdb.berkeley.edu/loc.html (accessed March 15, 2023).

1. Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
2. Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
3. Improve earthquake hazards identification and risk assessment methods, and their use.
4. Improve the understanding of earthquakes and their effects.

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide State, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State Regulations. State regulations applicable to the proposed project include the Alquist-Priolo Earthquake Fault Zoning Act, the Seismic Hazards Mapping Act, and the California Building Code, as described below.

Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972, and its main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active earthquake faults. The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of known active faults and to issue appropriate maps. "Earthquake Fault Zones" were called "Special Studies Zones" prior to January 1, 1994. The maps are distributed to all affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. As mentioned above, the project site is not located within an area mapped as subject to surface rupture under the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults cross the project site.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act of 1990 (Public Resources Code [PRC], Sections 2690-2699.6) directs the CGS to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the Seismic Hazards Mapping Act is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards. The Seismic Hazards Mapping Act was passed by the legislature following the 1989 Loma Prieta earthquake. As a result, CGS geologists gather existing geological, geophysical, and geotechnical data from numerous sources to produce the Seismic Hazard Zone Maps. They integrate and interpret this data regionally in order to evaluate the severity of the seismic hazards and designate areas prone to ground rupture, liquefaction, and earthquake-induced landslides as Zones of Required Investigation. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations be conducted within Zones of Required Investigation to identify and evaluate seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy. The CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground rupture, and landslides (primarily

the Bay Area and the Los Angeles basin). The project site is located in an area where liquefaction hazards and seismically induced landslide hazards have not been mapped by CGS.[29]

California Building Code. The 2022 California Building Code, which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations (CCR), is based on the 2021 International Building Code, and is the most current State building code. The 2022 California Building Code covers grading and other geotechnical issues, building specifications, and non-building structures. The design of the proposed project would be required to conform to the current California Building Code at the time of plan review, which is currently the 2022 California Building Code (which went into effect on January 1, 2023).

The California Building Code requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards. Preparation of a geologic engineering report is also required for buildings less than or equal to 4,000 square feet except for one-story, wood-frame, and light-steel-frame buildings that are located outside of the Alquist-Priolo Earthquake Fault Zones or Seismic Hazard Zones mapped by the CGS. The purpose of the geotechnical investigation is to identify seismic and geologic conditions that require project mitigation (e.g., ground shaking, liquefaction, differential settlement, and expansive soils). Based on the conditions of the site, the California Building Code requires specific design parameters to ensure construction of buildings that will resist collapse during an earthquake and damage from adverse soil conditions. These design parameters do not protect buildings from all earthquake-shaking hazards but are designed to reduce hazards to a manageable level. Requirements for the geotechnical investigation are presented in Chapter 16 “Structural Design” and Chapter 18 “Soils and Foundation” of the 2022 California Building Code.

Local Regulations. The City of San Rafael (City) General Plan and Municipal Code requirements related to geology and soils are described below.

San Rafael General Plan 2040. The City’s General Plan 2040[30] contains goals, policies, and programs pertaining to geology and soils that would be applicable to the project, as listed below.

Goal CDP-5: Protection of Cultural Heritage. Protect and maintain San Rafael’s historic and archaeological resources as visible reminders of the city’s cultural heritage.

Policy CDP-5.15: Paleontological Resource Protection. Prohibit the damage or destruction of paleontological resources, including prehistorically significant fossils, ruins, monuments, or objects of antiquity, that could potentially be caused by future development.

Program CDP-5.15A: Paleontological Resource Mitigation Protocol. Prepare and adopt a list of protocols in accordance with Society of Vertebrate Paleontology

[29] California Geological Survey (CGS). 2023. Earthquake Zones of Required Investigation. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed March 8, 2023).

[30] City of San Rafael. 2021. San Rafael General Plan 2040. August 2.

standards that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.

Goal S-2: Resilience to Geologic Hazards. Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, mudslides, erosion, sedimentation, and settlement.

Policy S-2.1: Seismic Safety of New Buildings. Design and construct all new buildings to resist stresses produced by earthquakes. The minimum level of seismic design shall be in accordance with the most recently adopted building code as required by State law.

Program S-2.1A: Seismic Design. Adopt and enforce State building codes which ensure that new or altered structures meet the minimum seismic standards set by State law. State codes may be amended as needed to reflect local conditions.

Program S-2.1B: Geotechnical Review. Continue to require soil and geologic hazard studies and peer review for proposed development as set forth in the City's Geotechnical Review Matrix. These studies should determine the extent of geotechnical hazards, optimum design for structures and the suitability and feasibility of proposed development for its location, the need for special structural requirements, and measures to mitigate any identified hazards. Periodically review and update the Geotechnical Review Matrix to ensure that it supports and implements the Local Hazard Mitigation Plan by identifying potentially hazardous areas. Consider removing the procedures from the General Plan and instead adopting them as part of the Zoning Ordinance or through a separate resolution.

Program S-2.1C: Earthquake Hazard Study. As recommended by the Local Hazard Mitigation Plan, complete an Earthquake Hazard Study that examines geologic hazards in the city.

Policy S-2.2: Minimize the Potential Effects of Landslides. Development proposed in areas with existing or potential landslides (as identified by a Certified Engineering Geologist, Registered Geotechnical Engineer, or the LHMP) shall not be endangered by, or contribute to, hazardous conditions on the site or adjoining properties. Landslide mitigation should consider multiple options in order to reduce potential secondary impacts (loss of vegetation, site grading, traffic, visual). The City will only approve new development in areas of identified landslide hazard if the hazard can be appropriately mitigated, including erosion control and replacement of vegetation.

Program S-2.2A: Landslide Mitigation and Repair Projects. Undertake landslide hazard mitigation and repair projects, as outlined in the LHMP. These projects include a landslide identification and management program, repair of the Fairhills Drive landslide, and repair of the Bret Harte sewer easement.

Policy S-2.3: Seismic Safety of Existing Buildings. Encourage the rehabilitation or elimination of structures susceptible to collapse or failure in an earthquake. Historic buildings shall be treated in accordance with the Historic Preservation Ordinance and Historic Building Code (see also Program CDP-5.5A).

Program S-2.3A: Seismic Safety Building Reinforcement. Enforce State and local requirements for reinforcement of existing buildings, including the city's remaining unreinforced masonry (URM) buildings.

Policy S-2.4: Post-Earthquake Inspections. Require post-earthquake inspections of critical facilities and other impacted buildings and restrict entry into compromised structures as appropriate. Following a major earthquake, inspections shall be conducted as necessary in conjunction with other non-City public agencies and private parties to ensure the structural integrity of water storage facilities, storm drainage structures, sewer lines and treatment facilities, transmission and tele-communication facilities, major roadways, bridges, elevated freeways, levees, canal banks, and other important utilities and essential facilities.

Program S-2.4A: Inspection List. Develop and maintain a list of facilities that would be inspected after a major earthquake, including City-owned essential or hazardous facilities. Facilities on the list should be prioritized for inspection-scheduling purposes.

Policy S-2.5: Erosion Control. Require appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures should incorporate best management practices (BMPs) and should be coordinated with requirements for on-site water retention, water quality improvements, and runoff control.

Program S-2.5A: Erosion and Sediment Control Plans. Require Erosion and Sediment Control Plans (ESCPs) for projects meeting the criteria defined by the Marin County Stormwater Pollution Prevention Program, including those requiring grading permits and those with the potential for significant erosion and sediment discharges. Projects that disturb more than one acre of soil must prepare a Stormwater Pollution Prevention Plan, pursuant to State law.

Program S-2.5B: Grading During the Wet Season. Avoid grading during the wet season due to soil instability and sedimentation risks, unless the City Engineer determines such risks will not be present. Require that development projects implement erosion and/or sediment control measures and runoff discharge measures based on their potential to impact storm drains, drainageways, and creeks.

Appendix F of the San Rafael General Plan 2040 outlines geotechnical review requirements for development projects and requires various geotechnical reports that are based on different types of proposed land uses and geologic/seismic characteristics of a site to be submitted to the City at different stages of project review. The types of geotechnical reports that may be required include a Preliminary Geotechnical Report, a Geotechnical Investigation Report, Construction Observation Report, and Geotechnical Review. A Preliminary Geotechnical Report and/or Geotechnical Investigation Report are required during the planning and permitting stages of projects. A Geotechnical Review by the City's Geotechnical Review Consultant is required during the planning and permitting stages for certain projects that have higher geologic/seismic risks due to the proposed land use and/or geologic/seismic characteristics of a site. A Construction

Observation Report is required prior to the City issuing an Occupancy Permit or Notice of Completion for projects.

Municipal Code. Section 9.30.140 of the Municipal Code requires construction-phase Best Management Practices (BMPs) to include erosion and sediment controls and pollution prevention practices. Erosion control BMPs may include, but are not limited to, scheduling and timing of grading activities, timely revegetation of graded areas, the use of hydroseed and hydraulic mulches, and installation of erosion control blankets. Sediment control may include properly sized detention basins, dams, or filters to reduce entry of suspended sediment into the storm drain system and watercourses, and installation of construction entrances to prevent tracking of sediment onto adjacent streets. Section 9.30.150 of the Municipal Code requires an Erosion and Sediment Control Plan for any construction subject to a grading permit or that may have the potential for significant erosion. A Stormwater Pollution Prevention Plan (SWPPP) required by the Construction General Permit may be provided in lieu of the Erosion and Sediment Control Plan provided it meets the City's requirements.

Section 12.100 of the Municipal Code adopts the 2022 California Building Code, Chapters 2 through 28, 30, 31, 32, 33, and 35, and Appendices C, H, I, N and O. Section 12.100.020 of the San Rafael Municipal Code indicate that the local seismic design category is D/D2. Minor City-specific amendments to the California Building Code are contained in Section12.200.

Section 14.16.170 of the Municipal Code requires geotechnical reports to be submitted with development applications consistent with the geotechnical report requirements in San Rafael General Plan 2040. The reports must assess hazards such as seismic hazards, liquefaction, landslides, mudslides, erosion, sedimentation and settlement, and hazardous soils conditions to determine the optimum location for structures. The geotechnical reports must also advise of special structural requirements and evaluate the feasibility and desirability of a proposed facility in a specific location.

4.6.2 Impacts and Mitigation Measures

The following describes the potential impacts of the proposed project related to geology and soils. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as necessary.

4.6.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to geology and soils if it would:

Threshold 4.6.1: Directly or indirectly cause a substantial risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zones Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;

Threshold 4.6.2: Directly or indirectly cause a substantial risk of loss, injury, or death involving the construction of new buildings for human occupancy or other infrastructure or structures that would not comply with the most recently adopted California Building Code seismic standards applicable to ground shaking events;

Threshold 4.6.3: Result in the construction of new buildings for human occupancy or other infrastructure or structures within areas subject to seismic-related ground failure or collapse, liquefaction, or expansive soils and would not comply with the most recently adopted California Building Code standards;

Threshold 4.6.4: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse; or

Threshold 4.6.5: Directly or indirectly destroy or substantially damage a unique paleontological resource or site or unique geologic feature.

Potential impacts associated with soil erosion or loss of topsoil during project construction is addressed in Section 4.7, Hydrology and Water Quality. The proposed project does not include the use of alternative wastewater systems and would connect to existing and planned sewer infrastructure. Therefore, these topics are not addressed in this section.

4.6.2.2 Project Impacts

The following section discusses potential impacts related to geology and soils associated with development of the proposed project based on the significance thresholds described above in Section 4.6.2.1. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) would not differ by phase and therefore are not differentiated in this section.

Threshold 4.6.1: Surface Rupture. The project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone,[31] and no known active or potentially active faults exist on the project site.[32] Therefore, there would be **no impact** related to surface fault rupture.

Threshold 4.6.2: Ground Shaking. During a major earthquake, strong to very strong ground shaking is expected to occur at the project site.[33] The risk to structures and improvements from ground shaking impacts is reduced through adherence to the design and materials standards set forth in the California Building Code and recommendations in a site-specific geotechnical report, which is required for the proposed project by the California Building Code, the San Rafael General Plan 2040, and the San Rafael Municipal Code.

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31 California Geological Survey (CGS). 2023. Earthquake Zones of Required Investigation. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed March 8, 2023).

32 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

33 Ibid.

The Geotechnical Investigation recommends that the proposed buildings be designed using seismic Site Class C or D depending on the thickness of fill in the vicinity of the structure. The Geotechnical Investigation indicates that seismic Site Class C should be used for the western portion of the project site, which has shallower fill and bedrock, and seismic Site Class D should be used for the eastern portion of the project site, which has deeper fill and bedrock. The Geotechnical Investigation provides recommended seismic design parameters for the different site classes, including the Risk-Targeted Maximum Considered Earthquake (MCE_R), Site Coefficients, MCE_R spectral response acceleration parameters, Design Earthquake (DE) spectral response acceleration parameters, and peak ground acceleration. The Geotechnical Investigation also indicates that the project structural engineer would need to determine if site-specific spectra response analysis[34] would be required during the design-level geotechnical study of the project.[35]

The required design and construction of the proposed project in accordance with the recommendations of the Geotechnical Investigation and requirements of the California Building Code, San Rafael General Plan 2040, and San Rafael Municipal Code would ensure that potential impacts related to seismic ground shaking would be **less than significant**.

Threshold 4.6.3: Seismic-Related Ground Failure or Collapse, Liquefaction, or Expansive Soils. Potential impacts associated with the construction of new buildings for human occupancy or other infrastructure or structures within areas subject to seismic-related ground failure or collapse, liquefaction, or expansive soils that would not comply with the most recently adopted California Building Code standards are discussed below.

Liquefaction. The Geotechnical Investigation indicates that the materials below the groundwater table at the project site level are predominantly clayey or bedrock; therefore, the potential for liquefaction settlement at the project site is low. The Geotechnical Investigation recommends that foundations for the proposed structures consist of shallow foundations on bedrock, shallow foundations on ground improvement[36] bearing solely in either competent native soil or bedrock (for each individual structure, the ground improvement should extend to similar material), or deep foundations (consisting of auger-cast-in-place piles) to bedrock. Considering the variable depths to bedrock within portions of the project site, a combination of these foundation types, all bearing in bedrock, may be used across a single building footprint.

Construction of foundations in accordance with the recommendations of the Geotechnical Investigation (additional details on ground improvement and foundation recommendations are discussed under Threshold 4.6.4 below) is required by the California Building Code and the City's General Plan 2040 and Municipal Code, and would ensure that proposed structures would not be susceptible to liquefaction-induced settlement because building loads would bear on

[34] Site-specific spectra response analysis involves regional seismic hazard analyses and site-specific soil conditions and response analyses for defining seismic actions on a structure.

[35] Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

[36] Ground improvement involves increasing the density and strength of soil. The Geotechnical Investigation indicates that the most appropriate methods to perform ground improvement at the project site would include compacted aggregate piers or drilled displacement columns.

improved ground, competent native material, or bedrock, which would not be susceptible to liquefaction-induced settlement. Therefore, potential impacts related to liquefaction would be **less than significant**.

Seismic Settlement/Collapse. Seismic settlement can result in collapse of the ground surface in areas where subsurface materials above the groundwater table are loose and not cohesive. The materials above the groundwater table at the project site are sufficiently cohesive and/or dense such that the potential for seismic settlement at the project site is low.[37] Project grading activities would include compaction of any new fill materials in accordance with the recommendation of the Geotechnical Investigation, which would ensure that the new fill materials would not be subject to seismic settlement. In addition, construction of foundations in accordance with the recommendations of the Geotechnical Investigation and California Building Code would ensure that proposed structures would not be susceptible to seismic settlement because building loads would bear on improved ground, competent native material, or bedrock, which is not susceptible to significant seismic settlement. Therefore, potential impacts related to seismic settlement/collapse would be **less than significant**.

Expansive Soil. The clayey fill soil at the project site has been found to be low to moderately expansive.[38] Expansive soils have the potential to damage proposed foundations/floor slabs, utilities, and pavements due to moisture fluctuations if appropriate engineering is not incorporated into the project design. Potential causes of moisture fluctuations in soil could include drying during construction and subsequent wetting from rain, capillary rise, landscape irrigation, poor drainage, and type of plant selection.

The Geotechnical Investigation includes recommendations to address expansive soils (including the selection, placement, and compaction of engineered fill beneath proposed improvements) and maintaining surface drainage so that runoff would be collected in lined ditches or drainage swales and would not pond adjacent to foundations, roadways, pavements, retaining walls, or slabs. The Geotechnical Investigation indicates that excavated on-site soil is generally not suitable from a geotechnical perspective for reuse as engineered fill or backfill due to the moderate expansion potential of the soil; however, this soil may be used as general fill outside of building footprints if at least 12 inches of material that meets geotechnical requirements (which includes low to moderate expansion potential) is placed over it.[39]

Implementation of the recommendations from the Geotechnical Investigation would ensure that structures and other improvements would be designed and constructed to account for potentially expansive soils. The project design currently includes the reuse of a large quantity of excavated on-site soil to backfill the basement area of the RH Outlet building, and the proposed Residential 2 building is planned to be constructed over a portion of this basement area. Although the Geotechnical Investigation indicates that that the on-site soil should not be used as engineered fill or backfill within new building footprints, the project's Geotechnical Engineer

[37] Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

[38] Ibid.

[39] Ibid.

later indicated that they would allow the use of existing on-site soil in the basement backfill provided at least 12 inches of engineered fill is placed over it.[40] The Preliminary Stormwater Control Plan for the project indicates that stormwater bioretention planters would be lined with concrete on their sides; however, the bottoms of the planters would not be lined,[41] which could conflict with the recommendation of the Geotechnical Investigation that runoff should be collected in lined ditches or drainage swales and could therefore result in damage to proposed and existing improvements due to expansive soil conditions. This would be a **potentially significant** impact.

Impact GEO-1 Proposed and existing improvements could be damaged due to expansive soil conditions. (S)

In order to control the risk of damage to proposed and existing improvements due to expansive soil conditions, the project sponsor shall implement Mitigation Measure GEO-1.

Mitigation Measure GEO-1 **Lining of Bioretention Planters.** The project geotechnical engineer shall review the proposed bioretention planter designs for the project to determine whether the designs meet the geotechnical recommendations regarding lining of stormwater drainage swales to address expansive soil conditions. If the project geotechnical engineer indicates that any of the bioretention planters should include bottom liners to address expansive soil conditions, the bioretention planter designs shall be modified in accordance with the geotechnical engineer's recommendations. Modifications to bioretention planter designs shall account for potential increases in stormwater discharges that could occur from lining the bottoms of planters to ensure that the project would not increase stormwater discharges compared to existing conditions at the project site. Such modifications may include increasing the size/depth of bioretention planters, adding infiltration devices in areas that would not adversely affect proposed or existing improvements, or additional stormwater retention features such as bioswales or underground cisterns with metered outlets. The geotechnical review and potential modifications to project designs discussed above shall occur prior to the City of San Rafael (City) issuing grading or building permits for the project. (LTS)

Implementation of Mitigation Measure GEO-1 would ensure that potential impacts of the project related to expansive soils would be avoided through the use of fill materials that are able to support building loads and other infrastructure and that are not susceptible to expansion. Therefore, this impact would be **less than significant with mitigation**.

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40 Merlone Geier Partners. 2023. Email correspondence between Barron Caronite of Merlone Geier Partners and Jeff Ballantine of the City of San Rafael. May 4.

41 Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.

Thresholds 4.6.4: Unstable Soils. Potential impacts associated with the construction of new buildings for human occupancy or other infrastructure or structures within a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off- site landslide, lateral spreading, subsidence, liquefaction or collapse are discussed below.

Lateral Spreading. Lateral spreading hazards tend to mirror the liquefaction hazard for a site, assuming a free face is located nearby. There are free faces located in some areas along the perimeter of the project site where the grade changes between the project site and surrounding streets. These free faces consist of relatively small, landscaped slopes with retaining walls in areas with larger grade changes. The project would not substantially alter the existing grades of the project site and therefore would not create any new significant free faces. Because the potential for liquefaction at the project site is low, the potential for lateral spreading to occur at the project site is also low.[42] Therefore, potential impacts related to lateral spreading would be **less than significant**.

Landslides. The project site is relatively flat and therefore would not be subject to landslides. As discussed under Section 4.6.1 above, the large slope adjacent to the west of the project site does not appear to be at risk of significant slope failures or rockfall hazards that could affect the project site. In addition, the project would not include any activities that would modify or destabilize this off-site slope and therefore alter the risk of slope failures or rockfall hazards. Therefore, the project would have **no impact** related to landslides.

Settlement, Subsidence, or Collapse of Unstable Soil. Based on the presence of varying thicknesses of undocumented fill and native soil throughout the project site, static settlement and differential settlement could occur under new loads at the project site. The foundation types recommended by the Geotechnical Investigation would not be susceptible to significant static settlement because they would extend through the undocumented fill materials and compressible native soils on the site and would bear on improved ground, competent native soil, or bedrock.

The Geotechnical Investigation provides recommendations for the design and construction of shallow foundations, including footings and mats, and deep foundations consisting of auger-cast-in-place piles. These foundation recommendations include the depth of installation, bearing capacity, sizing, and lateral load resistance of foundation features, and a test pile program for deep foundations. The Geotechnical Investigation indicates that settlement of properly installed shallow foundations bearing in bedrock should be less than 0.5 inch, and differential settlement should be no more than 0.5 inch between any adjacent deep foundation columns, provided all foundations extend into bedrock. The Geotechnical Investigation also provides recommendations for preparation of subgrade, engineered fill placement and compaction, and construction of floor slabs and pavements, and indicates that although the near-surface soil over

[42] Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.

large portions of the project site is undocumented fill, it is adequate to support new building slabs-on-grade.[43]

The Geotechnical Investigation indicates that the most appropriate methods to perform ground improvement would include compacted aggregate piers (CAPs) or drilled displacement columns (DDCs); however, these systems are installed under design-build contracts by specialty contractors, and as such the Geotechnical Investigation does not provide specific design recommendations or settlement estimates for these systems. The Geotechnical Investigation provides guidelines for ground improvement, which includes: (a) extending the ground improvement at least 1 foot into the native soil or bedrock; (b) requiring ground improvement elements for a single structure to bear in the same material (i.e., competent native soil or bedrock); (c) using a qualified, design-build, specialty contractor who has previously successfully performed ground improvement in similar subsurface soil conditions to design and perform the ground improvement; (d) designing the ground improvement to provide a bearing capacity factor of safety of at least 2.0 under dead plus live loads; (e) performing at least two compression load tests per building on ground improvement elements prior to production installation; and (f) performing at least one load test in tension per building if DDCs would be used to resist uplift loads.[44]

As discussed above, the Geotechnical Investigation does not provide specific design recommendations or settlement estimates for ground improvement systems. If ground improvement would be performed, then site-specific ground improvement design recommendations and associated settlement estimates must be developed for proposed building foundations/structures to be properly designed to withstand estimated settlement amounts. The Geotechnical Investigation also does not provide estimated settlement amounts that could occur due to loads from placement of new fill materials on the project site. Depending on the thickness of new fill materials and the compressibility of underlying soil, settlement due to new loads from placement of fill materials could result in damage to existing improvements (e.g., buildings, streets, sidewalks, and utilities) or proposed improvements. In addition, the Geotechnical Investigation indicates that during ground improvement and/or deep foundation pre-production test programs and throughout construction, the project would cause vibrations that could cause settlement of fill materials, which could adversely affect nearby improvements. The Geotechnical Investigation recommends that (a) vibration monitoring should be performed to check for vibrations and evaluate the attenuation with distance from the construction activities, and (b) the vibration monitoring program should be reviewed by the geotechnical engineer, the general contractor, and their ground improvement/foundation subcontractors to assess whether modifications need to be made to the construction activities to reduce the potential for damage to nearby improvements. The Geotechnical Investigation recommends that the conditions of buildings and improvements within 150 feet of the project

[43] Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

[44] Ibid.

site should be photographed and surveyed to document existing conditions prior to the start of construction and then monitored periodically during construction.[45]

The project would include excavation for construction of one level of underground parking at the proposed Residential 3 structure (which is in the area where groundwater was previously encountered at depths of approximately 7 to 10 feet[46]) and two levels of underground parking at the proposed Residential 4 structure (which is in an area where groundwater has been encountered at depths of approximately 11 to 15 feet[47]). Excavation activities would extend below the groundwater table; therefore, dewatering of excavations would be required. Excavation dewatering could lower the groundwater table in areas adjacent to excavations, which could result in subsidence and settlement-related damage to existing improvements near excavations. Shoring of excavations would also be required to laterally restrain the sidewalls of excavations to ensure they would not collapse and to limit the movement of adjacent improvements (e.g., public streets, sidewalks, and utilities). The amount of excavation dewatering that would be required can vary depending on the type of shoring system that would be utilized. If appropriate shoring is not designed and installed, the movement or collapse of excavation sidewalls could result in damage to adjacent improvements. The Geotechnical Investigation did not discuss the excavations, shoring, and dewatering that would be required for proposed underground parking structures.

Based on the discussion above, the project could result in subsidence, settlement, and differential settlement that could impact the integrity of nearby buildings and other improvements (e.g., roadways and utilities) in addition to potential settlement-related impacts to existing and proposed on-site improvements. This would be a **potentially significant** impact. Also refer to Section 4.12, Noise, for additional discussion regarding construction vibration.

Impact GEO-2 Placement of new loads on the project site, vibration-generating construction activities, and excavation and dewatering activities could result in subsidence, settlement, or differential settlement that could adversely affect the proposed and existing structures and other improvements. (S)

In order to control the risk of subsidence, settlement, and differential settlement, the project shall implement Mitigation Measure GEO-2.

Mitigation Measure GEO-2 **Preparation of a Design-Level Geotechnical Report.** The project sponsor shall define the extent of engineered fill that would be placed on the project site and extent of excavation that would occur for subsurface parking structures in the project plans. The project sponsor shall hire a qualified Geotechnical Engineer to prepare a

45 Langan Engineering and Environmental Services, Inc. 2021. Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California. December 22.

46 TŌR Environmental, Inc. 2017. *Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California*. August 22.

47 Langan Engineering and Environmental Services, Inc. 2021. *Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California*. December 22.

design-level geotechnical report for the project that shall include the following:

- A design-level analysis of total and differential settlement that may occur for shallow foundations installed over areas of ground improvement, if ground improvement would be performed. This analysis must be based on site-specific design recommendations for ground improvement prepared in accordance with the recommendations of the 2021 Geotechnical Investigation for the project.

- A design-level analysis of potential total and differential settlement associated with the placement of defined amounts of fill material, ground improvement activities, construction of other improvements, and dewatering activities on the project site. The settlement analysis shall define buffer distances away from construction activities within which settlement could occur as a result of the project and shall describe the settlement amounts that could occur within these buffer distances.

- Allowable settlement estimates for planned and existing improvements both on the project site and within the buffer distances described above that shall account for estimated settlement amounts developed for existing and planned improvements on surrounding properties.

- Recommendations to minimize the amounts of subsidence/ settlement and differential settlement that would result from the project (e.g., minimizing placement of fill, use of lightweight fill, and shoring systems that would limit the movement of adjacent improvements and minimize the amount of excavation dewatering required, such as interlocking sheet piles or soil-cement cut-off walls).

- Recommendations to mitigate potential damage to proposed and existing improvements (e.g., structures, pavement surfaces, roadways, underground parking structure, and utilities), both on and off the project site, that could result from settlement of existing unstable soil on and near the project site as a result of the project. Such recommendations could include installation of bracing/underpinning, installation of flexible utility couplings, or relocation of utilities.

- If the settlement analysis indicates that existing off-site improvements could be adversely affected by settlement as a result of the project, a pre-construction survey (e.g., crack

survey) and settlement monitoring program shall be developed and implemented before and during construction for existing improvements that may be affected by the project. This survey shall be used as a baseline to evaluate any damage claims and also to assist the contractor in assessing the performance of shoring systems. The pre-construction survey shall record the elevation and horizontal position of all existing installations within the buffer distance determined by the settlement analysis as described above, and shall consist of, but not be limited to, photographs, video documentation, and topographic surveys. The settlement monitoring program shall include installation of inclinometers and groundwater monitoring wells within a distance of 5 to 15 feet from excavations for below-grade parking and toward existing improvements. Settlement surveys shall be performed on a weekly basis during excavation for below-grade parking and on a monthly basis starting approximately 1 month after the excavation has been completed and continuing for a period of at least 2 years after the completion of construction activities (or other frequency and duration as recommended by the Geotechnical Engineer of Record).

The project plans and design-level geotechnical report shall be submitted to the City for review and approval prior to the City issuing grading or building permits. The project sponsor shall repair damages to existing or planned improvements if settlement monitoring identifies obvious damage or exceedance of allowable settlement amounts. The repair of damage shall be performed prior to the City issuing a certificate of occupancy for the project. (LTS)

Implementation of Mitigation Measure GEO-2 would ensure that potential impacts of the project related to static settlement, subsidence, or collapse of unstable soil would be minimized to the extent feasible through compliance with site-specific construction and engineering practices to be detailed in a design-level geotechnical report. Compliance with these measures would ensure that impacts are reduced to below a level of significance and consistent with accepted practices throughout the State. Therefore, this impact would be **less than significant with mitigation**.

Threshold 4.6.5: Paleontological Resources and Unique Geologic Features. There are no unique geologic features at the project site, therefore the project would have no impacts related to unique geologic features. As discussed under Section 4.6.1 above, paleontological resources could be present in the native soil and bedrock of the project site. The project would include excavation activities for construction of foundation features and utilities, which could potentially encounter and damage or destroy paleontological resources. Although *Program CDP-5.15A: Paleontological*

Resource Mitigation Protocol of the General Plan indicates the City will prepare and adopt a list of protocols in accordance with SVP standards that protect or mitigate impacts to paleontological resources, adoption of a list of such protocols has not occurred in the City's Municipal Code. The potential for damage or destruction of paleontological resources during construction of the project is therefore a **potentially significant** impact.

Impact GEO-3 The project could directly or indirectly destroy a unique paleontological resource or site. (S)

In order to control the risk of damaging or destroying a unique paleontological resource or site, the project shall implement Mitigation Measure GEO-3.

Mitigation Measure GEO-3 **Paleontological Resource Protection.** Before the start of any excavation activities, the project sponsor shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology (SVP), who is experienced in training construction personnel regarding paleontological resources. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that could be seen during construction, and proper notification procedures should fossils be encountered. Should any paleontological resources be encountered during construction activities, all ground-disturbing activities within 50 feet of the find shall cease, and the City and project sponsor shall be notified immediately. The project sponsor shall immediately notify the qualified paleontologist and request that they assess the situation per SVP standards, consult with agencies as appropriate, and make recommendations for the treatment of the discovery if found to be significant. If construction activities cannot avoid the paleontological resources, adverse effects to paleontological resources shall be mitigated. Mitigation may include monitoring, recording the fossil locality, conducting data recovery and analysis, preparing a technical report, and providing the fossil material and technical report to a paleontological repository, such as the University of California Museum of Paleontology. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City for review. (LTS)

Implementation of Mitigation Measure GEO-3 would reduce the level of the potential impact through the identification of paleontological resources during construction, the evaluation of unanticipated discoveries, and the recovery of significant paleontological data from those resources that warrant such investigation. This process would recover scientifically consequential information

from at-risk resources to offset their potential loss. Therefore, with implementation of Mitigation Measure GEO-3, this impact would be reduced to **less than significant with mitigation**.

4.6.2.3 Cumulative Impacts

This section evaluates cumulative impacts on geology and soils. This cumulative analysis examines the effects of the project in the relevant geographic area in combination with other current projects and probable future projects. Cumulative impacts are addressed only for those thresholds that would result in a project-related impact, whether it be less than significant or less than significant with mitigation. If the project would result in no impact with respect to a particular threshold, by definition, it would not contribute to a cumulative impact. Therefore, no analysis would be required.

Potential impacts related to geology, soils, and paleontological resources generally do not extend far beyond an individual development's boundaries because each development may have unique geologic and paleontological considerations. Therefore, the potential for cumulative impacts is generally limited to individual development sites and adjacent sites. For this reason, potential impacts are typically confined to discrete spatial locations and do not combine to create a significant cumulative impact. The exception to this generalization would occur where larger-scale geologic events, such as a large landslide or regional subsidence/settlement that might affect surrounding areas. As discussed under *Landslides* above, the project would have no impacts related to landslides. Potential impacts related to seismic hazards, soil erosion, collapse of unstable soil, expansive soils, and paleontological resources would be specific to the project site and would not combine with other projects to create a cumulative impact. The geographic context for the analysis of potential cumulative impacts related to settlement and subsidence of unstable soil is the project site and adjacent properties.

Potential cumulative impacts associated with settlement or subsidence of unstable soil could occur if cumulative projects adjacent to the project site caused settlement from new loads, vibration-generating construction activities, or subsidence from dewatering that could impact existing and proposed improvements, including structures, pavement/roadways, and utilities. Cumulative projects located adjacent to the project site may include excavation dewatering or placement of fill materials that could result in settlement or subsidence of areas on or adjacent to these cumulative projects. Settlement or subsidence of areas on or adjacent to these cumulative projects could combine with settlement or subsidence from the project, which could contribute to damaging existing or planned improvements. However, there are no current or probable future projects under City review within the vicinity of the project site.

The project would not make a cumulatively considerable contribution to settlement- and subsidence-related impacts because there are no cumulative projects within San Rafael with which the proposed project impacts could combine to result in a cumulatively considerable impact. Furthermore, through the duration of General Plan buildout, measures similar to Mitigation Measure GEO-1 would be required for individual development projects. Mitigation Measure GEO-1 would ensure that: (1) the potential for settlement (which includes potential subsidence) from the project would be evaluated in the design-level geotechnical report and geotechnical recommendations to address potential settlement that would be incorporated into the design of the project, which would account for estimated settlement amounts developed for existing and planned

improvements on surrounding properties; (2) settlement monitoring would be performed during and following construction of the proposed project, as necessary; and (3) if excessive settlement occurs, corrective measures (e.g., repair of damages) would be implemented. Therefore, cumulative impacts related to settlement or subsidence of unstable soil would be **less than significant**.

4.7 HYDROLOGY AND WATER QUALITY

This section provides an overview of the hydrology and water quality conditions at and near the project site and assesses potential impacts to hydrology and water quality that could result from implementation of the proposed project. Mitigation measures to reduce significant impacts are identified, where appropriate.

4.7.1 Setting

This section describes the existing conditions related to hydrology and water quality at and near the project area, as well as applicable regulatory agency framework and local policies.

4.7.1.1 Drainage and Surface Waters

The project site is located within the Gallinas Creek Watershed, which encompasses 5.6 square miles and includes two drainage areas: the North Fork and the South Fork. The North Fork is the larger of the two drainage areas and flows from the Terra Linda Valley area to the South Gallinas Slough near McInnis Park. The South Fork originates in the Los Ranchitos area and San Pedro Ridge and flows through the Civic Center and Santa Venetia areas into the Gallinas Slough. Gallinas Creek is tidally influenced and partially channelized east of United States Route 101 (US-101).[1]

Stormwater runoff from the project site is captured in catch basins and conveyed through underground storm drains located throughout the project site that discharge into larger diameter storm drains located around the perimeter of the project site including: (a) a storm drain along Northgate Drive that transitions from a 24-inch-diameter to a 48-inch-diameter pipe along its flow path from west to east, and then remains a 48-inch-diameter pipe after it turns to flow north along Los Ranchitos Road; and (b) a storm drain along Las Gallinas Avenue that transitions from an 18-inch-diameter to a 36-inch-diameter pipe along its flow path from the west to east, and then transitions to a 48-inch-diameter storm drain pipe where it turns towards the south.[2] The 48-inch-diameter storm drains along Los Ranchitos Road and Las Gallinas Avenue converge near Merrydale Road, discharge into a culvert that crosses beneath US-101, and then discharge into a drainage channel that connects to the South Fork of Gallinas Creek. Stormwater runoff from the project site is not currently treated to remove contaminants.

4.7.1.2 Groundwater

The northeast corner of the project site is located within the southern portion of the Novato Valley Groundwater Basin, and the remainder of the project site is not located within a designated groundwater basin.[3] Groundwater in the Novato Valley Basin occurs principally in alluvial deposits of Pleistocene to Holocene age that overlie non-water-bearing rocks of the Franciscan assemblage. Groundwater recharge within the Novato Valley Groundwater Basin occurs principally as infiltration from streambeds that exit the upland areas within the drainage basin and from direct percolation of

1 City of San Rafael. 2021. San Rafael General Plan 2040. August 2.
2 Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.
3 California Department of Water Resources (DWR). 2023a. Groundwater Basin Boundary Assessment Tool. Website: https://gis.water.ca.gov/app/bbat/ (accessed April 6).

precipitation that falls on the basin floor.[4] The Novato Valley Groundwater Basin is a very low priority basin according to the criteria established under the Sustainable Groundwater Management Act (SGMA); therefore, a groundwater sustainability plan has not been developed for that basin.[5]

Groundwater has been encountered at depths ranging between approximately 11 feet and 33 feet during past geotechnical investigations of the project site.[6] Groundwater was encountered at depths as shallow as approximately 7 to 10 feet in the southeast portion of the project site during groundwater sampling activities performed in June 2017.[7]

4.7.1.3 Surface Water and Groundwater Quality

The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses within the project site and surrounding areas, and by the composition of geologic materials in the vicinity. The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) regulate the quality of surface water and groundwater bodies throughout California. In San Rafael, including the project site vicinity, the San Francisco Bay RWQCB is responsible for implementing the Water Quality Control Plan (Basin Plan).[8] The Basin Plan establishes beneficial water uses for waterways, water bodies, and groundwater within the region and is a master policy document for managing water quality in the region.

Gallinas Creek is listed in the Basin Plan as providing the beneficial uses of cold and warm water habitat, preservation of rare and endangered species, wildlife habitat, and water contact and noncontact recreation. San Pablo Bay is listed in the Basin Plan as providing the beneficial uses of industrial service supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact and noncontact recreation, and navigation. The Novato Valley Groundwater Basin is listed in the Basin Plan as providing the potential beneficial uses of municipal and domestic water supply, industrial process and service water supply, and agricultural water supply.

Section 303(d) of the federal Clean Water Act (described in Section 4.7.1.8 below) requires states to present the United States Environmental Protection Agency (EPA) with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards, which in some cases result in the development of a total maximum daily load (TMDL). On a broad level, the TMDL process leads to a "pollution budget" designed to restore the health of a polluted body of water.

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4 California Department of Water Resources (DWR). 2004. California Groundwater Bulletin 118, San Francisco Bay Hydrologic Region, Novato Valley Groundwater Basin. February 27.

5 California Department of Water Resources (DWR). 2023b. SGMA Basin Prioritization Dashboard. Website: https://gis.water.ca.gov/app/bp-dashboard/final/ (accessed April 6).

6 Langan Engineering and Environmental Services, Inc. 2021. Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California. December 22.

7 TŌR Environmental, Inc. 2017. Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California 94903. August 22.

8 San Francisco Bay Regional Water Quality Control Board. 2023. Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, amendments adopted up through March 7, 2023. Website: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html#basinplan (accessed April 25, 2023).

The TMDL process provides a quantitative assessment of the sources of pollution contributing to a violation of the water quality standards and identifies the pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired waterbody. Gallinas Creek is listed as impaired by the pesticide diazinon, which has a TMDL established. San Pablo Bay is listed as an impaired water body for several pollutants, including multiple pesticides (dichlorodiphenyltrichloroethane [DDT], chlordane, dieldrin), mercury, polychlorinated biphenyls (PCBs), dioxin and furan compounds, invasive species, trash, and selenium. TMDLs have been established for mercury, PCBs, and selenium and will ultimately be prepared for other pollutants affecting San Pablo Bay.[9]

Groundwater in the Novato Valley Basin is high in calcium bicarbonate and has higher levels of sodium chloride and total minerals in tidal areas than in areas farther away from San Pablo Bay.[10] As discussed in Section 4.8, Hazards and Hazardous Materials, groundwater contamination from petroleum hydrocarbons has been identified in the southern portion of the project site due to hazardous materials releases at the former Sears Department Store (from hydraulic elevators) and at the former Sears Auto Center.[11]

4.7.1.4 Water Supply

San Rafael receives its municipal water supply from Marin Water, formerly known as Marin Municipal Water District (MMWD). Most of Marin Water's water supply comes from a network of seven local, rain-fed reservoirs. This supply is supplemented with water from Sonoma Water, which provides surface water from the Russian River and, to a lesser extent, groundwater from the Santa Rosa Plain Subbasin of the Santa Rosa Valley Basin. Groundwater is not currently used or planned to be used as a water supply source directly by Marin Water. Groundwater is used primarily by Sonoma Water as a drought period supply or when Russian River supplies are otherwise constrained. Groundwater is projected to make up 3 percent of Sonoma Water's supplies in normal year conditions through 2045. It cannot be discerned how much of the Sonoma Water water supply that is provided to Marin Water consists of groundwater; however, it is assumed to be proportionate to the overall percentage of groundwater used within the Sonoma Water system. Marin Water does not currently use, nor does it plan to use, water for saline water intrusion barriers, groundwater recharge, or conjunctive use. Marin Water provides recycled water to customers in the Terra Linda Valley area of San Rafael (where the project site is located) for non-potable uses, including irrigation, cooling towers, car washes, and toilet flushing.[12]

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9 State Water Resources Control Board (SWRCB). 2018. Final 2018 California Integrated Report (Clean Water Act Section 303(d) List/305(b) Report). Website: https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=e2def63ccef54eedbee4ad726ab1552c (accessed March 15, 2022).

10 California Department of Water Resources (DWR). 2023. SGMA Basin Prioritization Dashboard. Website: https://gis.water.ca.gov/app/bp-dashboard/final/ (accessed April 6).

11 TŌR Environmental, Inc. 2017. Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California. August 22.

12 EKI Environment & Water, Inc. 2021. 2020 Urban Water Management Plan for Marin Municipal Water District. June.

A Water Supply Assessment (WSA)[13] prepared for the project indicates that potable water use at the project site from 2017 through 2021 ranged between 17 and 32 acre-feet per year (AFY) and averaged 26 AFY, and recycled water use at the project site ranged between 9.7 AFY and 17 AFY and averaged 13 AFY during this period. Total Marin Water water demand has decreased by approximately 16 percent between 2015 and 2021 and averaged 35,830 AFY from 2017 through 2021. There was no recycled water demand in 2019 and 2020 due to the Las Gallinas Valley Sanitary District (LGVSD) recycled water plant being taken offline for upgrades. All demands by the recycled water system during this period were met by potable water, and with the plant upgrades completed in April 2021, potable water is not anticipated to be needed to supplement the recycled water system going forward. Taking into account historical water use, expected population increase, and other growth, climatic variability, and other assumptions, the potable and raw water demand[14] within the Marin Water service area is projected to increase to 37,458 AFY by 2045 and the recycled water demand to increase to 750 AFY. The 2045 projected potable and raw water demand is a 5.5 percent increase over the 2017–2021 average, and the 2045 recycled water demand is a 37 percent increase over the 2017–2021 average. [15]

4.7.1.5 Flooding

According to Federal Emergency Management Agency (FEMA) mapping, the project site is not located within or adjacent to any flood hazard zones. The nearest 100-year flood hazard zone to the project site is located approximately 1,500 feet east of the project site along the South Fork of Gallinas Creek and adjacent drainage channels on the east side of US-101. The Base Flood Elevation of this flood hazard zone is 10 feet referenced to the North American Vertical Datum of 1988 (NAVD 88).[16]

4.7.1.6 Sea Level Rise

The global sea level (including in San Francisco Bay) is rising and is expected to continue to rise even with existing efforts to mitigate global warming through reduction of greenhouse gas (GHG) emissions.[17] Rates of sea level rise may vary by location because local subsidence or uplift affects the relative change in sea level between land masses and the ocean. In the San Francisco Bay Area, the background rate of sea level rise has been estimated to be approximately 0.076 inch per year from

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13 EKI Environment & Water, Inc. 2022. Water Supply Assessment for Northgate Town Square, Marin Municipal Water District. November.

14 Potable and raw water demands are grouped together because the local surface water supply data in Marin Water's 2020 Urban Water Management Plan (UWMP) is a source for both potable and raw water demands. As described in the Marin Water 2020 UWMP, raw water is used for environmental releases from Kent Lake and Soulajule Reservoir and is sold to the Meadow Club for irrigation purposes.

15 EKI Environment & Water, Inc. 2022. Water Supply Assessment for Northgate Town Square, Marin Municipal Water District. November.

16 Federal Emergency Management Agency (FEMA). 2023. National Flood Hazard Layer (NFHL) Viewer, Map No. 06041C0293E, effective March 16, 2016. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd (accessed April 6).

17 San Francisco Bay Conservation and Development Commission. 2011. Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline. October 6.

1900 to 2008.[18] In 2018, the California Ocean Protection Council (OPC) released an update to the State of California Sea-Level Rise Guidance.[19] The Sea-Level Rise Guidance presents the following likely ranges (66 percent probability) of sea-level rise for the area of San Francisco:

- 0.3 to 0.5 feet by 2030
- 0.6 to 1.1 feet by 2050
- 1.0 to 2.4 feet by 2100 (with low future GHG emissions)
- 1.6 to 3.4 feet by 2100 (with high future GHG emissions)

The Sea-Level Rise Guidance also presents lower probability sea-level rise projections that could be considered for situations with medium to high risk aversion or extreme risk aversion. For San Francisco, the medium to high risk aversion projection (0.5 percent probability) is from 5.7 feet (low future emissions) to 6.9 feet (high future emissions) by 2100, and the extreme risk aversion projection is 10.2 feet by 2100.

The San Francisco Bay Conservation and Development Commission (BCDC) has completed sea level rise mapping for the San Francisco Bay Area. The mapping illustrates areas and levels of flooding anticipated based on estimated sea level rise, topographic features, King Tide events,[20] and storm surge events.[21] The mapping illustrates sea level rise above the Mean Higher High Water (MHHW)[22] tide elevation, which is approximately 6.16 feet NAVD 88 in the vicinity of the project site.[23] The mapping indicates that up to 9 feet of still water (i.e., no storm surge) sea level rise would not result in inundation on the project site. The most extreme sea level rise scenario that is available on BCDC's mapping is 9 feet of still water rise. The drainage channel on the east side of US-101 that receives runoff from the project site could become inundated by approximately 6.5 feet of still water sea level rise, or lower levels of sea level rise combined with storm surge events.[24] The existing ground surface elevation of the project site ranges from approximately 30 to 40 feet NAVD 88; therefore, the project would not be susceptible to inundation from sea level rise in the foreseeable future. However, the drainage channel on the east side of US-101 that receives runoff

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18 National Research Council of the National Academies. 2012. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, Chapter 4.

19 California Ocean Protection Council (OPC). 2018. State of California Sea-Level Rise Guidance, 2018 Update.

20 King Tides are exceptionally high tides that occur occasionally throughout the year and currently impact roads and properties throughout the San Francisco Bay Area. As sea level rises, the extent of impact of the King Tides will increase.

21 Storm surge events are storm-driven wind events producing wave surges that would travel across San Francisco Bay toward the shore and are driven by wind and atmospheric pressure conditions. This is different from the 100-year storm event flooding mapped by FEMA, which estimates flooding due to peak runoff from the surrounding watershed traveling downstream toward the Bay. The BCDC sea level rise inundation estimates account for storm surge events but do not account for runoff that could be generated by precipitation events.

22 MHHW is the average of the higher of the two daily high-water elevations.

23 AECOM. 2016. San Francisco Bay Tidal Datums and Extreme Tides Study, Final Report. February.

24 San Francisco Bay Conservation and Development Commission (BCDC). 2023. Adapting to Rising Tides Bay Area Sea Level Rise and Shoreline Analysis Maps. Website: http://www.adaptingtorisingtides.org/project/regional-sea-level-rise-mapping-and-shoreline-analysis/ (accessed April 27).

from the project site could be affected by sea level rise, which in turn could affect future drainage conditions at the project site and surrounding areas.

4.7.1.7 Seiche and Tsunami

Seiches are waves that are created in an enclosed body of water (e.g., a bay, lake, or harbor), that go up and down or oscillate, and do not progress forward like standard ocean waves. Seiches are also referred to as standing waves and are triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tidal influence. The height and frequency of seiches are determined by the strength of the triggering factor(s) and the size of the basin. Triggering forces that set off a seiche are most effective if they operate at specific frequencies relative to the size of an enclosed basin. Based on the geometry and natural oscillations of San Francisco Bay, seiches are not considered a hazard in the Bay[25] and there are no other water bodies located near the project site that could generate a seiche that could impact the project site.

Tsunamis are long-period water waves caused by underwater seismic events, volcanic eruptions, or undersea landslides. A local tsunami event could be produced by a rupture of the Hayward Fault to the Rogers Creek Fault beneath San Pablo Bay; however, such a tsunami would be significantly smaller than tsunamis generated by large events on the Alaska-Aleutian subduction zone.[26] Areas that are highly susceptible to tsunami inundation tend to be low-lying coastal areas, such as tidal flats, marshlands, and former San Francisco Bay margins that have been artificially filled. Inundation or damage caused by a tsunami may disrupt highway traffic in those low-lying areas. According to mapping prepared by the California Geologic Survey and the California Governor's Office of Emergency Services, the project site is not located within a tsunami hazard area.[27]

4.7.1.8 Regulatory Framework

This section provides a brief description of the regulations affecting hydrology and water quality at the federal, State, regional, and local level.

Federal Regulations. Federal regulations governing hydrology and water quality include the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) Permit Program, and Insurance Program.

> ***Federal Clean Water Act of 1972.*** The Federal Clean Water Act of 1972 is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It is administered by the EPA. The Clean Water Act operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. The EPA has delegated its authority to implement and enforce most of the applicable water quality

[25] Borrero, J., L. Dengler, B. Uslu, and C. Synolakis. 2006. *Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay*, June 8. Report prepared for the Marine Facilities Division of the California State Lands Commission.

[26] Ibid.

[27] California Geological Survey (CGS). 2022. Tsunami Hazard Area Map County of Marin. October 7.

provisions of this law to the individual states. In California, the provisions are enforced by nine RWQCBs under the auspices of the SWRCB.

National Pollutant Discharge Elimination System (NPDES) Permit Program. Under Section 402 of the Clean Water Act, the discharge of pollutants through a point source into waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program is conducted through the SWRCB and the nine RWQCBs. The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs.

Federal Flood Insurance Program. In 1968, Congress created the National Flood Insurance Program in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The National Flood Insurance Program makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the National Flood Insurance Program and creates Flood Insurance Rate Maps (FIRMs) that designate 100-year flood hazard zones and delineate other flood hazard areas. As described above, the project site is not located within a mapped 100-year flood hazard zone or other flood hazard area.

State Regulations. State regulations applicable to the proposed project include the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and State Implementation of Clean Water Act Requirements, the NPDES Construction General Permit, the SGMA, and the NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit).

Porter-Cologne Act and State Implementation of Clean Water Act Requirements. The Porter-Cologne Act (California Water Code, Division 7, Water Quality) was promulgated in 1969. It established the SWRCB and divided the State into nine hydrologic regions, each overseen by an RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs. The Porter-Cologne Act also provides for the development and tri-annual review of Water Quality Control Plans that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. San Rafael lies within the jurisdiction of the RWQCB, which enforces compliance with water quality objectives for beneficial uses of surface waters.

NPDES Construction General Permit. Construction projects disturbing more than 1 acre of land during construction are required to comply with the NPDES General Permit for Storm Water

Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit).[28]

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects, such as pipeline installations. Construction General Permit activities are regulated at a local level by the RWQCB.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made by the project applicant when the Notice of Intent is filed (and more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and Best Management Practices (BMPs) that achieve Best Available Technology for treatment of toxic and non-conventional pollutants and Best Conventional Technology for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to: (1) identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a Qualified SWPPP Practitioner who meets the requirements outlined in the Construction General Permit.

The SWPPP must also include a construction site monitoring program. Depending on the project risk level, the monitoring program may include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

The Construction General Permit allows non-stormwater discharge of groundwater dewatering effluent if the water is properly filtered and treated to remove sediment and pollutants using

[28] The current Construction General Permit was issued under SWRCB Order No. 2009-0009-DWQ, NPDES No. CAS000002. A new Construction General Permit (Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002) was adopted on September 8, 2022, which became effective on September 1, 2023. The current and new Construction General Permit include the same requirements discussed in this section.

appropriate technologies (e.g., filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small-scale peroxide addition, or other minor treatment). Testing of receiving waters would also be required prior to and during the discharge. The discharge of dewatering effluent is authorized under the Construction General Permit if the following conditions are met:

- The discharge does not cause or contribute to a violation of any water quality standard.
- The discharge does not violate any other provision of the Construction General Permit.
- The discharge is not prohibited by the applicable Basin Plan.
- The discharger has included and implemented specific BMPs required by the Construction General Permit to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment.
- The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants.
- The discharge is monitored and meets the applicable numeric action levels.
- The discharger reports the sampling information in the annual report.

If any of the above conditions are not satisfied, the discharge of dewatering effluent is not authorized by the Construction General Permit. If the dewatering activity is deemed by the RWQCB not to be covered by the Construction General Permit or other NPDES permit, and discharge of groundwater to the storm drain system is planned, then the discharger would be required to prepare a Report of Waste Discharge, and if approved by the RWQCB, be issued site-specific Waste Discharge Requirements (WDRs) under NPDES regulations.

Sustainable Groundwater Management Act. The SGMA requires local agencies to form groundwater sustainability agencies (GSAs) for high- and medium-priority basins and develop and implement groundwater sustainability plans (GSPs) to avoid undesirable results, mitigate overdraft, and reach sustainability within 20 years of implementing their sustainability plans. The California Department of Water Resources (DWR) is charged with classifying groundwater basins in California as either high, medium, low, or very low priority. As mentioned above, the Novato Valley Groundwater Basin is classified as a very low priority basin by the DWR; therefore, preparation of a GSP is not required for the Novato Valley Groundwater Basin.[29] As discussed above under 4.7.1.4, Water Supply, Marin Water's water supply is supplemented with water from Sonoma Water, which includes some groundwater from the Santa Rosa Plain Subbasin. The DWR has designated the Santa Rosa Plain Subbasin as a medium-priority basin, which is therefore subject to the requirements of the SGMA.[30]

[29] California Department of Water Resources (DWR). 2020. Sustainable Groundwater Management Act, 2019 Basin Prioritization. May.

[30] EKI Environment & Water, Inc. 2021. 2020 Urban Water Management Plan for Marin Municipal Water District. June.

NPDES Small MS4 Permit. Pursuant to Section 402 of the Clean Water Act and the Porter-Cologne Act, municipal stormwater discharges at the project site are regulated under the statewide NPDES Small MS4 Permit. Locally, the NPDES program is overseen by the RWQCB. Development projects in San Rafael are subject to compliance with requirements of the current Small MS4 Permit, which became effective on January 1, 2019.[31] Section E.12 of the Small MS4 Permit addresses requirements for retention and treatment of stormwater generated by development projects. Projects that replace more than 5,000 square feet of impervious surface must comply with the post-construction stormwater management measures described in the Small MS4 Permit, such as Low Impact Development (LID) design standards. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than as a waste product. LID measures provide effective stormwater treatment by filtering pollutants and sequestering them within soils. Additionally, some pollutants may be rendered less toxic through biological action in the soil.[32]

Regional and Local Agencies and Regulations. Regional and local agency regulations include the Marin County Stormwater Pollution Prevention Program and Bay Area Stormwater Management Agencies Association Design Guidance, RWQCB Order No. R2-2017-0048, the Santa Rosa Plain GSA, and GSP for the Santa Rosa Plain Subbasin, the Marin Water 2020 Urban Water Management Plan (2020 UWMP) and Code, the Las Gallinas Valley Sanitation District Code, and the City of San Rafael General Plan.

Marin County Stormwater Pollution Prevention Program and Bay Area Stormwater Management Agencies Association. The Marin County Stormwater Pollution Prevention Program assists cities, towns, and Marin County with coordination and consistency of approaches across Marin County in implementing the Small MS4 Permit requirements. The Bay Area Stormwater Management Agencies Association (BASMAA), which includes the Marin County Stormwater Pollution Prevention Program, has developed *Design Guidance for Stormwater Treatment and Control for Projects in Marin, Sonoma, Napa, and Solano Counties*,[33] to assist in compliance with Section E.12 of the of the Small MS4 Permit.

RWQCB Order No. R2-2017-0048. If a dewatering activity is deemed by the RWQCB not to be covered by the Construction General Permit due to contamination from fuels or volatile organic compounds (VOCs), the discharge may be allowed under NPDES Permit No. CAG912002 that was

[31] State Water Resources Control Board (SWRCB). 2018. Water Quality (WQ) Order 2013-0001-DWQ NPDES No. CAS000004 as Amended by Order WQ 2015-0133-EXEC, Order WQ 2016-0069-EXEC, WQ Order 2017-XXXX-DWQ, Order WQ 2018-0001-EXEC, and Order WQ 2018-0007-EXEC.

[32] Ibid.

[33] Bay Area Stormwater Management Agencies Association (BASMAA). 2019. *Design Guidance for Stormwater Treatment and Control for Projects in Marin, Sonoma, Napa, and Solano Counties*. January.

issued by the RWQCB under Order No. R2-2017-0048,[34] which covers the discharge or reclamation of extracted and treated groundwater resulting from the cleanup of groundwater polluted by VOCs, fuel leaks, fuel additives, and other related wastes.

Santa Rosa Plain GSA and GSP for the Santa Rosa Plain Subbasin. The Santa Rosa Plain GSA was formed in June 2017 through a Joint Powers Agreement entered into by Sonoma Water and several municipalities, water suppliers, and resource conservation districts. Because Marin Water does not directly pump groundwater, it does not coordinate with any GSAs. However, Sonoma Water is a member of the Santa Rosa Plain GSA, and Marin Water has coordinated with Sonoma Water on its demand projections through 2045.[35] The Santa Rosa Plain GSA developed the GSP for the Santa Rosa Plain Subbasin.[36] The goal of the GSP is to adaptively and sustainably manage, protect, and enhance groundwater resources while allowing for reasonable and managed growth through:

- Careful monitoring of groundwater conditions;
- Close coordination and collaboration with other entities and regulatory agencies that have a stake or role in groundwater management in the Subbasin; and
- A diverse portfolio of projects and management actions that ensure clean and plentiful groundwater for future uses and users in an environmentally sound and equitable manner.

The five sustainability indicators identified in the GSP for the Santa Rosa Plain Subbasin and that would be considered significant and unreasonable conditions for those indicators are listed below:

1. **Chronic Lowering of Groundwater Levels:** Chronic lowering of groundwater levels that significantly exceed historical levels or cause significant and unreasonable impacts to beneficial users.

2. **Reduction in Groundwater Storage:** Reduction of groundwater storage that causes significant and unreasonable impacts on the long-term sustainable beneficial use of groundwater in the basin, as caused by either long-term reductions in groundwater storage or pumping exceeding the sustainable yield.

3. **Degraded Groundwater Quality:** Significant and unreasonable water quality conditions occur if an increase in the concentration of constituents of concern (arsenic, nitrates, and salinity) in groundwater leads to adverse impacts on beneficial users or uses of

[34] San Francisco Bay Regional Water Quality Control Board. 2019. Order No. R2-2017-0048, NPDES Permit No. CAG912002, General Waste Discharge Requirements for Discharge or Reclamation of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOCs), Fuel Leaks, Fuel Additives, and Other Related Wastes (VOC and Fuel General Permit). Effective January 1, 2019.

[35] EKI Environment & Water, Inc. 2021. 2020 Urban Water Management Plan for Marin Municipal Water District. June.

[36] Sonoma Water. 2021. Groundwater Sustainability Plan, Santa Rosa Plain Groundwater Subbasin. December.

groundwater, due to either direct actions by Santa Rosa Plain GSP projects or management activities or undesirable results occurring for other sustainability indicators.

4. **Land Surface Subsidence:** Any rate of inelastic land subsidence caused by groundwater pumping is a significant and unreasonable condition, everywhere in the Subbasin and regardless of beneficial uses and users.

5. **Depletion of Interconnected Surface Water:** Significant and unreasonable depletion of surface water from interconnected streams occurs when surface water depletion, caused by groundwater pumping within the Subbasin, exceeds historical depletion or adversely impacts the viability of groundwater-dependent ecosystems or other beneficial users of surface water.

Marin Water Urban Water Management Plan and Code. Marin Water developed the 2020 UWMP,[37] which is a foundational document and source of information about Marin Water's historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. Title 13 of the Marin Water Code, *Water Service Conditions and Water Conservation Measures*, includes a section on water waste prohibitions (Section 13.04.020). This section was updated in 2021 to explicitly state that the waste of water is to be prohibited. The section prohibits nonessential uses, places restrictions on irrigation watering times, limits days per week of allowed irrigation and reverse-osmosis units, and includes prohibitions on single-pass cooling systems and non-recirculating systems for conveyor carwash applications for new connections.[38]

Las Gallinas Valley Sanitation District Ordinance Code. The LGVSD manages and treats sanitary sewer discharges in the area of the project site. Title 2, Chapter 2 of the LGVSD's Ordinance Code[39] describes discharge prohibitions, standards and limitations, and permitting requirements, and includes specific requirements related to the discharge of contaminated groundwater.

San Rafael General Plan 2040. The Community Health and Safety Element of the City of San Rafael General Plan[40] contains policies and programs pertaining to hydrology and water that would be applicable to the proposed project, as listed below.

> **Policy C-1.9: Enhancement of Creeks and Drainageways.** Conserve or improve the habitat value and hydrologic function of creeks and drainageways so they may serve as wildlife corridors and green infrastructure to improve stormwater management, reduce flooding, and sequester carbon. Require creek enhancement and associated riparian habitat

[37] EKI Environment & Water, Inc. 2021. 2020 Urban Water Management Plan for Marin Municipal Water District. June.

[38] Ibid.

[39] Las Gallinas Valley Sanitary District (LGVSD). 2023. Ordinance Code. Website: https://www.lgvsd.org/document-library/ordinance-code/ (accessed April 24).

[40] City of San Rafael. 2021. San Rafael General Plan 2040. August 2.

restoration/creation for projects adjacent to creeks to reduce erosion, maintain storm flows, improve water quality, and improve habitat value where feasible.

Program C-1.9A: Watercourse Protection Regulations. Maintain watercourse protection regulations in the San Rafael Municipal Code. These regulations should be periodically revisited to ensure that they adequately protect creeks and drainageways. Consider specific measures or guidelines to mitigate the destruction or damage of riparian habitat from roads, development, and other encroachments.

Policy C-3.1: Water Quality Standards. Continue to comply with local, state and federal water quality standards.

Program C-3.1A: Interagency Coordination. Coordinate with the local, state, and federal agencies responsible for permitting discharges to San Rafael's creeks and surface waters, monitoring water quality, and enforcing adopted water quality standards and laws.

Policy C-3.2: Reduce Pollution from Urban Runoff. Require Best Management Practices (BMPs) to reduce pollutants discharged to storm drains and waterways. Typical BMPs include reducing impervious surface coverage, requiring site plans that minimize grading and disturbance of creeks and natural drainage patterns, and using vegetation and bioswales to absorb and filter runoff.

Program C-3.2A: Countywide Stormwater Program. Continue to participate in the countywide stormwater pollution prevention program and comply with its performance standards.

Program C-3.2B: Reducing Pollutants in Runoff. Continue to reduce the discharge of harmful materials to the storm drainage system through inspections, enforcement programs, reduced use of toxic materials, and public education.

Program C-3.2C: Construction Impacts. Continue to incorporate measures for stormwater runoff control, management, and inspections in construction projects and require contractors to comply with accepted pollution prevention planning practices. Provisions for post-construction stormwater.

Policy C-3.5: Groundwater Protection. Protect San Rafael's groundwater from the adverse effects of urban uses and impacts from sea level rise. Encourage opportunities for groundwater recharge to reduce subsidence and water loss, and support water-dependent ecosystems.

Program C-3.5A: Underground Tank Remediation. Continue efforts to remediate underground storage tanks and related groundwater hazards. Avoid siting new tanks in areas where they may pose hazards, including areas prone to sea level rise.

Policy C-3.8: Water Conservation. Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.

Program C-3.8A: Water Conservation Programs. Work with Marin Municipal Water District and other organizations to promote water conservation programs and incentives and ensure compliance with state and MMWD regulations, including the provisions of the Urban Water Management Plan (see Policy CSI-4.8 for additional guidance).

Program C-3.8C: Reclaimed Water Use. Support the extension of recycled water distribution infrastructure by Las Gallinas Valley Sanitary and MMWD, along with programs to make the use of recycled water more feasible.

Program C-3.8D: Graywater and Rainwater. Encourage the installation of graywater and rainwater collection systems. Explore revisions to building codes that would facilitate such projects where obstacles currently exist.

Program C-3.8E: Reducing Municipal Water Use. Reduce water use for municipal operations through water-efficient landscaping, maintenance of irrigation equipment, replacement of inefficient plumbing fixtures, and using recycled water where available and practical.

Policy C-3.9: Water-Efficient Landscaping. Encourage—and where appropriate require—the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.

Municipal Code. Chapter 9.30 of the San Rafael Municipal Code contains the City of San Rafael Urban Runoff Pollution Prevention Ordinance, which adopts requirements of the Clean Water Act, the Basin Plan, and the Small MS4 Permit. The purpose of this chapter is to ensure the future health, safety, and general welfare of the citizens of San Rafael and to protect and enhance watercourses, fish, and wildlife habitat by:

- Minimizing discharges other than stormwater runoff to storm drains or watercourses;
- Responding to the discharge of spills, preventing and controlling the discharge of spills to storm drains or watercourses, and prohibiting dumping or disposal of materials other than stormwater;
- Reducing pollutants in stormwater discharges to the maximum extent practicable;
- Requiring operators of construction sites, new or redeveloped land, and industrial and commercial facilities to install, implement, or maintain appropriate BMPs; and
- Maintaining pre-development stormwater runoff rates and preventing nonpoint source pollution whenever possible, through stormwater management controls and ensuring that these management controls are properly maintained.

The intent of this chapter is to protect and enhance the water quality of the State's and nation's watercourses, water bodies, and wetlands. BMPs are required for all construction within San Rafael. An Erosion and Sediment Control Plan is required for any construction subject to a grading permit or that may have the potential for significant erosion, and must follow the most recent version of the Marin County Stormwater Pollution Prevention Program Construction

Erosion and Sediment Control Plan Applicant Package. New development must comply with land development standards in the Small MS4 Permit and BASMAA Post-Construction Manual, and must develop, submit, and implement a Stormwater Control Plan (SCP). Discharges of uncontaminated pumped groundwater to the City's storm drain system are allowed under Section 9.30.070 of the Municipal Code. Section 9.30.070 of the Municipal Code also indicates that where recycled water is used for irrigation, holding ponds must be designed and managed such that no discharge occurs unless it is the result of the 25-year, 24-hour storm event. Any releases from holding ponds must be reported to the RWQCB and the County of Marin (County) within 24 hours of the discharge.

4.7.2 Impacts and Mitigation Measures

The following describes the potential impacts of the proposed project related to hydrology and water quality. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as necessary.

4.7.2.1 Criteria of Significance

Implementation of the proposed project would have a significant impact related to hydrology and water quality if it would:

Threshold 4.7.1: Violate any water quality standards or waste discharge requirements, otherwise substantially degrade surface or groundwater quality or conflict with or obstruct implementation of a water quality control plan;

Threshold 4.7.2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of a sustainable groundwater management plan;

Threshold 4.7.3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on or off site;

Threshold 4.7.4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- Increase the rate or amount of surface runoff in a manner that would result in flooding on or off site or impeded or redirect flood flows; or

Threshold 4.7.5: Release any on-site pollutants into the environment as the result of flooding, tsunami, or seiche.

4.7.2.2 Project Impacts

The following section discusses potential impacts related to hydrology and water quality associated with development of the proposed project. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) would not differ by phase and therefore are not differentiated in this section.

Threshold 4.7.1: Water Quality. The potential for the proposed project to result in a violation of water quality standards or waste discharge requirements exists during both the construction and operation periods, as discussed below.

Construction. The project would involve construction activities such as excavation and grading, which can increase the potential for erosion and sedimentation from stormwater runoff and for the leaching/transport of potential contaminants from disturbed soil. Construction activities would also involve the use of construction materials, equipment, and hazardous materials that can be sources of stormwater and groundwater pollution. If stormwater contacts disturbed soil and/or improperly stored hazardous materials, sediments and contaminants could be entrained in stormwater runoff that could reach waterways and degrade water quality, potentially resulting in a violation of water quality standards.

The project would disturb more than 1 acre of land and therefore would be required to comply with the requirements of the Construction General Permit. In accordance with the Construction General Permit requirements, a SWPPP would be developed and implemented to identify all potential pollutants and their sources, including a list of site-specific BMPs to reduce discharges of construction-related stormwater pollutants. The SWPPP would include a detailed description of controls to reduce pollutants and outline maintenance and inspection procedures. The SWPPP would be required to be kept on site and be made available to RWQCB inspectors. Typical sediment and erosion BMPs include protecting storm drain inlets, establishing and maintaining construction exits, and perimeter controls. The SWPPP would also define proper building material staging areas, paint and concrete washout areas, proper equipment/vehicle fueling and maintenance practices, controls for equipment/vehicle washing, and allowable non-stormwater discharges, and would include a spill prevention and response plan. Compliance with the Construction General Permit would ensure that stormwater runoff from the project site during construction would not result in erosion/siltation or create other sources of polluted runoff that could degrade groundwater or receiving water quality.

Groundwater dewatering would be required for subsurface construction activities. Dewatering effluent could have high turbidity (suspended sediment) and could contain other contaminants. Turbid or contaminated groundwater could cause degradation of the receiving water quality if discharged directly to storm drains without treatment. Any groundwater dewatering discharge would be subject to permits from the LGVSD or the RWQCB depending on whether the discharge would be to the sanitary sewer or storm drain system, respectively.

Under existing State law, it is illegal to allow unpermitted non-stormwater discharges to receiving waters. Chapter 9.030 of the City's Municipal Code also prohibits discharges to the City's storm drain systems other than rainfall runoff, except for discharges in compliance with an NPDES permit issued for the discharge, or discharges that are not prohibited as listed in Section 9.30.070 of the City's Municipal Code, which includes uncontaminated pumped groundwater.

As stated in the Construction General Permit, non-stormwater discharges directly to receiving waters or the storm drain system have the potential to negatively impact water quality. The discharger must implement measures to control all non-stormwater discharges during construction, including from dewatering activities associated with construction. Discharging any pollutant-laden water from a dewatering site or sediment basin into any receiving water or storm drain that would cause or contribute to an exceedance of water quality objectives is prohibited (i.e., illegal).[41]

The Construction General Permit allows the discharge of non-contaminated dewatering effluent if the water is properly filtered or treated using appropriate technology. These technologies include, but are not limited to, retention in settling tanks (where sediments settle out prior to the discharge of water) and filtration using gravel and sand filters (to mechanically remove the sediment). If the dewatering activity is deemed by the RWQCB not to be covered by the Construction General Permit due to contamination from fuels or VOCs, the discharge may be allowed under NPDES Permit No. CAG912002 (issued by the RWQCB under Order No. R2-2017-0048[42]), which covers the discharge or reclamation of extracted and treated groundwater resulting from the cleanup of groundwater polluted by VOCs, fuel leaks, fuel additives, and other related wastes. If the discharge is not covered by any existing general NPDES permits, then the discharger could potentially prepare a Report of Waste Discharge, and if approved by the RWQCB, be issued site-specific WDRs under the NPDES regulations. Site-specific WDRs contain rigorous monitoring requirements and performance standards that, when implemented, ensure that receiving water quality is not substantially degraded.

If the water is not suitable for discharge to the storm drain (receiving water), as discussed above, dewatering effluent may be discharged to the sanitary sewer system if the LGVSD's discharge criteria are met. These include, but are not limited to, application of pretreatment technologies that would result in achieving compliance with the wastewater discharge limits. Discharges to the sanitary sewer must occur under a permit. The LGVSD manages the water it accepts into its facilities so that it can ensure proper treatment of wastewater prior to discharge.

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41 State Water Resources Control Board (SWRCB) Division of Water Quality. 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

42 San Francisco Bay Regional Water Quality Control Board. 2019. Order No. R2-2017-0048, NPDES Permit No. CAG912002, General Waste Discharge Requirements for Discharge or Reclamation of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOCs), Fuel Leaks, Fuel Additives, and Other Related Wastes (VOC and Fuel General Permit). Effective January 1, 2019.

If it is infeasible to meet the requirements of the Construction General Permit or other general NPDES permit, acquire site-specific WDRs, or meet the LGVSD's requirements, the construction contractor would be required to transport the dewatering effluent off site for treatment sufficient to meet discharge requirements.

Excavation dewatering activities can also affect groundwater quality by drawing contaminated groundwater towards previously uncontaminated areas. A substantial amount of excavation dewatering could be required for construction of proposed underground parking structures in the southeast and eastern portions of the project site. The amount of excavation dewatering required could vary significantly depending on the type of excavation shoring systems that would be utilized for the project. For example, soldier piles with timber lagging could require more extensive dewatering, while soil/cement cutoff walls would limit dewatering. The effects of dewatering on groundwater conditions on the project site and surrounding areas would depend on the characteristics of the water bearing zones encountered by excavations, the excavation shoring and dewatering system designs, and the duration of the dewatering.

As discussed in Section 4.8, Hazards and Hazardous Materials, groundwater contamination from petroleum hydrocarbons has been identified in the southern portion of the project site,[43] and investigations and remedial excavation were conducted in 2019 to remove VOC-impacted soil at a former drycleaner located at 412 Gallinas Avenue in the shopping center adjacent to the eastern perimeter of the project site.[44] Following remediation, residual perchloroethylene and its degradation products remained detectable in one groundwater sample at 406/412 Las Gallinas Avenue, but the RWQCB concluded that no human health risk was present under existing conditions and concurred with site closure.[45] Although the shopping center may be hydrologically downgradient from the project site with respect to groundwater flow based on local topography, historic aerial photos[46] indicate that creek beds were formerly present in the southern and eastern portions of the project site that connected to a drainage ditch formerly present on the eastern adjacent shopping center property. Buried creek beds/drainage ditches can have higher hydraulic conductivity than surrounding soils and can create preferential pathways for groundwater flow during dewatering activities. Based on the known groundwater contamination on the project site and the potential for off-site groundwater contamination relatively close to a proposed underground parking structure, dewatering activities at the project site could contribute to the migration of contaminated groundwater to previously uncontaminated areas.

Implementation of Mitigation Measure HAZ-2 requires the preparation and implementation of a Soil and Groundwater Management Plan (SGMP) to address known and potential unidentified

43 TŌR Environmental, Inc. 2017. Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California. August 22.

44 Roux Associates, Inc. 2021. Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California. November 8.

45 San Francisco Regional Water Quality Control Board. 2020. Water Board Staff Concurrence with the Closure Request Report, File No. 21S0068. October 20.

46 Roux Associates, Inc. 2021. Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California. November 8.

subsurface contamination that may be encountered during construction of the project. Mitigation Measure HAZ-2 requires the project sponsor to engage with the appropriate regulatory agency to provide oversight of additional subsurface investigation at the project site, preparation and implementation of an SGMP, and implementation of remedial actions, as necessary, at the project site. The SGMP would also include guidelines for groundwater dewatering, treatment, and disposal to ensure compliance with applicable regulations/permit requirements.

While the requirements of Mitigation Measure HAZ-2 would address the potential for migration of contaminated groundwater from on-site sources, it would not address the migration of potential groundwater contamination from the eastern adjacent property due to project dewatering, which would be a **potentially significant** impact.

Impact HYD-1 Project dewatering could result in the migration of potential off-site groundwater contamination towards the project site. (S)

In order to control the risk of migration of potential off-site groundwater contamination due to project dewatering activities, the project shall implement Mitigation Measure HYD-1.

Mitigation Measure HYD-1 **Prevent Potential Groundwater Contamination Migration.** The project sponsor shall coordinate with the appropriate regulatory agency (most likely the Regional Water Quality Control Board ([RWQCB]) to evaluate whether groundwater beneath the shopping center adjacent to the eastern perimeter of the project site has been contaminated by a release of hazardous materials. If groundwater contamination is identified at this off-site property, the project sponsor shall evaluate whether proposed dewatering activities could result in migration of off-site groundwater contamination to areas that were not previously contaminated. This evaluation shall include the following:

- A detailed analysis of soil formations that would be affected by excavation and dewatering activities, including an analysis of hydraulic conductivity through potential preferential pathways, including the buried former creeks and drainage ditch on and adjacent to the project site;
- A detailed description of proposed excavation shoring and dewatering systems, including dewatering locations, flow rates, and durations that would be required based on the soil formations present; and
- Hydraulic modeling to demonstrate potential changes to groundwater conditions, including changes in groundwater levels and flow directions, and potential movement of contaminated groundwater.

If the evaluation indicates that project dewatering could result in migration of off-site groundwater contamination to previously uncontaminated areas, the proposed excavation shoring and dewatering system design shall be modified as necessary to ensure that project dewatering would not result in the migration of off-site groundwater contamination. Such modifications to the proposed shoring systems could include the use of interlocking sheet piles or soil-cement cut-off walls that can reduce dewatering requirements. The project sponsor shall submit the hydraulic evaluation and dewatering plans to the appropriate regulatory agency for review and approval. The project sponsor shall provide the City of San Rafael (City) with evidence of agency approval for the proposed dewatering activities prior to the City issuing permits for installation of excavation shoring or dewatering systems. (LTS)

Implementation of Mitigation Measure HAZ-2 would ensure that subsurface contamination on the project site would be properly investigated and remediated, and implementation of Mitigation Measure HYD-1 would ensure that the risk of project dewatering resulting in the migration of potential off-site groundwater contamination to previously uncontaminated areas would be reduced to less than significant. Therefore, compliance with State, regional, and local regulations and implementation of Mitigation Measures HAZ-2 and HYD-1 would ensure protection of surface and groundwater water quality during construction activities, and impacts would be **less than significant with mitigation.**

Operation. The project would result in the intensification of land uses on the project site compared to the existing shopping mall but would reduce daily vehicle trips to and from the project site. Pollutants of concern from vehicle traffic (e.g., leaks of fuels and lubricants, tire wear particulates, brake dust, and fallout from exhaust emissions) would continue to be generated on the project site and, under existing conditions, would be conveyed in runoff during storm events. Debris and particulates that gather on impervious surfaces such as paved areas and roofs of buildings could also add heavy metals and sediment to the pollutant load in the runoff. The proposed landscaping could contain residual pesticides and nutrients used for landscape maintenance, and the intensification of land uses could also result in increased trash generation over existing conditions. These pollutants could be transported in runoff from the project site and thereby degrade water quality in Gallinas Creek and San Pablo Bay. Pollutants in runoff can also impact shallow groundwater quality if untreated runoff infiltrates the ground surface in areas where groundwater is shallow.

The proposed project would replace more than 5,000 square feet of impervious surfaces and therefore would be required to implement post-construction stormwater management and treatment measures to reduce pollutant loads in runoff in accordance with Section E.12 of the Small MS4 Permit. The project must prepare an SCP that describes how runoff would be routed to LID stormwater treatment facilities that are sized and designed using either volumetric or flow-based criteria specified in the Small MS4 Permit, and the SCP must be approved by the City of San Rafael (City). The project would also be required to identify potential sources of

pollutants and implement source control measures and perform inspection and maintenance of stormwater treatment facilities. The project would include the use of municipal recycled water for all landscape irrigation; therefore, holding ponds must be designed and managed such that no discharge occurs unless it is the result of the 25-year, 24-hour storm event in accordance with the City's Municipal Code Section 9.30.070. The Preliminary SCP[47] for the project includes the use of bioretention areas that would accommodate 6 inches of ponding depth for retention of stormwater. The City's review of the project designs and SCP would ensure that the project complies with the stormwater control and treatment regulations discussed above. Because stormwater runoff from the project site is not currently treated and the project would include stormwater treatment, the project would result in less contamination of surface water than existing conditions.

As discussed in Section 4.8, Hazards and Hazardous Materials, construction of landscaping (and in particular stormwater treatment/infiltration features) over areas of contaminated soil or groundwater could increase the leaching of contaminants from soil into groundwater or the migration of contaminated groundwater; however, implementation of Mitigation Measure HAZ-2 would ensure that subsurface contamination on the project site would be properly investigated and remediated under regulatory agency oversight.

Required compliance with the Small MS4 Permit and the City's Municipal Code and implementation of Mitigation Measure HAZ-2 would ensure the protection of groundwater and surface water quality during operation of the project. Therefore, this impact would be **less than significant with mitigation**.

Threshold 4.7.2: Groundwater Supplies. The potential for the proposed project to result in adverse effects to groundwater during construction period dewatering, alteration of existing pervious surfaces, or through use of groundwater supply sources during project operations is discussed below.

Construction Dewatering. Construction of the project would require dewatering of groundwater from areas of excavation. A substantial amount of excavation dewatering could be required for construction of proposed underground parking structures in the southeast and eastern portions of the project site; however, these areas of the project site are not located within a designated groundwater basin and the dewatering would be temporary and localized; therefore, dewatering in these areas would not result in depletion of a significant groundwater supply resource. Limited excavation dewatering could be required for construction of foundation features or utilities in other areas of the project site, including in the northeast corner of the project site, which is within the Novato Valley Groundwater Basin;[48] however, such dewatering would be localized to smaller excavation areas and limited in duration. Groundwater recharge within the Novato Valley Groundwater Basin occurs principally as infiltration from streambeds that exit the upland areas within the drainage basin and from direct percolation of precipitation

[47] Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.

[48] California Department of Water Resources (DWR). 2023a. Groundwater Basin Boundary Assessment Tool, Website: https://gis.water.ca.gov/app/bbat/ (accessed April 6).

that falls on the basin floor.[49] Therefore, construction dewatering activities would result in **less than significant** impacts related to groundwater recharge or groundwater supplies.

Altering Pervious Surfaces. Infiltration of stormwater into the subsurface of the project site under existing conditions is limited by the existing impervious surfaces and by the shallow bedrock and/or near-surface clayey soils underlying the project site, which are not conducive to infiltration.[50]

The proposed project would result in an increase in the pervious area of the project site by increasing the amount of landscaping and adding stormwater bioretention areas. Pervious area would increase from 3.7 acres under existing conditions to 4.5 acres with the proposed project. Bioretention areas not only allow for infiltration of precipitation that falls directly on the bioretention area, but they can also serve to promote infiltration of runoff from impervious areas. The Preliminary SCP for the project indicates that the proposed bioretention areas would be lined with concrete on their sides; however, the bottoms of the planters would not be lined.[51] As discussed in Section 4.6, Geology and Soils, this bioretention planter design could conflict with a recommendation from the Geotechnical Investigation[52] that runoff should be collected in lined ditches or drainage swales due to expansive soil conditions. Mitigation Measure GEO-1 requires the project geotechnical engineer to review the proposed bioretention designs to determine whether they meet the geotechnical recommendations, and bioretention planter designs may be modified, if necessary, according to geotechnical recommendations. Although lining the bottoms of bioretention planters would decrease the infiltration potential for the project, the project site would still include more landscaped pervious area compared to the existing conditions and therefore would still increase groundwater recharge potential compared to the existing condition. In addition, the project site is not conducive to infiltration under existing conditions as discussed above. Therefore, potential impacts related to groundwater recharge and subsidence due to changes in pervious surfaces would be **less than significant**.

Water Supply. As discussed under Section 4.7.1, Setting, the majority of the potable water supply for the project would come from surface water sources managed by Marin Water and Sonoma Water, and a small portion of the potable water supply would include groundwater from the Santa Rosa Plain Subbasin (up to 3 percent in normal years) of Sonoma Water's water supply. Marin Water does not currently use, nor does it plan to use, its surface water sources for groundwater recharge; however, Marin Water's 2040 Water Resources Plan recommended that Marin Water explore groundwater partnering opportunities with a Sonoma Water customer that also uses groundwater supplies to implement an in-lieu groundwater recharge program in

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49 California Department of Water Resources (DWR). 2004. California Groundwater Bulletin 118, San Francisco Bay Hydrologic Region, Novato Valley Groundwater Basin. February 27.

50 Langan Engineering and Environmental Services, Inc. 2021. Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California. December 22.

51 Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.

52 Langan Engineering and Environmental Services, Inc. 2021. Updated Geotechnical Investigation, Northgate Town Square, San Rafael, California. December 22.

order to improve water supply resiliency. Under such a program, Marin Water would allow a portion of its Sonoma Water supply to be used by a partner agency in normal and wet years to offset local groundwater pumping, thereby allowing the basin to recharge and store additional water on those years. The partner agency would then rely on this replenished groundwater supply in dry years, sending some or all of its Sonoma Water supply to Marin Water. This would allow Marin Water to functionally "store" water in the groundwater basin for use during dry years.[53]

While the project would increase the demand on Marin Water's water supply, it would limit the increase in demand by using water-efficient interior plumbing fixtures, appliances, and equipment. In addition, recycled water would be used for all landscape irrigation, and dual plumbing would be installed in residential buildings to allow for the use of recycled water for domestic toilet flushing.[54] The use of recycled water for irrigation would also be limited by using drought-tolerant landscaping and through low water use practices such as drip irrigation and smart controllers that track weather patterns and adjust irrigation run times accordingly.

The WSA[55] evaluated the projected use of municipal water by the project as discussed in Section 4.14, Utilities and Service Systems. The WSA estimated that the project would increase the demand on Marin Water's potable and recycled water supplies by 228 AFY and 51 AFY, respectively. While Marin Water's water demand projections in the 2020 Urban Water Management Plan account for growth within the Marin Water service area, the project was not explicitly included in these projections, and the projected demand for water use associated with the project is higher than the projected demand growth anticipated by the 2020 UWMP. [56]

The WSA concluded that Marin Water expects to be able to meet all future demands within its existing service area, inclusive of the project, in normal, dry, and multiple dry hydrologic years; however, under an extreme drought scenario, water supply shortfalls of up to 65 percent are possible. The WSA indicates that the shortfalls that are currently projected during an extreme drought scenario are not materially different from the shortfalls that would be experienced without the project and would be addressed through planned implementation of Marin Water's Water Shortage Contingency Plan. In addition, Marin Water is currently preparing a Strategic WSA that will identify ways in which its water supply portfolio can be augmented to serve all users, which would include the project, in such an extreme drought scenario.[57] The project-specific WSA was approved by the Marin Water Board on December 13, 2022. [58]

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53 EKI Environment & Water, Inc. 2021. 2020 Urban Water Management Plan for Marin Municipal Water District. June.

54 EKI Environment & Water, Inc. 2022. Water Supply Assessment for Northgate Town Square, Marin Municipal Water District. November.

55 Ibid.

56 Ibid.

57 Ibid.

58 Marin Water. 2022. Review and Refer for Board Approval, Water Supply Assessment for Proposed Northgate Town Square Redevelopment. November 18.

The increase in water supply demand due to the project could result in an increase in groundwater use from the Santa Rosa Plain Subbasin, particularly during drought conditions. The water demand from the project was not accounted for in Marin Water's water demand projections provided to Sonoma Water during development of the 2020 UWMP; therefore, the project could interfere with sustainable management of groundwater in the Santa Rosa Plain Subbasin if not included in future water supply planning efforts. This would be a **potentially significant** impact.

Impact HYD-2 The increase in water supply demand due to the project could potentially interfere with sustainable management of groundwater in the Santa Rosa Plain Subbasin. (S)

Although no groundwater was pumped in 2020 to make up Sonoma Water's supplies and Marin Water does not pump groundwater and does not plan to use groundwater as a supply source in the future, groundwater is supplied by Sonoma Water during drought conditions. In order to ensure that the proposed project would not interfere with sustainable management of groundwater recharge in the Santa Rosa Plain Subbasin, Sonoma Water should include the proposed project in its future water management plan projections, as required by Mitigation Measure HYD-2.

Mitigation Measure HYD-2 **Water Supply Coordination.** The Water Supply Assessment (WSA) prepared for the project shall be provided to Sonoma Water for review so that Sonoma Water can account for the increased water supply demand that would be generated by the project in their groundwater management efforts to maintain sustainable management of the Santa Rosa Plain Subbasin. (LTS)

Implementation of Mitigation Measure HYD-2 would ensure Sonoma Water accounts for future demand from the proposed project in its planning efforts and updates to the Urban Water Management Plan (which are required every 5 years) and that impacts of the project related to sustainable management of a groundwater basin would be **less than significant with mitigation**.

Threshold 4.7.3: Erosion and Siltation. Construction activities would involve excavation and grading, which would temporarily expose soil to potential erosion and increase the risk of siltation in storm drainage systems and receiving waters. As described under Threshold 4.7.1 above, compliance with the Construction General Permit would ensure that potential impacts related to erosion of exposed soil or sedimentation of receiving waters or the storm drain system during construction of the proposed project would be less than significant.

During operation of the project, the project site would be covered by structures, pavement, and landscaped areas, with no ongoing soil exposure or disturbance that could result in erosion and siltation. Stormwater runoff from the project would be treated in bioretention areas in accordance with the requirements of the Small MS4 Permit, which would minimize the amount of silt in stormwater runoff and reduce the rate of stormwater runoff from the project site compared to the existing condition, which in turn would decrease the potential for erosion in downstream drainage courses. Operation of the project would therefore have **less than significant** impacts related to erosion and siltation.

Threshold 4.7.4: Altering Drainage. The project would alter the surface water drainage patterns on the project site by altering impervious/pervious surfaces and installing new stormwater treatment and drainage facilities. As described under Threshold 4.7.1 above, required compliance with the Construction General Permit, Small MS4 Permit, and the City's Municipal Code would ensure the project would not result in substantial additional sources of polluted runoff. As described under Threshold 4.7.2 above, the project would increase pervious surfaces by 0.8 acre compared to the existing conditions and convey stormwater runoff to bioretention areas, which would decrease the rate of stormwater runoff from the project site compared to the existing conditions. Therefore, the project would not create additional runoff that could contribute to exceeding the capacity of stormwater drainage systems. As described under Threshold 4.7.1 above, because the project would include the use of municipal recycled water for all landscape irrigation, the project must be designed and managed such that no untreated stormwater discharge occurs unless it is the result of the 25-year, 24-hour storm event, in accordance with the City's Municipal Code. Therefore, the project would result in **less than significant** impacts related to not accommodating the peak flow rate for up to a 25-year storm event.

Based on the Preliminary Grading Plan and Drainage Plan and Preliminary SCP,[59] it is not clear whether the proposed on-site stormwater infrastructure could accommodate the peak flow rate from a 100-year storm event such that the finished floor elevation of the proposed or existing buildings on the project site would have more than 1 foot of freeboard above the 100-year storm event hydraulic grade line water elevation. As discussed under Section 4.7.1 above, the project would not be susceptible to direct inundation from sea level rise in the foreseeable future based on the elevation of the project site; however, the drainage channel on the east side of US-101 that receives runoff from the project site could be affected by sea level rise that could affect future drainage conditions at the project site and surrounding areas. If 100-year storm runoff would exceed the capacity of proposed on-site stormwater infrastructure, flooding potentially could occur on the project site or runoff from the project site could contribute to flooding of surrounding roadways, which could impede evacuation along key roadways such as Los Ranchitos Road, Las Gallinas Avenue, and Merrydale Road, which would be a **significant impact.**

Impact HYD-3 The 100-year storm runoff from the project site could exceed the capacity of proposed stormwater infrastructure and result in flooding on the project site and surrounding roadways. (S)

In order to control the risk of 100-year storm runoff exceeding the capacity of proposed stormwater infrastructure, the project shall implement Mitigation Measure HYD-3.

Mitigation Measure HYD-3 **Hydraulic Modeling.** The project sponsor shall hire a qualified Civil Engineer to perform hydraulic modeling to evaluate the 100-year storm event hydraulic grade line water elevations on the project site under proposed project conditions. The qualified Civil Engineer shall coordinate with the City to determine the estimated sea level rise amount that shall be used in the hydraulic modeling. The evaluation

[59] Merlone Geier Partners. 2022. Northgate Town Square, Redevelopment Plan, Resubmittal Application. March 9.

shall account for contribution of runoff from the project site and surrounding properties (including reasonably foreseeable projects identified by the City) into public roadways. If the evaluation demonstrates that the 100-year storm event could result in on-site flooding above the minimum of 1 foot of freeboard from the finished floor elevations on the project site or that runoff from the project site could contribute to increased flooding in off-site areas (including roadways), the project shall incorporate additional stormwater retention systems (e.g., swales, retention ponds, or cisterns with metered outlets) and/or additional stormwater conveyance systems into the project design to ensure that stormwater runoff from the project would not result in on-site flooding or contribute to increased off-site flooding. The results of the hydraulic modeling and any changes to the project's stormwater management system designs shall be submitted to the City for review and approval prior to the issuance of grading or building permits. (LTS)

Implementation of Mitigation Measure HYD-3 would ensure that potential impacts related to on-site or off-site flooding would be **less than significant with mitigation**.

Threshold 4.7.5: Release of Pollutants Due to Project Inundation. The project site is not located within a flood hazard zone[60] or a tsunami hazard area.[61] Seiches are not considered a hazard in San Francisco Bay based on the natural oscillations of the Bay,[62] and there are no other water bodies located near the project site that could generate a seiche that could impact the project site. Therefore, potential impacts related to the release of pollutants as a result of flooding, tsunami, or seiche would be **less than significant**.

4.7.2.3 Cumulative Impacts

The geographic areas of concern for cumulative hydrology and surface water quality impacts are the streets, storm drains, and surface waters that could receive runoff from the project site and cumulative projects. It should be noted that there are no current or probable future projects under City review within the vicinity of the project site. The geographic areas of concern for cumulative groundwater quality and supply impacts are Novato Valley Groundwater Basin and the Santa Rosa Plain Subbasin.

Stormwater runoff and groundwater dewatering from the project site and cumulative projects occurring under buildout of the General Plan could result in degradation of surface water and

60 Federal Emergency Management Agency (FEMA). 2023. National Flood Hazard Layer (NFHL) Viewer, Map No. 06041C0293E, effective March 16, 2016. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd (accessed April 6).

61 California Geological Survey. 2022. Tsunami Hazard Area Map County of Marin. October 7.

62 Borrero, J., L. Dengler, B. Uslu, C. Synolakis. 2006. *Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay*. June 8. Report prepared for the Marine Facilities Division of the California State Lands Commission.

groundwater quality if appropriate management of stormwater runoff and groundwater dewatering are not performed. Stormwater discharges from past and existing projects within the project vicinity have contained pollutants that have contributed to impairment of the water quality of Gallinas Creek and San Pablo Bay, which is a cumulative impact. Stormwater regulations have become progressively more stringent since the passing of the federal Clean Water Act, and current regulations require new developments to manage and treat all significant sources of stormwater pollutants, which includes potential erosion and siltation. Compliance with the Construction General Permit would ensure that stormwater runoff during project construction would not result in significant erosion/siltation or degradation of receiving water quality. During operation, the project site would not be susceptible to erosion and stormwater runoff would be treated in accordance with the Small MS4 Permit and the City's Municipal Code. Stormwater runoff from the project site is not currently treated; therefore, the project would reduce the operational pollutant loads in stormwater runoff from the project site compared to the existing conditions. Therefore, the project's contribution to cumulative erosion, siltation, and other surface water quality degradation would be **less than significant**. Cumulative projects would also be subject to existing regulations that protect surface water quality and prevent erosion and siltation during construction and operation. Compliance with existing regulations that protect stormwater runoff quality would also serve to protect groundwater quality during construction and operation of the project and cumulative projects. In addition, the project would implement Mitigation Measures HAZ-2 and HYD-1 to further ensure the protection of groundwater quality as described under Threshold 4.7.1 above. Therefore, the project's contribution to the cumulative degradation of groundwater quality would be **less than significant with mitigation**.

The project would increase the amount of pervious surface compared to the existing condition; therefore, the project would not contribute to a decrease in infiltration and groundwater recharge that could contribute to subsidence. As described under Threshold 4.7.2 above, the project would increase infiltration of stormwater at the project site compared to existing conditions; therefore, the project would have a beneficial effect related to groundwater recharge and would not contribute to cumulative impacts related to decreased groundwater recharge and subsidence due to increasing impervious surfaces.

As described under Threshold 4.7.2 above, the increase in water supply demand due to the project could result in an increase in groundwater use from the Santa Rosa Plain Subbasin, particularly during drought conditions. If the projected demand for water use associated with cumulative projects would be higher than the projected demand growth anticipated by the 2020 UWMP, then cumulative projects could also result in increased groundwater use from the Santa Rosa Plain Subbasin. Implementation of Mitigation Measure HYD-2 would ensure that the project's contribution to cumulative impacts related to sustainable management of a groundwater basin would be **less than significant with mitigation**.

The proposed project and cumulative projects would alter existing drainage patterns (e.g., by altering impervious surfaces), which could alter stormwater runoff patterns and impact the capacity of existing storm drain systems. As described under Threshold 4.7.4 above, the project would decrease the rate of stormwater runoff from the project site compared to the existing conditions. Therefore, the project would not create additional runoff that could contribute to a cumulative

impact of exceeding the capacity of stormwater drainage systems. Because the project would include the use of municipal recycled water for all landscape irrigation, the project must be designed and managed such that no untreated stormwater discharge occurs unless it is the result of the 25-year, 24-hour storm event in accordance with the City's Municipal Code. Therefore, the project would accommodate the peak flow rate for up to a 25-year storm event.

As described under Threshold 4.7.4 above, it is not clear whether the proposed on-site stormwater infrastructure could accommodate the peak flow rate from a 100-year storm event such that the finished floor elevation of the proposed or existing buildings on the project site would have more than 1 foot of freeboard above the 100-year storm event hydraulic grade line water elevation. If 100-year storm runoff would exceed the capacity of the proposed on-site stormwater infrastructure, flooding could potentially occur on the project site, or runoff from the project site could contribute to flooding of surrounding roadways that could impede evacuation along key roadways**.** Implementation of Mitigation Measure HYD-3 would ensure that the project's contribution to cumulative impacts related to on-site or off-site flooding would be **less than significant with mitigation**.

As described under Threshold 4.7.5 above, the project site is not located within a flood hazard zone[63] or a tsunami hazard area,[64] and there are no other water bodies located near the project site that could generate a seiche that could impact the project site. Therefore, the project's contribution to cumulative impacts related to the release of pollutants as a result of flooding, tsunami, or seiche would be **less than significant.**

[63] Federal Emergency Management Agency (FEMA). 2023. National Flood Hazard Layer (NFHL) Viewer, Map No. 06041C0293E, effective March 16, 2016. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd (accessed April 6).

[64] California Geological Survey. 2022. Tsunami Hazard Area Map, County of Marin. October 7.

4.8 HAZARDS AND HAZARDOUS MATERIALS

This section provides an overview of potential hazards and hazardous materials within and in the vicinity of the project site and assesses potential impacts to public health and safety and the environment that could result from implementation of the proposed project. Mitigation measures to reduce significant impacts are identified, where appropriate.

4.8.1 Setting

This section describes the existing conditions related to hazards and hazardous materials within and in the vicinity of the project site, as well as applicable regulatory agency framework and local policies.

4.8.1.1 Historical and Current Land Uses

Prior to 1957, the project site was undeveloped land with creek channels present in the southern and southeastern portions of the project site. In 1957, development on the project site had begun with grading of the site's northeast portion. By 1963, grading and placement of fill material across the entire project site had occurred, and the hillside adjacent to the east of the project site had also been graded and benched, suggesting that this hillside was a source of fill material for the project site. Construction of the existing buildings in the central portion of the project site had also begun by 1963, and the Emporium opened in 1965; additional buildings and the surrounding parking lots were completed by 1968. By 1974, the former Sears Department Store, Auto Center, and Appliance Service Center and surrounding parking lots had been built in the southern portion of the project site. By 1987, the parking structure in the southwest portion of the project site had been constructed after the mall underwent a major renovation. By 1993, the Kohl's building was constructed in the western portion of the project site and the HomeGoods building had been constructed in the eastern portion of the project site. The project site continued to be developed through 2012 with the addition of the 5000 Northgate Drive building onto the Kohl's building and the Rite Aid building in the northeast portion of the project site. The buildings on the project site have been occupied by various commercial businesses, including retail stores, restaurants, a movie theater, and appliance and vehicle service facilities.

4.8.1.2 Hazardous Materials and Subsurface Contamination

Information regarding hazardous materials and subsurface contamination at the project site and surrounding properties was obtained from review of the 2021 Phase I Environmental Site Assessment (2021 Phase I ESA)[1] and previous environmental investigations that were attached to the 2021 Phase I ESA (refer to Appendix E). Various businesses at the project site and surrounding properties have been listed on regulatory databases for the storage, use, and disposal of hazardous materials. Many of these database listings are related to the routine storage, use, and disposal of relatively small quantities of hazardous materials and are not considered to present an environmental concern for the project site.

[1] Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

The 2021 Phase I ESA included the review of environmental investigations performed for several leaking underground storage tank (LUST) sites located in areas surrounding the project site and concluded that these off-site LUST cases should not pose a threat to the project site. The 2021 Phase I ESA indicates that investigations and remedial excavation were conducted in 2019 to remove volatile organic compound (VOC)-impacted soil at a drycleaner located at 412 Las Gallinas Avenue, in the shopping center adjacent to the west of the project site. The 2021 Phase I ESA indicates that the San Francisco Bay Regional Water Quality Control Board (RWQCB) concurred with a Closure Request Report for the drycleaner in a letter dated October 20, 2020. The 2021 Phase I ESA did not indicate whether groundwater had been impacted by VOCs at this adjacent off-site property, or whether the VOC release at this off-site property could potentially impact the project site. This off-site property is not listed as a hazardous materials release site on the State Water Resources Control Board (SWRCB) GeoTracker database,[2] and no other information regarding the investigations and remedial excavation performed at this property is presented in the 2021 Phase I ESA.

Information from database listings and previous investigations that identified existing or potential hazardous building materials and hazardous materials contamination at the project site is discussed below.

Hazardous Building Materials. A hazardous materials survey performed in 2007 identified six transformers suspected of containing polychlorinated biphenyls (PCBs) in the catwalk of the project site buildings, and four samples of paint were analyzed and found to contain lead.[3] A lead-based paint survey was also performed in 2008 that identified red paint on various steel beams and columns at the project site as lead-based paint.[4]

Transformer Oil Release. A 1993 Phase I ESA indicated that the Pacific Gas and Electric Company (PG&E) had previously tested all pad-mounted transformers at the project site and three were found to contain PCBs at concentrations greater than 50 parts per million (ppm).[5] These three transformers were reportedly replaced with non-PCB-containing transformers.[6] Only one transformer observed at the project site during the 2021 Phase I ESA had a visible “Non-PCB” label. A database listing indicated that in November 1997, a PG&E transformer leaked 125 gallons of oil into a subsurface vault. All of the oil was reportedly contained within the vault and the leak was

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2 State Water Resources Control Board (SWRCB). n.d. GeoTracker Database. Website: https://geotracker.waterboards.ca.gov/ (accessed March 29, 2023).

3 RGA Environmental. 2008. *Hazardous Materials Survey, The Mall at Northgate, San Rafael, California*. March 13.

4 ATC Associates, Inc. 2008. Limited XRF Paint Sampling – Northgate Mall, 5800 Northgate Mall, San Rafael, CA. August 12.

5 Substances containing PCBs at concentrations exceeding 50 ppm are regulated as PCBs containing materials under the Toxic Substances Control Act for remediation and disposal purposes; however, exposure to materials containing PCBs at much lower concentrations than 50 ppm can present health risks.

6 ATC/Diagnostic Environmental Inc., 1993. *Environmental Site Assessment, Northgate Mall, San Rafael, California*. August 12.

fixed.[7] It is not known whether transformers with PCB concentrations below 50 ppm may have remained at the project site. Information regarding the location of the transformer that leaked or whether the leaked oil contained PCBs was not available in the 2021 Phase I ESA. PCBs can be absorbed into concrete, and if cracks or holes were present in the vault where leakage occurred, then PCBs could have been released into underlying soil.

Staining at Backup Generator. Staining has been observed on a concrete pad around a diesel-powered backup generator located on the west side of the Kohl's (former Mervyn's) building over the course of many years. This staining was first documented in a 1993 Phase I ESA that identified it as minor oily staining.[8] The staining was identified again during a 2009 Phase I ESA that identified it as diesel staining from apparent minor spillage from overfills.[9] Photos included in the 2009 Phase I ESA show this area of staining extending to the edges of the concrete pad, which is located within a planter area. Therefore, it is possible that releases of diesel fuel have resulted in contamination of soil near this generator.

Potential Dry Cleaning and Auto Parts Cleaning. Database listings indicated that the former Sears Department Store disposed of various solvents in 2004 and 2008, including trichloroethylene (TCE) and tetrachloroethylene (PCE). The 2021 Phase I ESA indicates that these chemicals may indicate that dry-cleaning activities may have taken place within the former Sears Department Store. A 2009 Phase I ESA indicated that the Sears facility at 8108 Northgate Drive was identified as a laundry and garment service in 2003; however, dry cleaning operations were denied by Sears and Macerich (the former owner of the project site), and the solvents were likely related to Sears Auto Center operations. Fairfax French Cleaners was in operation at the project site until 2007; however, according to a 1993 Phase I ESA, this location was used for pickup/drop-off only, and no dry cleaning was performed on site.[10] Hazardous materials releases are common at older dry cleaning facilities and auto repair facilities that historically disposed of used solvents through sewer systems, which can be prone to leakage. Solvents including TCE and PCE were commonly used for dry cleaning and auto parts cleaning. Such hazardous materials releases are a common source of subsurface contamination from VOCs (including TCE and PCE), which can migrate readily through soil and groundwater and impact indoor air quality due to vapor intrusion into buildings. Concentrations of PCE have been detected in soil vapor beneath the former Sears Auto Center as discussed below.

Former Sears Department Store and Auto Center. Database listings indicated that between 1989 and 2018, Sears Roebuck & Co. and Sears Auto Center at 9000 Northgate Drive disposed of sludge waste, oil-containing waste, solvents, organic/inorganic solid waste, and various types of chemical solutions. In 1994 and 1995, this facility disposed of PCB-containing material. In 2017, this facility disposed of 2.4 tons of contaminated soil from site cleanup. The auto center reportedly had six

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7 Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

8 ATC/Diagnostic Environmental Inc. 1993. *Environmental Site Assessment, Northgate Mall, San Rafael, California*. August 12.

9 Bureau Veritas North America, Inc. 2009. *Phase I Environmental Site Assessment, Mervyn's Department Store, 5010 Northgate Mall, The Mall at Northgate, San Rafael, California*. January 5.

10 Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

underground storage tanks (USTs) for product and waste oil as well as a concrete sump for waste oil and grease that were installed in 1972. Jiffy Lube/Flamingo Properties was also listed at 9000 Northgate Drive as a gasoline service station/auto repair shop from 1996 to 2009. Between 1996 and 2005, this facility disposed of oil-containing waste and various organic solutions.[11]

The 2021 Phase I ESA summarized information from several environmental investigations and hazardous materials removal actions performed at the project site, with supporting documentation presented in Appendix H of the 2021 Phase I ESA (provided in Appendix E). Many of the investigations and cleanup actions occurred at the former Sears Department Store and Auto Center (which also included a former gas station) as summarized below.

Removal of USTs, Fuel Dispensers, Piping, and Hydraulic Lifts from the Sears Auto Center. UST removal documentation included in Appendix H of the 2021 Phase I ESA indicates that at least four USTs were removed from the former Sears Auto Center in 1986: one 8,000-gallon gasoline tank, one 1,000-gallon waste oil tank, and two 500-gallon bulk motor oil tanks. According to a 1987 letter from the Marin County Department of Environmental Health (DEH), which is included in Appendix H of the 2021 Phase I ESA, soil and groundwater sample results indicated a "…safe level or absence of any residual of product formerly stored in the underground storage tanks at this location." [12] Soil or groundwater testing results were not included in the UST removal documentation; therefore, the degree of subsurface contamination identified during removal of the former USTs, if any, is unknown. Other documents included in Appendix H of the 2021 Phase I ESA indicate the former presence and removal of two gasoline USTs at the former gas station; however, the UST removal documentation included in Appendix H of the 2021 Phase I ESA did not indicate removal of a second fuel UST.

In 1994, two fuel dispenser islands and associated piping were removed from the former gas station next to the Sears Auto Center building. Oil piping associated with former oil USTs at the Sears Auto Center building was also removed. Approximately 34 cubic yards of petroleum-hydrocarbon-impacted soil was segregated and disposed of off site.[13] Soil samples were collected from beneath the piping, and only minor concentrations of petroleum hydrocarbons were detected in the samples. Chromium was detected in one sample above typical San Francisco Bay Area (Bay Area) background concentrations. Due to the low levels of petroleum hydrocarbons and low risk of public exposure to this soil, no further investigation was recommended at the time. Based on the results of the dispenser island removal, closure of this site was requested from the San Rafael Fire Department in 1999. In response, the City of San Rafael (City) requested specific records from Sears, including documentation of UST removals

[11] Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

[12] Ibid.

[13] Fluor Daniel GTI. 1996. Dispenser Island and Product Line Removal Report, Sears Store 1528, 9000 Northgate Mall, San Rafael, California. July 1.

and associated lab reports, and requested additional soil and groundwater sampling for analysis of methyl-tert-butyl-ether (MTBE).[14]

A 1997 report documented the removal of three hydraulic lifts at the former Sears Auto Center. Concentrations of hydraulic oil and PCBs were detected in soil near the lifts, and contaminated soils were excavated to a depth of 3 feet. The presence of PCBs may indicate that the lifts were installed prior to the 1977 ban on PCBs; therefore, the remaining 14 lifts may have similar subsurface impacts.[15]

The 2021 Phase I ESA indicates that in an email exchange dated September 23, 2021, MGP XI Northgate, LLC provided documentation of hydraulic lift decommissioning from Transform SR Holding Management LLC (Transform), which manages the former Sears company's current business affairs. According to Transform, no report was generated for the decommissioning of the 14 former hydraulic lifts, and the typical procedures for Sears Auto Group include pulling the pistons from the ground, pumping out as much hydraulic fluid as possible, filling the remaining cylinder with sand, and capping with concrete.[16]

2009 Phase I and II ESAs. A Phase I ESA was prepared for the project site in 2009 that recommended a Phase II investigation be performed at the Sears Auto Center based on the lack of information regarding USTs, the potential for subsurface contamination from petroleum hydrocarbons and PCBs from the remaining hydraulic lifts, and the potential for subsurface contamination (particularly from PCEs and TCEs) from the oil/water separator and connected trench drain.[17]

A Phase II ESA was performed at the former Sears Auto Center in 2009. No evidence of remaining USTs was found during a geophysical survey and site inspection. Soil borings targeted the areas of former USTs, existing and former hydraulic lifts, the trench drain, and oil/water separator. Two groundwater monitoring wells were installed to the north of the former gas station; however, the wells did not produce sufficient groundwater for sampling at the time; therefore, it was recommended that they be sampled at a later date. Although photoionization detector (PID)[18] readings ranging from 30 to 200 ppm were noted in multiple borings adjacent to the north of the trench drain, only relatively minor concentrations of petroleum hydrocarbons and VOCs including methylene chloride, acetone, and 2-butanone were detected in soil samples.[19] The elevated PID readings suggest that impacts from VOCs could be present in the subsurface of the former Sears Automotive Center that were not identified by the soil sampling

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14 Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California.* November 8.

15 Roux Associates, Inc. 2021. Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California. November 8.

16 Ibid.

17 Ibid.

18 A PID measures concentrations of volatile organic vapors, and elevated readings are typically indicative of contamination from petroleum hydrocarbons and/or VOCs.

19 Sigma Engineering, Inc. 2009. *Phase II Environmental Site Assessment Recommendations, Sears Automotive Center, Northgate Mall, 9000 Northgate Mall, San Rafael, CA*. October 20.

and analysis performed. Analysis of PCBs was not performed for soil samples collected near the existing and former hydraulic lifts although previous investigations identified potential PCB contamination near hydraulic lifts as a concern, as discussed above.

2017 Passenger Elevator Jack Removal. A passenger elevator jack was removed from the western end of the Sears Department Store in 2017. After removing the jack piston from its casing, sediment and groundwater were removed from within the casing. The groundwater had an oily sheen, and sediment near the groundwater level that had a petroleum hydrocarbon odor was sampled. Sediment was removed up to a depth of approximately 20 feet, where a suspected concrete cap was encountered at the bottom of the casing. Concentrations of petroleum hydrocarbons and polycyclic aromatic hydrocarbons (PAHs) exceeding applicable Environmental Screening Levels (ESLs) were detected in the sediment.[20] PCBs were not detected in the sediment sample.[21]

2017 Limited Phase II Assessment. A Limited Phase II Assessment[22] was performed at the former Sears facilities in 2017**.** A private utility locator identified a possible location of one or more USTs in the parking lot southeast of the former Sears Auto Center building. Borings were advanced in and around the Sears Auto Center near the hydraulic lifts, a sunken work bay, an oil storage area, suspected USTs, a clarifier, and an elevator. Three more borings were advanced near the Sears Department Store elevators, and one boring was advanced in the waste storage area of the former Sears Appliance Service Center. Groundwater samples were collected in two borings near elevators and from the two monitoring wells installed in 2009. A concrete sample was also collected from the Sears Auto Center battery storage area.[23]

Relatively minor concentrations of petroleum hydrocarbons were detected in soil samples near various features, and elevated concentrations of petroleum hydrocarbons were detected near a hydraulic lift and the former Sears Department Store passenger elevator. Petroleum hydrocarbon contamination was also identified in the groundwater samples collected near the Sears Department Store elevators, with very high concentrations detected near the passenger elevator. A relatively minor concentration of petroleum hydrocarbons as diesel was detected in a groundwater sample from the monitoring well on the west side of the former gas station. An elevated concentration of petroleum hydrocarbons as oil and grease was detected in a groundwater sample from the monitoring well on the east side of the former gas station; however, the 2017 Phase II Assessment did not describe this petroleum hydrocarbon contamination.[24] Petroleum hydrocarbons as gasoline were not analyzed in the groundwater samples although the former gas station had gasoline USTs.

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20 Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

21 Amec Foster Wheeler. 2017. Passenger Elevator Jack Removal Assessment Summary, Sears Retail Store #1528, Northgate Mall, San Rafael, California. February 17.

22 TŌR Environmental, Inc. 2017. *Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California*. August 22.

23 Ibid.

24 Ibid.

Elevated concentrations of PCE (exceeding current residential and commercial ESLs[25]) were detected in soil vapor samples at three locations in the western portion of the Former Sear Auto Center. PCE was not detected in other soil vapor samples;[26] however, the soil vapor laboratory reporting limits for PCE and other potential contaminants of concern (including TCE, benzene [a constituent of gasoline], and vinyl chloride [a breakdown product of PCE]) were above the current residential and commercial ESLs for soil vapor. Therefore, undetected contamination from VOCs could be present in soil vapor at the former Sears Auto Center.

The 2017 Limited Phase II Assessment recommended performing further assessment/ remediation of the former Sears Auto Center's in-ground clarifier, hydraulic lifts, sunken work bay, and UST area as well as the former Sears Department store elevators.[27]

2018 Subsurface Assessment. A Subsurface Assessment was performed in 2018 to address environmental concerns identified in the 2017 Limited Phase II Assessment. A geophysical survey was performed south of the former Sears Auto Center to investigate the area identified as possibly containing USTs, and two test borings were advanced in the possible UST area; however, no USTs were found. Three borings were advanced in the former Sears Department Store passenger elevator room, and concentrations of petroleum hydrocarbons were detected in soil and groundwater samples that were much lower than the concentrations identified during the 2017 Limited Phase II Assessment. The 2018 Subsurface Assessment indicated that groundwater sample concentrations at the passenger elevator do not suggest that remedial action is warranted and recommended that the report be shared with the County of Marin (County) with a request for closure.

2021 Phase I ESA. The 2021 Phase I ESA documented staining and spilled liquids on the floors of multiple hydraulic elevator equipment rooms located at the former Sears Department Store and Auto Center buildings during the site reconnaissance. The 2021 Phase I ESA did not identify the staining and spilled liquids as environmental concerns that required further action.[28] Based on the proximity of the staining and spilled liquids to the hydraulic elevator equipment, it is likely that the staining and liquids are from hydraulic oil. Older hydraulic oil can contain PCBs; however, documentation of PCBs testing of concrete or underlying soil/groundwater near these areas of staining is not available except for the PCB analysis performed during the 2017 passenger elevator jack removal, as discussed below. Therefore, it is possible that impacts from PCBs could be present in concrete or underlying soil and groundwater near hydraulic elevator equipment at the project site.

The 2021 Phase I ESA identified environmental concerns at the project site, including concentrations of VOCs in soil vapor and PCBs in soil beneath the former Sears Auto Center that exceeded ESLs, the petroleum hydrocarbon releases at the elevators of the former Sears

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25 Regional Water Quality Control Board (RWQCB). 2019. Environmental Screening Levels. January.

26 TŌR Environmental, Inc. 2017. *Limited Phase II Soil, Soil Gas, and Groundwater Assessment, Sears at Northgate Mall, 9000 Northgate Drive, San Rafael, California*. August 22.

27 Ibid.

28 Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

Department Store that affected soil and groundwater, and the lack of documentation regarding the removal of USTs at the former Sears Auto Center. The 2021 Phase I ESA recommended that these environmental concerns be investigated further during redevelopment after the existing buildings are demolished.

GeoTracker Listing. The former Sears Retail Store is listed on the SWRCB GeoTracker database as a Non-Case Information site with a status of "informational item/review complete" as of December 10, 2021.[29] An email correspondence available on GeoTracker indicates that Marin County referred this site to the RWQCB for review in 2019 after receiving the 2018 Subsurface Assessment, and different staff members from the RWQCB had differing opinions regarding whether to open a Cleanup Program case or keep the site as a Non-Case Information site. The last opinion provided by an RWQCB staff member indicated they did not see why they would not open a Cleanup Program case, especially considering the petroleum contamination in the groundwater that is not delineated and the presence of highly contaminated soil. The RWQCB is not going to leave petroleum product in the subsurface without knowing the extent, the proposed land use, and all the other parameters that the Low Threat Closure Policy requires them to evaluate.[30]

4.8.1.3 Aviation Hazards

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoffs and landings. Other airport operation hazards include incompatible land uses, power transmission lines, wildlife hazards (e.g., bird strikes), and tall structures that penetrate the regulated surfaces surrounding an airport. The nearest airport to the project site is the San Rafael Airport, which is a small private airport located approximately 1 mile northeast of the project site that does not have a land use plan. The nearest public airport to the project site is the Marin County Airport at Gnoss Field in Novato, approximately 9 miles to the north. The project site is not located within the land use plan area for the Marin County Airport at Gnoss Field.[31]

4.8.1.4 Regulatory Framework

The use, storage, and disposal of hazardous materials—including management of contaminated soils and groundwater—is regulated by numerous local, State, and federal laws and regulations. Federal, State, regional, and local agency's jurisdiction in the management of hazards and hazardous materials, as applicable to the proposed project, is described below.

Federal Regulations. At the federal level, the United States Environmental Protection Agency (EPA) administers hazardous materials and hazardous waste regulations, the Occupational Safety and Health Administration (OSHA) regulates worker safety related to hazardous materials handling, and

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29 State Water Resources Control Board (SWRCB). n.d. GeoTracker Webpage for Sears Retail Store #1528. Website: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000014929 (accessed April 4).

30 Regional Water Quality Control Board (RWQCB). 2020. Email Correspondence dated June 19. Website: https://documents.geotracker.waterboards.ca.gov/regulators/deliverable_documents/6645978629/New%20Information%20Email%2006192020.pdf (accessed April 4).

31 Cortright & Seibold. 1991. Airport Land Use Plan, Marin County Airport Gnoss Field. June 10.

the United States Department of Transportation (DOT) regulates hazardous waste transportation. The authority of these agencies and applicable regulations are described below.

United States Environmental Protection Agency (EPA). The EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (CFR). The legislation includes the Resource Conservation and Recovery Act (RCRA) of 1976, the Superfund Amendments and Reauthorization Acts of 1986, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and the Toxic Substances Control Act of 1976 (TSCA). The EPA provides oversight for site investigation and remediation projects, and has developed protocols for sampling, testing, and evaluation of solid wastes.

In 1989, the EPA issued a final rule banning most asbestos-containing products. In 1991, this regulation was overturned and, as a result of the Court's decision, the 1989 asbestos regulation only bans new uses of asbestos in products that would be initiated *for the first time* after 1989 and bans the following specific asbestos-containing products: flooring felt, rollboard, and corrugated, commercial, or specialty paper.[32]

Resource Conservation and Recovery Act (RCRA). The RCRA is a combination of the first federal solid waste statutes and all subsequent amendments mandated by Congress. The RCRA establishes the framework for a national system of solid waste control. Subtitle D of the RCRA is dedicated to non-hazardous solid waste requirements, and Subtitle C focuses on hazardous solid waste. Solid waste includes solids, liquids, and gases and must be discarded to be considered waste. Under Subtitle C of the RCRA, the EPA has developed a comprehensive program to ensure that hazardous waste is managed safely from the moment it is generated to its final disposal (referred to as cradle-to-grave) and may authorize states to implement key provisions of hazardous waste requirements in lieu of the federal government. If a state program does not exist, the EPA directly implements the hazardous waste requirements in that state. Subtitle C regulations set criteria for hazardous waste generators, transporters, and treatment, storage, and disposal facilities. This includes permitting requirements, enforcement, and corrective action or cleanup.

Hazardous Materials Transportation Act (HMTA). The federal HMTA of 1975 is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, and highways and through air or pipelines. It includes provisions for material classification, packaging, marking, labeling, placarding, and shipping documentation.

United States Department of Transportation (DOT). In 1990 and 1994, the federal HMTA was amended to improve the protection of life, property, and the environment from the inherent risks of transporting hazardous material in all major modes of commerce. The DOT developed hazardous materials regulations that govern the classification, packaging, communication,

[32] United States Environmental Protection Agency (EPA). 2023. Asbestos Ban and Phase-Out Federal Register Notices. Website: https://www.epa.gov/asbestos/asbestos-ban-and-phase-out-federal-register-notices (accessed April 6, 2023).

transportation, and handling of hazardous materials, as well as employee training and incident reporting. The transportation of hazardous materials is subject to both RCRA and DOT regulations. The California Highway Patrol, California Department of Transportation (Caltrans), and the California Department of Toxic Substances Control (DTSC) are responsible for enforcing federal and State regulations pertaining to the transportation of hazardous materials.

Occupational Safety and Health Administration (OSHA). Worker health and safety is regulated at the federal level by OSHA. The federal Occupational Safety and Health Act of 1970 authorizes the states to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are regulated by the California Occupational Safety and Health Administration (Cal/OSHA), as described below. California standards for workers dealing with hazardous materials are contained in 8 California Code of Regulations (CCR), which includes practices for all industries (General Industrial Safety Orders) as well as specific practices for construction. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to OSHA Hazardous Waste Operations and Emergency Response regulations. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

State Regulations. At the State level, the California Environmental Protection Agency (CalEPA) implements and enforces environmental laws that regulate air, water, and soil quality; pesticide use; and waste recycling and reduction. CalEPA consists of the DTSC, the SWRCB (which operates via nine RWQCBs), the California Air Resources Board (CARB), the Department of Pesticide Regulation, the California Department of Resources Recycling and Recovery (CalRecycle), and the Office of Environmental Health Hazard Assessment (OEHHA). The DTSC and the SWRCB administer hazardous materials and hazardous waste regulations, CARB regulates air pollution control programs, and Cal/OSHA regulates worker safety related to hazardous materials handling. The authority of these agencies and applicable regulations are described below.

Department of Toxic Substances Control (DTSC). In California, the DTSC is authorized by the EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most State hazardous materials regulations are contained in CCR Title 22. The DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public health and establishes cleanup levels for subsurface contamination that are equal to or more restrictive than federal levels. The DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

California Health and Safety Code. Health and Safety Code Division 20, Chapter 6.5 – Hazardous Waste Control, is the primary hazardous waste statute in the State of California and implements the RCRA as a “cradle-to-grave” waste management system in California. It specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. It also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. It exceeds federal requirements by

mandating source reduction planning and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates additional types of wastes and waste management activities that are not covered by federal law under the RCRA.

Chapter 6.95 of the Health and Safety Code also establishes minimum Statewide standards for Hazardous Materials Business Plans (HMBPs), including basic information on the location, type, quantity, and health risks of hazardous materials and/or waste. Each business must prepare an HMBP if that business uses, handles, or stores a hazardous material and/or waste or an extremely hazardous material in quantities greater than or equal to the following:

- 55 gallons for a liquid
- 500 pounds of a solid
- 200 cubic feet for any compressed gas
- Threshold planning quantities of an extremely hazardous substance

State Water Resources Control Board (SWRCB). The SWRCB enforces regulations on implementation of UST programs. It also allocates funding to eligible parties that request reimbursement of costs to clean up soil and groundwater pollution from UST leaks. The SWRCB also enforces the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) through its nine RWQCBs, including the San Francisco Bay RWQCB, which is described below.

California Air Resources Board (CARB). This agency is responsible for coordination and oversight of State and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. CARB has developed State air quality standards and is responsible for monitoring air quality in conjunction with the local air districts.

California Code of Regulations (CCR) Title 22. Most State and federal regulations and requirements that apply to generators of hazardous waste are spelled out in CCR Title 22, Division 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators, transporters, and treatment, storage, and disposal facilities. Because California is a fully authorized state according to RCRA, most RCRA regulations (those contained in 40 CFR 260 et seq.) have been duplicated and integrated into Title 22. However, because DTSC regulates hazardous waste more stringently than the EPA does, the integration of California and federal hazardous waste regulations that make up Title 22 does not contain as many exemptions or exclusions as does 40 CFR 260. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than the RCRA regulations in 40 CFR 260 do. To aid the regulated community, the State of California compiled the hazardous materials, waste, and toxics-related regulations contained in CCR Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one consolidated CCR Title 26, "Toxics." However, the California hazardous waste regulations are still commonly referred to as Title 22.

California Occupational Safety and Health Administration (Cal/OSHA). Worker health and safety protections in California are regulated by Cal/OSHA. California standards for workers dealing with hazardous materials are contained in CCR Title 8, which includes practices for all industries (General Industrial Safety Orders), as well as specific practices for construction. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that

might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to OSHA Hazardous Waste Operations and Emergency Response regulations. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

California Fire Code. The California Fire Code is Part 9 of CCR Title 24, also referred to as the California Building Standards Code. The California Fire Code incorporates the latest International Fire Code of the International Code Council with necessary California amendments. The purpose of the California Fire Code is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations.

California Fire Code Chapter 33 contains requirements for construction activities, including the development and implementation of a site safety plan establishing a fire prevention program. In addition, California Fire Code Chapter 35 contains specific requirements for welding and other hot work. The requirements are intended to maintain the required levels of fire protection, limit fire ignition and spread, establish the appropriate operation of equipment, and promote prompt response to fire emergencies. Regulated features include fire protection systems, firefighter access, water supply, means of egress, hazardous materials storage and use, and temporary heating equipment and other ignition sources.

Government Code Section 65962.5. The provisions of Government Code Section 65962.5 require the DTSC, the SWRCB, the California Department of Health Services, and CalRecycle (formerly the California Integrated Waste Management Board) to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, LUST sites, and/or hazardous materials releases to the Secretary of CalEPA.

Regional Regulations. The following regional agencies have regulatory authority over the proposed project's management of hazardous materials and hazards.

San Francisco Bay Regional Water Quality Control Board (RWQCB). The Porter-Cologne Act established the SWRCB and divided the state into nine regional basins, each under the jurisdiction of an RWQCB. The RWQCB (Region 2) regulates water quality in the Bay Area, including the project site. The RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the State are threatened, and to require remediation actions, if necessary. The RWQCB has developed ESLs to help expedite the preparation of environmental risk assessments at sites where contaminated soil and groundwater have been identified. The RWQCB issued the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP), Order R2-2015-0049, NPDES Permit No. CAS612008, which addresses the potential discharge of hazardous materials

in municipal stormwater from municipalities in the Bay Area (described in detail under Section 4.9, Hydrology and Water Quality, of this Environmental Impact Report [EIR]).

Bay Area Air Quality Management District (BAAQMD). The BAAQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of the EPA and CARB). BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and the issuance of permits for activities including asbestos demolition and renovation activities.

BAAQMD Regulation 11-2 requires that prior to commencement of any demolition or renovation, the owner or operator must thoroughly survey the affected structure or portion thereof for the presence of asbestos-containing materials (ACMs). The survey must be performed by a person who is certified by the Division of Occupational Safety and Health, who has taken and passed an EPA-approved Building Inspector course, and who conforms to the procedures outlined in the course. The survey must include sampling and the reporting of results of laboratory analysis of the asbestos content of all suspected ACMs. This survey must be made available, upon request by the Air Pollution Control Officer, prior to the commencement of any regulated ACM removal or any demolition. If ACMs are identified, the disturbance/ removal and management of ACMs must be performed in accordance with BAAQMD Regulations under Rule 11-2 to ensure that asbestos would not be released into the environment.

Marin County Public Works, Certified Unified Program Agency (CUPA). Marin County Public Works is the CUPA for the City of San Rafael. The CUPA is the primary agency responsible for local enforcement of State and federal laws pertaining to hazardous materials and hazardous waste management and is responsible for coordination of the following CUPA Programs: HMBP Program, Hazardous Waste Generator/Tiered Permitting Program, UST Program, California Accidental Release Program (CalARP), and the Aboveground Petroleum Storage Tank Program. The role of a CUPA is to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities associated with the regulation of hazardous materials and hazardous wastes.

Marin County Emergency Operations Plans. The following emergency operations and local hazard mitigation plans are applicable to the project area:

- **Marin County Operational Area Emergency Recovery Plan (ERP).** The Marin County Operational Area ERP[33] establishes procedures and assigns responsibility to ensure the effective management of emergency recovery operations within the Marin County Operational Area, which includes San Rafael. The ERP describes operational concepts relating to recovery, identifies components of recovery organization, and describes general responsibilities of the Marin County Sheriff's Office of Emergency Services (Marin OES).

[33] Marin County Sheriff's Office of Emergency Services (OES). 2012. Marin County Operational Area Emergency Recovery Plan (ERP). November.

Recovery operations in a multi-jurisdictional incident are coordinated and managed by the Operational Area in accordance with the California Emergency Services Act.[34]

- **Marin Operational Area Emergency Operations Plan (EOP).** The Marin Operational Area EOP[35] establishes policies and procedures, in addition to assigning responsibilities to ensure the effective management of emergency operations within the Marin Operational Area. Cities and towns within the Marin County participate in the Marin Operational Area coordination of emergency management activities. Emergency operations are split into four phases: Preparedness Phase, Response Phase, Recovery Phase, and Prevention/Mitigation Phase. The City of San Rafael coordinates with Marin OES to ensure emergency management functions meet the expectations of the City.[36]

- **Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP).** The MCM LHMP [37] assesses risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks. Several jurisdictions and special districts participated in the creation of the MCM LHMP, including the City of San Rafael. The risks and mitigations in the MCM LHMP are broad and encompass the entirety of Marin County. The MCM LHMP incorporates each local jurisdiction's individual LHMP as appendices to ensure jurisdiction-specific information supplements the vulnerability mitigation included in the MCM LHMP. The City of San Rafael LHMP is incorporated into the MCM LHMP as Appendix P.[38]

Local Plans and Regulations. The City of San Rafael General Plan, Municipal Code, and Local Hazard Mitigation Plan (LHMP) are discussed below.

City of San Rafael General Plan. The following policies and programs of the City of San Rafael General Plan 2040 pertaining to hazards and hazardous materials would be applicable to the proposed project:

Policy S-1.1: Local Hazard Mitigation Plan (LHMP). The San Rafael LHMP is adopted by reference into the General Plan. Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.

Program S-1.1A: LHMP Mitigation Action Plan. Implement the Mitigation Action Plan in the LHMP. The City will consider opportunities to advance each action through operating procedures, development approvals, budgets, public education, and capital improvement projects.

Policy S-5.2: Hazardous Materials Storage, Use and Disposal. Enforce regulations regarding proper storage, labeling, use and disposal of hazardous materials to prevent leakage,

34 Placeworks. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR*. January 7.
35 Marin County Sheriff's Office of Emergency Services (OES). 2014. Marin Operational Area Emergency Operations Plan. October.
36 Placeworks. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR*. January 7.
37 Marin County Sheriff's Office of Emergency Services (OES). 2018. Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP).
38 Placeworks. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR*. January 7.

potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.

Program S-5.2A: CUPA Program. Continue to participate in the Certified Unified Program Agency (CUPA) program. The CUPA's responsibilities shall include overseeing the investigation and closure of contaminated underground storage tank sites.

Policy S-5.4: Development on Formerly Contaminated Sites. Ensure that the necessary steps are taken to clean up residual hazardous materials on any contaminated sites proposed for redevelopment or reuse. Properties that were previously used for auto service, industrial operations, agriculture, or other land uses that may have involved hazardous materials should be evaluated for the presence of toxic or hazardous materials in the event they are proposed for redevelopment with a sensitive land use.

Program S-5.4A: Use of Environmental Databases in Development Review. When development is proposed, use environmental and hazardous materials data bases (such as the State GeoTracker data base) to determine whether the site is contaminated as a result of past activity. As appropriate, require studies and measures to identify and mitigate identified hazards.

Program S-5.4B: Hazardous Soils Clean-Up. Work with appropriate agencies to require remediation and clean-up prior to development of sites where hazardous materials have impacted soil or groundwater. The required level of remediation and clean-up shall be determined by the Certified Unified Program Agency based on the intended use of the site and health risk to the public.

Program S-5.4C: Environmental Site Management Plan (ESMP). Require the preparation of an ESMP in consultation with the San Francisco Bay Regional Water Quality Control Board and/or the Department of Toxic Substance Control (DTSC), for proposed development on sites with known contamination of hazardous materials pursuant to Government Code Section 65962.5. This includes, but is not limited to, sites in the on-line DTSC EnviroStor Data Base and the State GeoTracker Data base.

Program S-5.4D: Soil Vapor Intrusion Assessment. For sites with potential residual soil or groundwater contamination that are planned for redevelopment with an overlying occupied building, a soil vapor intrusion assessment shall be performed by a licensed environmental professional. If the results indicate the potential for significant vapor intrusion into the building, project design shall include vapor controls or source removal as appropriate in accordance with regulatory agency requirements.

Policy S-5.5: Transportation of Hazardous Materials. Enforce Federal, State and Local requirements and standards regarding the transportation of hazardous materials. As appropriate, support legislation that strengthens these requirements.

Program S-5.5A: Safe Transport of Hazardous Materials. Support California Highway Patrol's efforts to ensure the safe transport of hazardous materials.

Policy CSI-3.2: Mitigating Development Impacts. Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public health

and safety, fire prevention, and emergency access and response times meet current industry standards.

Program CSI-3.2B: Emergency Response Time. Use the development review process to identify appropriate measures to reduce fire hazards and ensure emergency response capacity that is consistent with National Fire Protection Association standards.

Appendix F of the City's General Plan outlines geotechnical review requirements for development projects and also requires preparation of a preliminary hazardous materials evaluation for development projects located on artificial fill or on land that has been used by businesses. If the preliminary evaluation identifies evidence of hazardous materials, a Hazardous Waste Investigation Report would be required. The hazardous waste investigation should include the following:

- Installation of groundwater and/or vadose zone monitoring wells
- Laboratory analysis of fills, unconsolidated deposits, and water samples and/or gas samples for hazardous waste contamination
- Periodic monitoring of gases and/or water samples
- Preparation of a written report that includes the following as judged necessary by the geotechnical consultant:
  - Chemical analysis results of soil, groundwater, and/or gas samples (Including values for normal or allowable ranges)
  - Boring logs with a description of subsurface materials
  - Subsurface permeability test results
  - Potentiometric map of groundwater in the site vicinity
  - A map showing the concentrations, lateral extent, and thickness of the contamination zone if ground contamination exists
  - A discussion about water supplies that may be affected by contaminated sites
  - Recommended mitigation measures for contaminated sites
  - Suitability assessment of existing or proposed waste dump sites

Municipal Code. The Municipal Code requirements related to hazards and hazardous materials that would be applicable to the project are described below.

Section 14.16.180 of the Municipal Code indicates that new development on lots filled prior to 1974 or on lots that were used for auto service uses, industrial uses, or other land uses that may have involved hazardous materials shall be evaluated for the presence of toxic or hazardous materials prior to development approvals, and the requirements for review are set forth in the geotechnical review matrix in the General Plan.

Local Hazard Mitigation Plan (LHMP). The City adopted an LHMP[39] in 2017 that was prepared to guide hazard mitigation planning to better protect the people and property of San Rafael from the effects of natural disasters and hazard events. The LHMP evaluates changes in growth and development, both past and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability. The LHMP indicates that population projections for San Rafael were 60,800 in 2020, 64,400 in 2030, and 68,700 in 2040. The LHMP identifies three planned development/ redevelopment areas of San Rafael, including the Northgate/Civic Center (which includes the project site). The LHMP indicates that long-range planning efforts call for mixed-use and residential development in the Northgate shopping area. Limited hazards were identified at the project site by the LHMP (e.g., a medium risk of liquefaction in the northern and eastern portions of the project site), and the majority of the project site is identified as having high flame length, rate of spread and population density during an average fire season or under extreme fire conditions, and isolated locations of very high flame length, rate of spread and population density during extreme fire conditions. No critical facilities were identified by the LHMP on or adjacent to the project site. The LHMP presents a mitigation strategy for reducing the City's risk and vulnerability to hazards that comprises LHMP goals and objectives and a mitigation action plan, which includes a series of mitigation action projects and implementation measures. Many of the mitigation actions are applicable to areas of hazards, critical facilities, drainage/flood protection features, and utilities that are not located on the project site. Some mitigation actions are applicable to the whole city (e.g., performing an earthquake study, various drought mitigation actions, traffic signal improvements for first responders, and establishing emergency evacuation shelters).

4.8.2 Impacts and Mitigation Measures

The following describes the potential impacts of the proposed project related to hazards and hazardous materials. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as necessary.

4.8.2.1 Criteria of Significance

Implementation of the proposed project would have a significant impact related to hazards and hazardous materials if it would:

Threshold 4.8.1: Create a substantial hazard to the public or the environment due to the release of hazardous materials into the environment as a result of inherent risks involved in the transport, use, disposal, or management of hazardous or potentially hazardous materials by project-related construction and operation activities;

Threshold 4.8.2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment as a result of failure to comply

[39] City of San Rafael. 2017. San Rafael Local Hazard Mitigation Plan, June. Adopted November 20, 2017.

with applicable federal, State, or local regulations or local regulatory oversight of contaminated properties;

Threshold 4.8.3: Create a public health hazard due to hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

Threshold 4.8.4: Create a significant hazard to the public or the environment as the result of locating the proposed project or related infrastructure on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5;

Threshold 4.8.5: Permit development inconsistent with an adopted Comprehensive Airport Land Use Compatibility Plan and thereby result in a safety hazard or excessive noise for people residing or working in the project area due to aircraft operations; or

Threshold 4.8.6: Impair implementation of the following emergency-related activities:

- Preparedness for an emergency (activities undertaken prior to an emergency in order to improve the City's ability to coordinate, respond, and recover from a critical incident);
- Response to an emergency (actions taken immediately before, during, or directly after a critical incident in order to minimize the potential or existing impacts of the incident);
- Recovery from an emergency (damage assessment, short-term and long-term recovery activities, and administration of recovery assistance programs); or
- Mitigation of the potential for emergencies (actions and measures taken to reduce or eliminate the degree of long-term risk from natural and technological hazards).

Potential impacts related to wildfires, as presented in Appendix G of the *State CEQA Guidelines*, are addressed in Chapter 5.0, Other CEQA Considerations, of this EIR.

4.8.2.2 Project Impacts

The following section provides an evaluation and analysis of the potential impacts of the proposed project for each of the criteria of significance listed above and potential cumulative impacts. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) would not differ by phase and therefore are not differentiated in this section.

Threshold 4.8.1: Routine Transport, Use, Disposal, and Management of Hazardous Materials. Hazardous materials (e.g., fuel, oils, and paints) would be routinely transported, stored, and used at

the project site during construction activities. Because the proposed project would result in soil disturbance greater than 1 acre, management of soil and hazardous materials during construction activities would be subject to the requirements of the Stormwater Construction General Permit (described in detail under Section 4.7, Hydrology and Water Quality, of this EIR), which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes hazardous materials storage requirements. For example, construction site operators must store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

Construction of the proposed project would result in the generation of various waste materials that would require recycling and/or disposal, including some waste materials that could be classified as hazardous waste. Hazardous materials would be transported by a licensed hazardous waste hauler and disposed of at facilities that are permitted to accept such materials as required by the DOT, RCRA, and State regulations.

Operation of the project would involve the routine storage and use of small quantities of commercially available hazardous materials for routine maintenance (e.g., paint and cleaning supplies). In addition, equipment installed at the project site (e.g., hydraulic elevator systems and backup generators) may involve the storage of hydraulic fluid, fuels, and other hazardous materials. The City's Fire Department and Building Division coordinate the review of building permits to ensure that hazardous materials requirements are met prior to construction, including proper hazardous materials storage facilities. If storage of hazardous materials exceeding specific quantities (see Section 4.8.1.4 above) occurs during project operation, the project would be required to comply with existing hazardous materials regulations, including preparation of an HMBP, as enforced by Marin County Public Works. The purpose of the HMBP is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required.

The routine transportation, use, and disposal of hazardous materials during construction and operation may pose health and safety hazards to workers if the hazardous materials are improperly handled, or to the nearby public and the environment if the hazardous materials are accidentally released into the environment. Potential impacts associated with accidental releases of hazardous materials into the environment are discussed under Threshold 4.8.2, below.

Compliance with the regulations described in Section 4.8.1.4 above, including OSHA and Cal/OSHA regulations, the California Fire Code, the California Health and Safety Code Division 20, Chapter 6.5, CCR, DOT, RCRA, and other federal, State, regional, and local regulations, are mandatory and they would ensure that the proposed project would not create a significant hazard to the public or the environment associated with the routine transport, use, or disposal of hazardous materials by ensuring that these materials are properly handled during construction and operation of the proposed project. Therefore, this impact would be **less than significant**.

Threshold 4.8.2: Accidental Release of Hazardous Materials. The public and/or the environment could be affected by the release of hazardous materials from the project site into the environment if: (1) hazardous building materials (e.g., lead paint, asbestos, and PCBs) were disturbed and released into the environment during the demolition of existing structures; (2) leakage, spills, or

improper disposal of hazardous materials would occur during construction or operation of the project; or (3) the project would expose construction workers, the public, future users of the project site (which include sensitive residential land uses), or the environment to potentially contaminated soil, groundwater, or soil vapor during construction or operation of the project.

Hazardous Building Materials. Asbestos is a known human carcinogen that was commonly used in building materials until the early 1980s. Asbestos-containing products remain in use within the United States and include some roof and non-roof coatings and other asbestos-containing building materials.[40] Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. BAAQMD Regulation 11-2 requires that prior to commencement of any demolition or renovation, the owner or operator must thoroughly survey the affected structure or portion thereof for the presence of ACMs. The survey must be performed by a person who is certified by the Division of Occupational Safety and Health, who has taken and passed an EPA-approved Building Inspector course, and who conforms to the procedures outlined in the course. The survey must include sampling and the reporting of results of laboratory analysis of the asbestos content of all suspected ACMs. This survey must be made available, upon request by the Air Pollution Control Officer, prior to the commencement of any regulated ACM removal or any demolition. If ACMs are identified, the disturbance/ removal and management of ACMs must be performed in accordance with BAAQMD Regulations under Rule 11-2 to ensure that asbestos would not be released into the environment.

Prior to 1978, lead compounds were commonly used in exterior and interior paints. Due to its health effects, the application of lead-based paint on residential structures was banned in 1978; however, lead-based paint can be found in commercial or industrial structures, regardless of construction date (because its use is still allowed in commercial and industrial applications).[41]

Lead paint has been identified on structures at the project site as discussed under Section 4.8.1.2 above. The stabilization and/or removal of lead paint prior to demolition or renovation of structures would be required in accordance with applicable laws and regulations, including but not limited to: California OSHA's Construction Lead Standard, Title 8 CCR Section 1532.1, and Department of Health Services regulation 17 CCR Sections 35001 through 36100, as may be amended.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury, a heavy metal) are regulated as "universal wastes" by the State of California and may be present on the project site. Universal waste

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40 United States Environmental Protection Agency (EPA). 2017. Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal: Asbestos, February. Website: https://www.epa.gov/sites/ production/files/2017-02/documents/asbestos.pdf (accessed April 6, 2023).

41 Department of Toxic Substances Control (DTSC). 2006. Interim Guidance Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers. June 9 (Revised).

regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

Compliance with existing regulations would ensure that hazardous buildings materials including ACMs, lead paint, and universal wastes would be identified through a comprehensive hazardous building materials survey and removed/stabilized as necessary prior to building demolition or renovation activities.

PCBs were historically used as coolants and lubricants in transformers, capacitors, heating/cooling equipment, and other electrical equipment, and were also used as plasticizers in paints, plastics, rubber products, and caulking. PCBs have been demonstrated to cause cancer and a variety of other adverse health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. Although manufacturing of PCBs has been banned in the United States since 1979, they may still be found in older electrical equipment and other building materials such as light ballasts and caulking. PCBs or PCB-contaminated items require proper off-site transport and disposal at a facility that can accept such wastes, in accordance with the TSCA and other federal and State regulations. PCBs in manufactured materials such as caulking may also move directly into adjoining materials, particularly porous materials such as wood, concrete, and other types of masonry.[42] As discussed under Section 4.8.1 above, a release of transformer oil occurred at the project site in 1997, and the oil was reportedly contained in a concrete vault; however, it is not known whether the leaked oil contained PCBs. Therefore, PCB-contaminated concrete could be present in this vault.

The EPA has indicated there was potential widespread use of PCB-containing building materials in buildings built or renovated between about 1950 and 1979. Prior to removal, the EPA recommends PCB testing of caulking and other building materials that are going to be removed to determine what protections are needed during removal and to determine proper disposal requirements.[43]

Electrical and lighting equipment that may contain hazardous materials (e.g., mercury and PCBs) can be readily identified and therefore would be appropriately managed/disposed of in accordance with applicable regulations including TSCA, DTSC hazardous waste rules, and other federal and State regulations; however, PCB-containing building materials such as caulks/sealants, rubber window seals/gaskets, specialized paints, mastics, and other adhesives cannot be readily identified and require testing to evaluate whether these materials contain PCBs. Old hydraulic oil can also contain PCBs and, as discussed under Section 4.8.1 above, PCBs have been

42 United States Environmental Protection Agency (EPA). 2015a. PCBs in Building Materials – Questions & Answers, July 28. Website: https://www.epa.gov/sites/production/files/2016-03/documents/pcbs_in_building_materials_questions_and_answers.pdf (accessed April 6, 2023).

43 United States Environmental Protection Agency (EPA). 2015b. Practical Actions for Reducing Exposure to PCBs in Schools and Other Buildings, Guidance for school administrators and other building owners and managers. July 28. Website: https://www.epa.gov/sites/production/files/2016-03/documents/practical_actions_for_reducing_exposure_to_pcbs_in_schools_and_other_buildings.pdf (accessed April 6, 2023).

detected in soil near the former hydraulic lifts of the former Sears Auto Center, and staining and spilled liquids have been observed on the floors of multiple hydraulic elevator equipment rooms located at the former Sears Department Store and Auto Center buildings. Therefore, PCB-contaminated concrete could be present near hydraulic lifts and elevator equipment at the project site.

There are no existing regulations that require testing to identify PCBs in building materials prior to demolition or renovation activities in San Rafael. If testing for PCBs in building materials is not performed prior to demolition or renovation activities, the improper handling of potential PCB-containing materials could result in the release of PCBs into the environment. This would be a **potentially significant** impact.

Impact HAZ-1 Demolition or renovation activities may result in the release of PCBs into the environment. (S)

In order to control the risk of releasing PCBs into the environment from demolition or renovation activities, the Mitigation Measure HAZ-1 shall be implemented.

Mitigation Measure HAZ-1 **Hazardous Building Materials Survey.** Prior to issuance of demolition or renovation permits for existing structures, the project sponsor shall perform a comprehensive Hazardous Building Materials Survey (HBMS) for the structures to be affected, which shall be prepared and signed by a qualified environmental professional, documenting the presence or lack thereof of polychlorinated biphenyls (PCBs) containing equipment and materials, and any other hazardous building materials. The testing for PCBs shall include, but not be limited to, sampling of hydraulic oil in elevator equipment at the former Sears facilities, and sampling of stained concrete near existing and former hydraulic elevator and lift equipment at the former Sears facilities. The location of the vault that contained the transformer oil leak in 1997 shall be identified through coordination with representatives of the project site, research of building plans, and/or by requesting such information from the Pacific Gas and Electric Company (PG&E); sampling of concrete for PCBS shall be performed in this vault. If the location of the transformer that leaked oil in 1997 cannot be identified, PCB sampling shall be performed at all concrete vaults that could potentially have been affected by a transformer oil release. The HBMS shall include abatement specifications for the stabilization and/or removal of the identified hazardous building materials in accordance with all applicable laws and regulations. The project sponsor shall implement the abatement specifications and shall submit to the City evidence of completion of abatement activities prior to demolition or renovation of the existing structures. (LTS)

Compliance with the existing hazardous building materials regulations and implementation of Mitigation Measure HAZ-1 would ensure that hazardous building materials are identified and appropriately managed prior to demolition or renovation activities, and the risk of hazardous building materials being released into the environment during construction of the project would be reduced to **less than significant with mitigation**.

Spills, Leaks, or Improper Disposal of Hazardous Materials. An accidental release of hazardous materials (e.g., oils, fuels, solvents, paints, or contaminated soil) during project construction could result in exposure of construction workers, the public, and/or the environment to hazardous materials. As discussed above, the proposed project would be subject to the requirements of the Construction General Permit, which requires preparation and implementation of a SWPPP to reduce the risk of spills or leaks from reaching the environment, including procedures to address minor spills of hazardous materials. Measures to control spills, leakage, and dumping must be addressed through structural as well as non-structural Best Management Practices (BMPs), as required by the Construction General Permit. For example, equipment and materials for cleanup of spills must be available on site, and spills and leaks must be cleaned up immediately and disposed of properly. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage.

As discussed above, the transportation of hazardous materials is subject to both RCRA and DOT regulations. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill), and is responsible for the discharge cleanup.

Operation of the project would involve the routine storage and use of small quantities of commercially available hazardous materials for routine maintenance (e.g., paint and cleaning supplies) and project residents may generate household hazardous wastes (HHW) (e.g., batteries, cosmetics, and cleaning products). HHW generated in San Rafael can be disposed of at the Marin HHW Facility, which is located in San Rafael, either by dropping it off or arranging for pick-up. If larger quantities of hazardous materials would be stored on the site, mandatory compliance with existing hazardous materials regulations including the California Fire Code and Health and Safety Code, as enforced by the City's Fire Department and Marin County's CUPA Programs, would require hazardous materials to be properly stored, labeled, and disposed of, and requires training and planning to ensure appropriate responses to spills and emergencies.

Compliance with existing regulations regarding the management of hazardous materials, as discussed above and under Threshold 4.8.1, would ensure that potential impacts related to spills, leaks, or improper disposal of hazardous materials that would be routinely handled during construction and operation of the project would be **less than significant**.

Soil, Groundwater, and Soil Vapor Contamination. As discussed under Section 4.8.1 above, the 2021 Phase I ESA identified subsurface contamination at the project site including concentrations of PCE in soil vapor and PCBs in soil beneath the former Sears Auto Center that exceeded ESLs, and petroleum hydrocarbon contamination in soil and groundwater at the

elevators of the former Sears Department Store. The 2021 Phase I ESA recommended that these environmental concerns be further investigated during redevelopment after existing buildings are demolished.[44]

The source and extent of the PCE in soil vapor beneath the Sears Auto Center has not been identified. In addition, soil vapor laboratory reporting limits for PCE and other VOCs were above the current residential and commercial ESLs for soil vapor; therefore, undetected contamination from VOCs could be present in soil vapor at the former Sears Auto Center. Unidentified contamination from PCBs could also be present in soil and groundwater in areas of the 1997 transformer oil leak, hydraulic elevators, and hydraulic lifts because testing for PCBs has not been performed near many of these features.

The disturbance of contaminated soil or groundwater during construction activities could result in impacts to construction workers, the public, and the environment as dust or vapors containing hazardous materials can be released into the environment, movement of contaminated soil can spread contamination to new areas, and construction of landscaping (and in particular stormwater treatment/infiltration features) over areas of contaminated soil or groundwater could increase the leaching of contaminants from soil into groundwater or the migration of contaminated groundwater. Construction of buildings and utilities in areas with elevated VOCs in soil vapor could create health hazards for future occupants of the project site due to vapor intrusion of VOCs to indoor air. Therefore, the potential release of subsurface hazardous materials into the environment during construction and operation of the project would be a **potentially significant** impact.

The 2021 Phase I ESA recommended that environmental concerns at the project site be further investigated during redevelopment after existing buildings are demolished;[45] however, demolition of buildings could result in the disturbance of potentially contaminated soil and can make it difficult to locate areas of previously identified contamination or features of environmental concern. Demolition can also make it difficult to identify potential source areas of contamination in soil beneath buildings, as the demolition activities can result in disturbance of the soil surface that can cover or spread out areas of soil staining creating a potentially significant impact.

Impact HAZ-2 Subsurface hazardous materials may be released into the environment during construction and operation of the project. (S)

The City's General Plan includes Policy S-5.4: Development on Formerly Contaminated Sites to ensure that the necessary steps are taken to clean up residual hazardous materials on any contaminated sites proposed for redevelopment or reuse. The City's General Plan includes Programs S-5.4A: Use of Environmental Databases in Development Review, S-5.4B: Hazardous Soils Clean-Up, S-5.4C: Environmental Site Management Plan (ESMP), and S-5.4D: Soil Vapor Intrusion Assessment, which require working with appropriate agencies to require remediation

[44] Roux Associates, Inc. 2021. *Phase I Environmental Site Assessment (ESA), Northgate Mall, 5800 Northgate Drive, San Rafael, California*. November 8.

[45] Ibid.

and clean-up prior to development of sites where hazardous materials have impacted soil or groundwater. For sites with the potential for significant vapor intrusion into buildings, project design must include vapor controls or source removal as appropriate in accordance with regulatory agency requirements.

To reduce the potential impact and control the risk of releasing hazardous materials into the environment during construction and operation, the project shall implement Mitigation Measure HAZ-2.

Mitigation Measure HAZ-2

Soil and Groundwater Management Plan. The project sponsor shall engage with the appropriate regulatory agency (e.g., the San Francisco Bay Regional Water Quality Control Board [RWQCB] or Department of Toxic Substances Control [DTSC]) to provide oversight of additional subsurface investigation at the project site, preparation and implementation of a Soil and Groundwater Management Plan (SGMP), and the implementation of remedial actions, as necessary, at the project site. The additional subsurface investigation activities shall include additional investigation of potential contamination source areas to define the extent of subsurface contamination at the project site. The additional subsurface investigation activities shall include analysis of PCBs in soil and groundwater near areas of former and existing hydraulic elevators and lifts and the transformer that leaked oil in 1997. The SGMP shall outline soil and groundwater management protocols that would be implemented during redevelopment of the project site to ensure that construction workers, the public, future occupants, and the environment would not be exposed to hazardous materials that may be present in the subsurface of the project site. The SGMP shall include, at a minimum, the following procedures to be implemented during construction:

- Health and safety requirements for construction workers that may handle contaminated soil or groundwater;
- Guidelines for controlling airborne dust, vapors, and odors;
- Air monitoring requirements for volatile organic compounds (VOCs) during construction;
- Regulatory notification requirements if undocumented contamination or features of environmental concern (e.g., underground storage tanks [USTs] or clarifiers/sumps/vaults and associated piping) are encountered;
- Inspection and sampling protocols for contaminated soil or groundwater by a qualified environmental professional;

- Guidelines for groundwater dewatering, treatment, and disposal to ensure compliance with applicable regulations/ permit requirements; and
- Guidelines for the segregation of contaminated soil, stockpile management, characterization of soil for off-site disposal or on-site re-use, and importing of clean fill material.

The report(s) documenting additional investigation activities and the SGMP shall be submitted to the regulatory oversight agency for review and approval prior to the City issuing demolition or grading permits for the project. Remedial actions that may be required for the project could include, but would not necessarily be limited to, removal of hazardous materials containers/features (e.g., USTs, piping, clarifiers/sumps/vaults), removal and off-site disposal of contaminated soil or groundwater, in-situ treatment of contaminated soil or groundwater, or engineering/institutional controls (e.g., installation of vapor intrusion mitigation systems and establishing deed restrictions).

If remedial actions are required for the project, the project sponsor shall submit to the City evidence of approvals from the regulatory oversight agency for any proposed remedial action plans prior to the City issuing demolition, grading, or building permits that would be required for the remedial action. The project sponsor shall document the implementation of the SGMP during construction and the completion of remedial actions. The project sponsor shall submit to the City evidence of approval from the regulatory oversight agency for the implementation of the SGMP and completion of any remedial actions prior to the City issuing a certificate of occupancy for the project site. (LTS)

Implementation of Mitigation Measure HAZ-2 would ensure that subsurface contamination on the project site would be properly investigated and remediated, and the risk of subsurface hazardous materials being released into the environment during construction and operation of the project would be **less than significant with mitigation**.

Threshold 4.8.3: Hazardous Emissions within 0.25 Mile of Schools. Vallecito Elementary School is located at 50 Nova Albion Way and is just under 0.25 mile west of the northwest corner of the project site. No other schools were identified within 0.25 mile of the project site.[46] Compliance with the existing hazardous materials regulation described under Section 4.8.1.4 above (e.g., Marin County's CUPA Programs, OSHA and Cal/OSHA regulations, the California Fire Code, the California Health and Safety Code, CCR, DOT, RCRA, BAAQMD, and other federal, State, regional, and local

[46] California Department of Education. 2023. California Schools Directory. Website: https://www.cde.ca.gov/schooldirectory (accessed April 4, 2023).

regulations) and implementation of Mitigation Measures HAZ-1 and HAZ-2 would ensure that potential impacts related to hazardous emissions within 0.25 mile of schools as a result of the project would be **less than significant**.

Threshold 4.8.4: Government Code Section 65962.5. The project site is not included on the lists of hazardous materials release sites compiled pursuant to Government Code Section 65962.5.[47] Although the project site did have USTs near the former Sears Auto Center, and some petroleum hydrocarbon contamination has been identified in the areas of the former USTs, the project site has not been designated as a LUST site by the SWRCB. If a petroleum hydrocarbon release from former or potential existing USTs is identified during future investigation or construction activities at the project site, the project site could be designated as a LUST site in the future. Implementation of Mitigation Measure HAZ-2 would ensure that if the project site becomes a LUST site and listed pursuant to Government Code Section 65962.5, investigation and remediation of the project site would be performed under regulatory agency oversight, which would ensure that potential impacts related to subsurface contamination would be **less than significant**.

Threshold 4.8.5: Aviation Hazards. As discussed under Section 4.8.1.3 above, the nearest airport to the project site is the San Rafael Airport, a small private airport located approximately 1 mile northeast of the project site that does not have a land use plan. The nearest public airport to the project site is the Marin County Airport at Gnoss Field in Novato, approximately 9 miles to the north. The project site is not located within the land use plan area for the Marin County Airport at Gnoss Field and is not located within 2 miles of a public airport or public use airport. Given the distances from the project site to the nearest public or public use airports, the project would not be subject to any airport safety hazards and would not have an adverse effect on aviation safety or flight patterns. Noise levels at San Rafael Airport are below the State threshold of 65 decibels (dB) Community Noise Equivalent Level (CNEL) and are expected to remain below this level in the future;[48] therefore, people residing or working at the project site would not be exposed to excessive aircraft noise. Therefore, the proposed project would have **no impact** related to aviation hazards.

Threshold 4.8.6: Emergency-Related Activities. Potential impacts related to emergency preparedness, emergency response, emergency recovery, and emergency mitigation are discussed below.

> ***Preparedness for an Emergency.*** The Marin County Sheriff's OES has developed an EOP[49] that includes emergency operations for San Rafael, which is regularly updated. The EOP provides procedures and establishes policies for managing any disaster and provides directions on evacuating San Rafael, and emergency communications and field responses, among other items. The City has developed an LHMP[50] that includes a mitigation strategy for reducing the city's risk and vulnerability to hazards, and accounts for projected population growth within San Rafael,

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47 California Environmental Protection Agency (CalEPA). 2023. Cortese List Data Resources. Website: https://calepa.ca.gov/sitecleanup/corteselist/ (accessed April 12, 2023).

48 City of San Rafael. 2021. *San Rafael General Plan 2040*, adopted August 2.

49 Marin County Sheriff's Office of Emergency Services (OES). 2014. Marin Operational Area Emergency Operations Plan. October.

50 City of San Rafael. 2017. *San Rafael Local Hazard Mitigation Plan*. Adopted November 20, 2017.

including development/redevelopment of the Northgate/Civic Center area, which includes the project site. Implementation of the City of San Rafael General Plan Program S-1.1C would ensure that the LHMP is periodically updated and therefore would account for the project. The proposed project would not conflict with the EOP or LHMP, and it would not interfere with the Marin County Sherriff's or the City's ability to maintain or update the EOP or LHMP or other emergency preparedness activities. Therefore, this impact would be **less than significant**.

Response to an Emergency. As described under Section 4.8.1.4 above, there are multiple emergency response-related plans that apply to San Rafael, including the City's LHMP, and the Marin County ERP,[51] EOP, and MCM LHMP.[52] Development of the project would result in an increase in population within San Rafael that could result in a corresponding increase in the demand for emergency response resources and services; however, the development of the project would not impair or interfere with implementation of the established emergency response-related plans discussed above. The City's General Plan contains many policies and programs related to local planning and development decisions to ensure compliance with existing emergency response and evacuation plans, and the projected population for the proposed project was accounted for in General Plan buildout assumptions. Implementation of the City's General Plan policies and programs would ensure that the City maintains an effective emergency response program that accounts for development of the project.

Furthermore, as discussed in Section 4.9, Transportation, the proposed project would provide adequate emergency access to and through the project site, and the proposed project would result in an overall reduction in traffic on the surrounding roadway network over the course of the day and during the critical p.m. peak-hour period. Therefore, neither phase of the proposed project would result in adverse impacts on emergency response times within the vicinity of the project site.

Construction of the project could require temporary closure of traffic lanes on roadways adjacent to the project site during construction activities (e.g., for utility connections). This could impede the implementation of emergency response and evacuation plans; however, any construction activities that would result in temporary roadway closures would be required to obtain traffic permits from the City and prepare a traffic control plan, which would maintain emergency response and evacuation access through appropriate traffic control measures and detours. Therefore, this impact would be **less than significant**.

Recovery from an Emergency. Recovery from an emergency can include safety/damage assessments, short-term and long-term recovery activities, and administration of recovery assistance programs. As with any development in San Rafael, the proposed project would create new structures and improvements that could require safety/damage assessments after an emergency, and could therefore result in an incremental increase in the City's time frame for completion of safety/damage assessments. The proposed project would not interfere with or

[51] Marin County Sheriff's Office of Emergency Services (OES). 2012. Marin County Operational Area Emergency Recovery Plan (ERP). November.

[52] Marin County Sheriff's Office of Emergency Services (OES). 2018. Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP).

impair implementation of recovery from an emergency, and therefore the proposed project would result in **less than significant** impacts related to recovery from an emergency.

Mitigation of Potential for Emergencies. The mitigation of emergencies includes actions and measures taken to reduce or eliminate the degree of long-term risk from natural and technological hazards. The City's LHMP and the MCM LHMP contain detailed hazard assessments and potential mitigation strategies. The mitigation strategies identified in the City's LHMP and the MCM LHMP do not include any actions that are specific to the project site, and the project would not interfere with implementation of the more general city-wide or county-wide actions identified in these plans. Therefore, the proposed project would not interfere with or impair implementation of mitigation strategies identified in the City's LHMP or the MCM LHMP. Therefore, the proposed project would result in **less than significant** impacts related to mitigation of the potential for emergencies.

4.8.2.3 Cumulative Impacts

This section evaluates cumulative impacts related to hazards and hazardous materials. This cumulative analysis examines the effects of the project in the relevant geographic area in combination with buildout of the General Plan. Cumulative impacts are addressed only for those thresholds that would result in a project-related impact, whether it be less than significant or less than significant with mitigation. If the project would result in no impact with respect to a particular threshold (e.g., aviation), it would not contribute to a cumulative impact; therefore, no further discussion of cumulative effects related to these topics is required.

Occurrence of a cumulative effect related to hazardous materials would require that multiple projects release hazardous materials at the same time near each other; therefore, the geographic area of concern for cumulative hazardous materials-related impacts is the project site and nearby areas. However, there are no current or probable future projects under City review within the vicinity of the project site. The project and cumulative projects assumed under General Plan buildout would involve the routine use of hazardous materials during construction and operation. Required compliance with existing hazardous materials regulations including OSHA and Cal/OSHA regulations, the California Fire Code, the California Health and Safety Code, CCR, DOT, RCRA, and other federal, State, regional, and local regulations, would ensure that the project and cumulative projects would not create a significant hazard to the public or the environment associated with the routine transport, use, or disposal of hazardous materials or accidental spills, leaks, or improper disposal of hazardous material by ensuring that these materials are properly handled during construction and operation. The project and cumulative projects would involve demolition and renovation activities that could release hazardous building materials into the environment. Compliance with existing hazardous building materials regulations and implementation of Mitigation Measure HAZ-1 would ensure that hazardous building materials on the project site are identified and appropriately managed prior to demolition or renovation activities. The project site has known and potential unidentified subsurface contamination from hazardous materials, and cumulative projects occurring under General Plan buildout may also have subsurface contamination from hazardous materials. Implementation of Mitigation Measure HAZ-2 would ensure that subsurface contamination on the project site would be properly investigated and remediated. Therefore, the project would not result in cumulatively considerable impacts related to the routine transport, use,

or disposal of hazardous materials or accidental release of hazardous materials into the environment, including hazardous emissions near schools, and the project's contribution to any cumulative impact would be **less than significant**.

Cumulative impacts to emergency response/evacuation can occur when an increase in vehicle traffic occurs in an area with limited vehicular access; therefore, the geographic area of concern for cumulative emergency response/evacuation impacts is the roadway network surrounding the project site. However, as discussed above and in Section 4.9, Transportation, the proposed project would result in a reduction in traffic on the surrounding roadway network. Therefore, although the proposed project and cumulative projects would result in an increase in population within San Rafael and within the immediate project area, resulting in an incremental increase in the demand for emergency response resources and services, the project would not impair or interfere with implementation of established emergency response-related plans because there would continue to be adequate roadway capacity to accommodate emergency evacuation. Furthermore, implementation of the City's General Plan policies and programs would ensure that the City maintains an effective emergency response program that accounts for development of the project and cumulative projects. The project and cumulative projects could require temporary closure of traffic lanes during construction activities (e.g., for utility work). This could temporarily impede the implementation of emergency response and evacuation activities; however, any construction activities that would result in temporary roadway closures would be required to obtain traffic permits from the City and prepare a traffic control plan that would maintain emergency response and evacuation access through appropriate traffic control measures and detours. Based on the above considerations, adequate emergency response and evacuation capabilities would be maintained at the project site, and cumulative projects and potential impacts of the project related to impairing or interfering with the emergency response or evacuation plans would not be cumulatively considerable and this cumulative impact would be **less than significant**.

4.9 TRANSPORTATION

This section discusses the results of the Transportation Impact Study (TIS)[1] conducted for the proposed project and included in Appendix F. Specifically, this section describes existing and future transportation and circulation within the study area, the analysis methodology and regulatory framework, and identifies potential transportation-related impacts of the proposed project and mitigation measures for identified significant impacts. Topics evaluated in the analysis include an assessment of daily vehicle miles traveled (VMT), site access and circulation, driveway site distance and vehicle queuing, and hazards and emergency vehicle access. Additionally, for informational purposes, this chapter includes an assessment of vehicle level of service (LOS).

Up until July 1, 2020, roadway congestion or LOS was used as the primary metric for planning and environmental review purposes in San Rafael and throughout the State. However, Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to establish a new metric for identifying and mitigating transportation impacts under the California Environmental Quality Act (CEQA) in an effort to meet the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. CEQA Section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts pursuant to CEQA Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. OPR identified VMT as the required CEQA transportation metric for determining potentially significant environmental impacts.[2] In December 2018, the California Natural Resources Agency certified and adopted the *State CEQA Guidelines* update package, including the section implementing SB 743 (*State CEQA Guidelines* Section 15064.3). OPR developed the Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains the OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[3] As of July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

In accordance with SB 743, for purposes of determining potentially significant environmental impacts related to transportation, this Environmental Impact Report (EIR) focuses only on VMT as the threshold of significance. However, because LOS is still used for local planning purposes per Policy M-2.5 in the City of San Rafael General Plan,[4] that information is summarized in Section 4.9.3, Non-CEQA Analysis.

The information in this section is based on the TIS, the Signal Warrant Analysis,[5] and the identification of mitigation to reduce identified impacts, if any, according to established thresholds.

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1 W-Trans. 2023. *Transportation Impact Study for the Northgate Town Square Project*. February 14.

2 Governor's Office of Planning and Research (OPR). 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg 2013)*. January 20.

3 Governor's Office of Planning and Research (OPR). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* December. Website: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed February 7, 2019).

4 City of San Rafael. 2021. *San Rafael General Plan 2040.* August.

5 Parametrix. 2023. *Signal Warrant Analysis Results for the Northgate Town Square Project*. October 3.

The analyses were conducted in accordance with the current standards and methodologies required by law and set forth by the City of San Rafael (City).

4.9.1 Setting

This section describes the existing transportation conditions, including the roadway network, bicycle facilities, pedestrian facilities, and transit service within the study area. The applicable regulatory framework is also described.

4.9.1.1 Existing Transportation and Circulation System

Roadway Network. State highways, arterials, major collectors, and local streets run throughout the project area. Regional access to the project site is provided via United States Route 101 (US-101). Descriptions of the intersections within the vicinity of the project site are provided below.

- **Manuel T. Freitas Parkway/Las Gallinas Avenue** is a signalized four-legged intersection with protected left-turn phasing on the eastbound and westbound approach and permitted left-turn phasing on the northbound and southbound approaches. There is a stop-controlled channelized right-turn lane on the westbound approach. Pedestrian crosswalks and phasing exist on the north, west, and south legs, and there are bicycle lanes on all four legs.

- **Manuel T. Freitas Parkway/Northgate Drive** is a four-legged signalized intersection with protected left-turn phasing on the Manuel T. Freitas Parkway approaches and permitted left-turn phasing on the Northgate Drive approaches. There are crosswalks on all but the east leg.

- **Manuel T. Freitas Parkway/Del Presidio Boulevard** is a signalized intersection with four legs. The northbound and southbound approaches have permitted left-turn phasing, but left turns from Manuel T. Freitas Parkway are prohibited. The north leg of the intersection is the off-ramp from southbound US-101 and includes a channelized right-turn lane. There are crosswalks with pedestrian phasing on the south and east legs.

- **Manuel T. Freitas Parkway/US-101 South Ramps** includes two slip ramps from Manuel T. Freitas Parkway in each direction to US-101 South. There is a crosswalk across the ramp from the westbound Manuel T. Freitas Parkway.

- **Redwood Highway/US-101 North On-Ramp** is a tee intersection enabling access to US-101 North from Redwood Highway in both directions. There is a sidewalk on the east side of Redwood Highway.

- **Manuel T. Freitas Parkway/US-101 North Ramps** is a tee intersection directly adjacent to Manuel T. Freitas Parkway/Redwood Highway-Civic Center Drive with a sidewalk along the northeast corner. There are channelized right-turn lanes for movements to and from the connector to Civic Center Drive.

- **Manuel T. Freitas Parkway/Redwood Highway-Civic Center Drive** is an intersection with three approaches and four departures, as the east leg is eastbound only. The Redwood Highway and Civic Center Drive approaches are stop controlled, whereas the Manuel T. Freitas Parkway

approach is uncontrolled. There are sidewalks on the northeast, northwest, and southeast corners, and a crosswalk on the north leg. Bicycle lanes are on Civic Center Drive south of the intersection.

- **Las Gallinas Avenue/Nova Albion Way** is a signalized intersection with four legs, a protected northbound left-turn phase, split phasing on the eastbound and westbound approaches, and a southbound right-turn overlap. Crosswalks and pedestrian signals exist on all four legs, and there are bicycle lanes on Las Gallinas Avenue.

- **Las Gallinas Avenue/Northgate Drive** is a four-legged intersection controlled by a traffic signal with protected left-turn phasing on Northgate Drive and permissive phasing on Las Gallinas Avenue. There are crosswalks and pedestrian signals on all four legs, and bicycle route pavement markings on Las Gallinas Avenue west of the intersection.

- **Las Gallinas Avenue/Del Presidio Boulevard** is a signalized intersection with protected left-turn phasing in the eastbound direction, and a right-turn overlap in the westbound direction. The south leg is southbound only and left turns are prohibited on westbound Las Gallinas Avenue. Crosswalks and pedestrian signals exist across all but the east leg, and a multi-use trail runs along the south side of Las Gallinas Avenue in addition to a bicycle lane on the southbound departure on Del Presidio Boulevard.

- **Las Gallinas Avenue/Merrydale Road** is a four-legged signalized intersection with protected left-turn phasing in all directions and crosswalks with pedestrian signals on the west, north, and east legs. There is a multi-use trail on the west side of Las Gallinas Avenue in addition to bicycle lanes on Las Gallinas Avenue south of the intersection and Merrydale Road west of the intersection.

- **Merrydale Road/Civic Center Drive** is a signalized intersection with four legs and protected left-turn phasing in all four directions. Crosswalks and pedestrian signals exist on the north and east legs, as do bicycle lanes on the north, west, and south legs.

- **Northgate Drive/Thorndale Drive** is a four-legged intersection with stop controls on the eastbound and westbound approaches, and no controls on Northgate Drive. There is a crosswalk on the west leg and bicycle lanes on Northgate Drive.

- **Northgate Drive/El Faisan Drive** is a tee intersection with stop control on El Faisan Drive and bicycle lanes on Northgate Drive.

- **Northgate Drive/Nova Albion Way** has three legs and stop control on the Nova Albion Way approach with no controls on the Northgate Drive approaches. Crosswalks exist on the west and south legs, and there are bicycle lanes on Northgate Drive.

- **Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive** is a four-legged signalized intersection with protected left-turn phasing on the northbound approach and permissive phasing for all other movements. The east leg is a driveway to the Mt. Olivet Cemetery. There

are crosswalks and pedestrian signals on the east and south legs, and bicycle lanes on the west and north legs.

- **Los Ranchitos Road/North San Pedro Road** is an intersection with three legs and signal control, including a protected phase for the eastbound left-turn movement. Crosswalks and pedestrian signals exist on the north and west legs, and there are bicycle lanes on Los Ranchitos Road, including high-visibility markings in the westbound direction.

Pedestrian Facilities. Pedestrian facilities include sidewalks, pedestrian signal phases, curb ramps, curb extension, and various streetscape amenities such as lighting and benches. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site.

There are no sidewalks on Merrydale Road between the Merrydale Road overpass over US-101 and the Marin Civic Center SMART station. Currently, pedestrians traveling between the project site and the station must either cross over the freeway to access the sidewalk along Civic Center Drive or walk in traffic along Merrydale Road. A multi-use trail to close this gap is included in the City's Bicycle and Pedestrian Master Plan.[6] The City prepared the Merrydale Conceptual Design Informational Report in April 2022 to address the potential alternative designs, which generally include a 12-foot-wide shared-use trail along the north and east sides of Merrydale Road between Las Gallinas Avenue and the Sonoma-Marin Area Rail Transit (SMART) station.

Bicycle Facilities. Bikeways in the City are classified into the following four categories:

- **Class I Bikeways** (Bike Path) provide a completely separate right-of-way, are designated for the exclusive use of bicycles and pedestrians, and minimize vehicle and pedestrian cross-flow. In general, bike paths serve corridors that are not served by existing streets and highways, or where sufficient right-of-way exists for such facilities to be constructed.

- **Class II Bikeways** (Bicycle Lanes) are lanes for bicyclists generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are generally 5 feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted. Note that when grade separation or buffers are constructed between the bicycle and vehicle lanes, these facilities are classified as Class IV Bikeways.

- **Class III Bikeways** (Bicycle Routes/Bicycle Boulevards) are designated by signs or pavement markings for shared use with pedestrians or motor vehicles but have no separated bicycle right-of-way or lane striping. Bicycle routes serve either to (a) provide continuity to other bicycle facilities, or (b) designate preferred routes through high-demand corridors. Bicycle routes are implemented on low-speed (less than 25 miles per hour [mph]) and low-volume (fewer than 3,000 vehicles per day) streets.

- **Class IV Bikeways**, also known as "cycle tracks" or "protected bike lanes," provide a right-of-way designated exclusively for bicycle travel within a roadway and which are protected from other

[6] City of San Rafael. 2011. Bicycle/Pedestrian Master Plan Update. April 4.

vehicle traffic with devices, including but not limited to grade separation, flexible posts, inflexible physical barriers, or parked cars.

In the vicinity of the project site there are Class I Bike Paths parallel to Las Gallinas Avenue, McInnis Parkway, and the SMART railroad tracks. There are Class II Bicycle Lanes on Manuel T. Freitas Parkway, Las Gallinas Avenue, Civic Center Drive, Northgate Drive, Merrydale Road, and Los Ranchitos Road. Bicycles ride on the roadways and/or on sidewalks along all other streets within the project study area. Table 4.9.A summarizes the existing and planned bicycle facilities in the project vicinity.

Table 4.9.A: Existing and Planned Bicycle Facilities Summary

Facility	Class	Length (miles)	Begin Point	End Point
Existing Facilities				
Las Gallinas Avenue	I	0.42	Northgate Drive (N)	425 feet north of Northgate Drive (S)
McInnis Parkway Side Path	I	0.68	North End	Civic Center Drive
SMART Pathway	I	0.86	Civic Center Drive	N San Pedro Road
Manuel T. Freitas Parkway	II	0.76	Montecillo Road	Las Gallinas Avenue
Las Gallinas Avenue	II	1.34	City Limit	Nova Albion Way
Civic Center Drive	II	0.52	Manuel T. Freitas Parkway	Peter Behr Drive (N)
Northgate Drive	II	0.54	Las Gallinas Avenue	Las Gallinas Avenue
Las Gallinas Avenue	II	0.18	Merrydale Road	Northgate Drive (S)
Merrydale Road	II	0.13	Las Gallinas Avenue	Civic Center Drive
Los Ranchitos Road	II	1.21	Golden Hinde Boulevard	Hammondale Court
Los Gamos Road	III	0.39	North End	Manuel T. Freitas Parkway
Las Gallinas Avenue	III	0.20	Nova Albion Way	Northgate Drive
Nova Albion Way	III	1.12	Las Gallinas Avenue	Northgate Drive
Golden Hinde Boulevard	III	0.48	Nova Albion Way	Los Ranchitos Road
Redwood Highway	III	1.16	Smith Ranch Road	Manuel T. Freitas Parkway
Civic Center Drive		0.17	SMART Crossing	Peter Behr Drive (N)
Planned Facilities				
Manuel T. Freitas Parkway	I	0.72	Montecillo Road	Del Presidio Boulevard
Nova Albion Way	I	0.26	155 feet south of Arias Street	Montecillo Road
Redwood Highway	I	0.25	Professional Center Parkway	Manuel T. Freitas Parkway
Merrydale Road	I	0.34	Las Gallinas Avenue	SMART Pathway
Manuel T. Freitas Parkway	II	0.23	Las Gallinas Avenue	Northgate Drive
Las Gallinas Avenue	II	0.53	Northgate Drive (N)	Golden Hinde Boulevard
Northgate Drive	II	0.05	Las Gallinas Avenue (N)	270 feet south of Las Gallinas Avenue (N)
Las Gallinas Avenue	IV	0.32	Manuel T. Freitas Parkway	Northgate Drive
Nova Albion Way	IV	0.03	Las Gallinas Avenue	155 feet south of Arias Street
N San Pedro Road	IV	0.57	Civic Center Drive	Los Ranchitos Road

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
N = north
S = south
SMART = Sonoma-Marin Area Rail Transit

Transit Services and Facilities. Regional and local fixed-route bus transit service is provided by the County of Marin through Marin Transit, the Golden Gate Bridge Highway and Transportation District through Golden Gate Transit, and SMART. These services connect to locations from the Mark West community north of Santa Rosa to San Francisco. Transit stations in the area provide a connection between local and regional transit services and the project site as summarized in Table 4.9.B.

Table 4.9.B: Existing Transit Service

Route	Distance to Stop (mi)[1]	Service			Destinations
		Operation Days	Time	Frequency	
Marin Transit					
35	Adjacent	Weekdays Weekends	6:30 a.m.–8:45 p.m. 7:00 a.m.–8:45 p.m.	30 min 30 min	Novato, Northgate, Civic Center, Downtown San Rafael, Canal
49	Adjacent	Weekdays Weekends	6:30 a.m.–8:30 p.m. 7:30 a.m.–10:45 p.m.	30 min 60 min	Novato, Hamilton, Northgate, Downtown San Rafael
71	0.19 (SB) 0.38 (NB)	Weekdays Weekends	5:30 a.m.–12:45 a.m. 5:45 a.m.–12:45 a.m.	30-60 min 30-60 min	Novato, San Rafael, Marin City
257	Adjacent	Weekdays	6:00 a.m.–10:45 p.m.	60 min	Novato (Ignacio), Hamilton, Kaiser, Downtown San Rafael
645	Adjacent	School days	a.m. (North) p.m. (South)	1 time NB 1 time SB	Terra Linda High School, Northgate, Civic Center, Downtown San Rafael, Canal
Golden Gate Transit					
54	0.19 (SB) 0.38 (NB)	Weekdays	6:00 a.m.–8:00 a.m. 4:45 p.m.–10:15 p.m.	4 times SB 4 times NB	Novato, San Rafael, San Francisco
70	0.19 (SB) 0.38 (NB)	Daily	5:15 a.m.–10:15 p.m.	60 min	Novato, San Rafael, Larkspur, Corte Madera, San Francisco
Sonoma-Marin Transit District (SMART)					
SMART	0.39	Weekdays Weekends	5:00 a.m.–9:45 p.m. 7:30 a.m.–9:00 p.m.	0.5-3.5 hrs 2 hrs	Larkspur to Sonoma County Airport

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
[1] Defined as the shortest walking distance between the project site and the nearest bus stop.
hrs = hours SB = southbound
mi = miles NB = northbound
min = minutes

The nearest stop for Marin Transit Routes 35, 49, 257, and 645 is adjacent to the project site on Las Gallinas Avenue just north of Merrydale Road. The Terra Linda bus pads serve Marin Transit Route 71 and Golden Gate Transit Routes 54 and 70 and are located between the on- and off-ramps for US-101 in each direction at the Manuel T. Freitas Parkway interchange. The pad for southbound service is located 0.19 mile from the project site, and the northbound pad is located 0.38 mile from the project site.

Regional rail service is provided by SMART at the Marin Civic Center Station, a 0.3-mile walk southeast of the project site along Merrydale Road. As noted above, this connection currently does not have a sidewalk and pedestrians must either walk in the road or take a longer, approximately 0.4-mile route to the station. However, a multi-use trail is planned to close this gap as documented in the City's Bicycle and Pedestrian Master Plan, though this planned improvement is not currently funded.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. Marin Transit offers dial-a-ride service designed to serve the needs of individuals with disabilities within the project area and Marin County overall.

4.9.1.2 Analysis Scope and Methodology

Until July 1, 2020, roadway congestion or LOS was used as the primary study metric for planning and environmental review of development projects in California. However, SB 743 required the OPR to establish a new metric for identifying and mitigating transportation impacts pursuant to CEQA to meet the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. OPR identified VMT as the required CEQA transportation metric, and beginning July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

VMT is a measurement of the amount and distance that a person drives, accounting for the number of passengers within a vehicle. Many interdependent factors affect the amount and distance a person might drive. In particular, the type of built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travel (e.g., private vehicle, public transit, bicycling, walking). Typically, low-density development located at great distances from other land uses and in areas with few alternatives to the private vehicle provides less access than a location with high-density development, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT per capita compared to a similarly sized development located in urban areas. In general, higher VMT areas are associated with more air pollution, including GHG emissions and energy usage, than lower VMT areas. Total VMT is calculated by multiplying the number of trips generated by a project by the total distance of each of those trips; VMT per capita is calculated by dividing the total daily VMT by the number of people (e.g., residents for residential use, employees for non-residential uses).

Lead agencies have the discretion to set their own thresholds of significance regarding the goals of reducing GHG emissions, developing multimodal transportation networks, and promoting a diversity of land uses. The OPR recommends that a per capita or per employee VMT that is 15 percent below the average for existing development in the area may be a reasonable threshold. The OPR's guidance on thresholds is presented in the OPR Technical Advisory and the California Air Resources Board's (CARB) 2017 Scoping Plan – Identified VMT Reductions and Relationship to State Climate Goals. The CARB analysis indicates that the VMT threshold would need to be 16.8 percent for automobile-only VMT to achieve State GHG reduction goals. These points of reference are subject to change over time, however, depending on statewide forecasts of population and travel, as well as economic conditions (e.g., short-term and long-term effects of the COVID-19 pandemic). The City of San Rafael has adopted VMT thresholds that are included in its Transportation Impact Analysis Guidelines,[7] as outlined in Threshold 4.9.2 under Section 4.9.2.3, below in this EIR.

In accordance with the San Rafael Transportation Impact Analysis Guidelines, the analysis in this EIR uses a home-based VMT per capita as the metric for evaluation of the proposed project. Home-based VMT only accounts for trips that begin or end at a place of residence, and does not capture other trips that may occur between non-residence locations throughout the day (e.g., driving to lunch or to meetings during the middle of the day) due to differences in trip-based and tour-based

[7] City of San Rafael. 2021. City of San Rafael Transportation Analysis Guidelines. June.

models. Home-based VMT per capita is an appropriate metric to use because it is normalized and compared to similar baseline values.

4.9.1.3 Regulatory Framework

The following State, regional, County of Marin, and local transportation plans, policies, and regulations guide transportation planning in San Rafael.

State Regulations. This section summarizes applicable State regulations guiding transportation planning in San Rafael.

California Department of Transportation (Caltrans). Caltrans is responsible for the maintenance and operation of State routes and highways. In San Rafael, Caltrans facilities include US-101 and Interstate 580 (I-580).

Caltrans released a VMT-Focused Transportation Impact Study Guide[8] that recommends use of the OPR recommendations for land use projects and plans. For transportation projects, Caltrans has suggested that any increase in VMT would constitute a significant impact for transportation projects. This has been referred to as the "Net Zero VMT Threshold."

Senate Bill 375. As a means to achieve the Statewide emission reduction goals set by Assembly Bill (AB) 32 ("The California Global Warming Solutions Act of 2006"), SB 375 ("The Sustainable Communities and Climate Protection Act of 2008") directs the CARB to set regional targets for reducing GHG emissions from cars and light trucks. Using the template provided by the State's Regional Blueprint program to accomplish this goal, SB 375 seeks to align transportation and land use planning to reduce VMT through modified land use patterns. There are five basic directives of the bill: (1) creation of regional targets for GHG emissions reduction tied to land use; (2) a requirement that regional planning agencies create a Sustainable Communities Strategy (SCS) to meet those targets (or an Alternative Planning Strategy if the strategies in the SCS would not reach the target set by CARB); (3) a requirement that regional transportation funding decisions be consistent with the SCS; (4) a requirement that the Regional Housing Needs Allocation (RHNA) numbers for municipal general plan housing element updates must conform to the SCS; and (5) CEQA exemptions and streamlining for projects that conform to the SCS. The implementation mechanism for SB 375 that applies to land use in San Rafael is Plan Bay Area 2050.[9]

Senate Bill 743. SB 743 was signed into law in 2013 and fundamentally changed the way transportation impacts under CEQA are analyzed. It required OPR to "prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the [CEQA] guidelines …establishing criteria for determining the significance of transportation impacts of projects" to "promote the reduction of greenhouse gas

[8] California Department of Transportation (Caltrans). 2020. VMT-Focused Transportation Impact Study Guide. May 20.

[9] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2018. *Plan Bay Area Projections 2040*. Website: http://projections.planbayarea.org/ (accessed January 17, 2022).

emissions, the development of multimodal transportation networks, and a diversity of land uses."

On December 28, 2018, the Natural Resources Agency adopted *State CEQA Guidelines* Section 15064.3, which establishes specific criteria for evaluating a project's transportation impacts and states that "vehicle miles traveled is the most appropriate measure of transportation impacts." It gives agencies the "discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure" provided that "[a]ny assumptions used to estimate vehicle miles traveled… should be documented and explained in the environmental document prepared for the project." Section 15064.3 further states that except for certain transportation projects, "a project's effect on automobile delay shall not constitute a significant environmental impact." See *Citizens for Positive Growth & Preservation v. City of Sacramento* (2019) 43 Cal. App. 5th 609, 626 (holding that a general plan's impact on LOS, which effectively measures automobile delay, can no longer constitute a significant environmental impact).

Additionally, OPR issued a technical advisory memorandum in December 2018 that includes general guidance and information for lead agencies to use in implementing SB 743, including choosing VMT methodology and establishing VMT thresholds. Lead agencies were given until July 1, 2020 to implement methodologies and thresholds related to VMT to comply fully with SB 743. As a CEQA lead agency, San Rafael has adopted citywide generally applicable VMT thresholds for impact determination in its Transportation Impact Analysis Guidelines (pursuant to 14 Cal. Code Regs 15064(b)). As such, VMT thresholds from the City's Transportation Impact Analysis Guidelines are used for this analysis.

Regional Regulations. This section summarizes applicable regional regulations guiding transportation planning in San Rafael.

Metropolitan Transportation Commission. The Metropolitan Transportation Commission (MTC) is responsible for planning, coordinating, and financing transportation projects in the nine-county Bay Area. The local agencies that comprise these nine counties help the MTC prioritize projects based on need, feasibility, and conformance with federal and local transportation policies. In addition to coordinating with local agencies, the MTC distributes State and federal funding through the Regional Transportation Improvement Program.

Plan Bay Area 2050. Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete an SCS as part of a Regional Transportation Plan (RTP). This strategy integrates transportation, land use, and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050 meets those requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The plan neither funds specific transportation projects nor changes local land use policies.

In the Bay Area, the MTC and the Association of Bay Area Governments (ABAG) adopted Plan Bay Area 2050 in October 2021. To meet the GHG reduction targets, the plan identifies four Growth Geographies where future growth in housing and jobs should be focused: Priority

Development Areas (PDAs), Priority Production Areas (PPAs), Transit-Rich Areas (TRAs), and High-Resource Areas (HRAs). The agencies estimate more than 80 percent of housing growth would occur within TRAs and nearly 30 percent would be within HRAs, and more than 60 percent of job growth would be within walking distance of high-quality transit between 2015 and 2050.[10] The MTC established an "Equity Priority Communities Program" as part of their efforts to address transportation and social equity issues in the region. The Equity Priority Communities Program is designed to focus on addressing transportation challenges and disparities faced by communities that have historically experienced social and economic inequities. The proposed project site is located within an Equity Priority Community.

Transportation Authority of Marin. The 2021 Congestion Management Program (CMP) Update is a document of the Transportation Authority of Marin (TAM), the designated Congestion Management Agency (CMA) for Marin County.

As per the guidelines outlined in the Congestion Management Program by TAM, any proposed general plan update, amendment, or major development that is projected to result in a net increase of 100 vehicle trips during the PM (afternoon) peak hour necessitates the submission of relevant information for TAM's review and comment. Local jurisdictions are tasked with determining which projects meet these specified criteria. The PM peak hour is considered the most suitable for this determination because traffic congestion levels are typically more pronounced during this time than compared to the AM peak hour. As discussed further below, the proposed project would not generate more than 100 new peak-hour trips. Nevertheless, all environmental review documents of countywide concern are transmitted to TAM for review.

City of San Rafael. This section summarizes applicable City regulations guiding transportation planning in San Rafael.

San Rafael General Plan. In August 2021, the City Council adopted San Rafael General Plan 2040. The General Plan envisions the project location within the North San Rafael Town Center area as a vibrant community gathering place, emphasizing public art, diverse shops, dining establishments, and entertainment options. It aims to transform Northgate into a walkable and evolving hub, serving as the heart of North San Rafael. Furthermore, several policies within the plan stress the improvement of transit connections, access, and the creation of bicycle and pedestrian connections between Northgate One, the Mall at Northgate, Northgate Three, the Civic Center SMART station, the Civic Center, and the surrounding neighborhoods.

Goals and policies relevant to the project include:

> **Policy C-11: Alternative Transportation Mode Users.** Encourage and promote individuals to use alternative modes of transportation, such as regional and local transit, carpooling, bicycling, walking and use of low-impact alternative vehicles. Support development of programs that provide incentives for individuals to choose alternative modes.

[10] Note: Growth projections do not sum to 100 percent because PDAs, TRAs, and HRAs are not mutually exclusive.

Program C-11e: Reduction of Single Occupancy Vehicles. Encourage developers of new projects in San Rafael, including City projects, to provide improvements that reduce the use of single occupancy vehicles. These improvements could include preferential parking spaces for carpools, bicycle storage and parking facilities, and bus stop shelters.

Policy M-2.1: Road Hierarchy. Maintain a network of arterial, collector, and local streets that efficiently moves traffic through the city. Engineering and design standards should reflect road type and function, the characteristics of adjacent uses, and the need to accommodate motorized and non-motorized travel.

Program M-2.1A: Complete Streets. Consistent with State "Complete Streets" requirements, maintain street design and engineering standards that plan for the needs of all travelers and minimize conflicts between competing modes.

Policy M-2.5: Traffic Level of Service. Maintain traffic Level of Service (LOS) standards that ensure an efficient roadway network and provide a consistent basis for evaluating the transportation effects of proposed development projects on local roadways.

Policy M-3.2: Using VMT in Environmental Review. Require an analysis of projected Vehicle Miles Traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/policy plans as well as proposed development projects.

Program M-3.2A: Screening Criteria for VMT Analysis. Adopt and maintain screening criteria for different land uses and project types to determine when a VMT analysis is required as part of the environmental review process. Screening criteria should be revisited over time to ensure that they are appropriate.

Program M-3.2B: Thresholds for Determining a Significant VMT Impact. Adopt and maintain thresholds to determine if a VMT impact may be considered "significant" under the California Environmental Quality Act (CEQA).

Program M-3.2C: Mitigation Measures for VMT Impacts. Develop and implement mitigation measures that can be applied to projects with potentially significant VMT impacts in order to reduce those impacts to less than significant levels (see Policy M-3.3 and Program M-3.3A).

Policy M-3.5: Alternative Transportation Modes. Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.

Policy M-3.7: Design Features that Support Transit. For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.

Policy M-5.2: Attractive Roadway Design. Design roadway projects to be attractive and, where possible, to include trees, landscape buffer areas, public art, public space, and other visual enhancements. Emphasize tree planting and landscaping along all streets.

Policy M-6.1: Encouraging Walking and Cycling. Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips, such as trips to school, parks, transit stops, and neighborhood services. Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, public stairways, paths, and sidewalks should be part of San Rafael's identity.

Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation. Maintain San Rafael's Bicycle and Pedestrian Master Plan (BPMP) and update the Plan as required to ensure eligibility for grant funding. The BPMP should be a guide for investment in pedestrian and bicycle infrastructure, and for programs to make walking and cycling a safer, more convenient way to travel.

Program M-6.1B: Station Area Plans. Implement the pedestrian and bicycle improvements in the 2012 Downtown Station Area Plan and the 2012 Civic Center Station Area Plan.

Bicycle and Pedestrian Master Plan. The Bicycle and Pedestrian Master Plan (BPMP) is a San Rafael framework aimed at enhancing the city's walkability and bike-friendliness while concurrently reducing carbon emissions. Its primary goals are to transform San Rafael into a pedestrian and cyclist-friendly environment, thereby encouraging more residents to walk and bike as modes of transportation. The BPMP also emphasizes community involvement by soliciting public input to identify and guide investments in pedestrian and bicycle infrastructure for the next 5 to 10 years. This plan was last updated in 2018 and identifies several improvements in the proposed project vicinity (see Table 4.9.A) that emphasize project site connection with the SMART Civic Center Station, including a proposed multi-use path along Merrydale Road between Las Gallinas Avenue and the Civic Center Station and improved bicycle and pedestrian crossing conditions at the intersection of Merrydale Road and Las Gallinas Avenue.

Civic Center Station Area Plan. The Civic Center Station Area Plan, developed through an extensive public process in 2012, aimed to create a community vision around the SMART station, prioritizing accessibility for pedestrians, cyclists, and transit users, while fostering housing and economic development. Preserving neighborhood character, managing station parking, and protecting nearby creeks and wetlands were key objectives. The plan proposed improvements like wider sidewalks, pedestrian/bicycle links, shuttle routes, a bus transfer point, and traffic safety enhancements.

North San Rafael Vision Promenade Conceptual Plan. The North San Rafael Vision Promenade Conceptual Plan (Promenade Conceptual Plan), which is an integral component of the community's "Vision North San Rafael in The Year 2010" report, outlines several key proposals. These include enhancing bicycle and pedestrian connections between the Terra Linda Recreation Center and Lagoon Park at the Marin County Civic Center, addressing the need for improved public parks and the creation of new plazas, and implementing a cohesive and recurring theme that celebrates local culture, people, natural history, and North San Rafael's community identity through consistent "theme details." This plan serves as a framework to enrich the area with enhanced amenities while fostering a sense of place and community.

San Rafael Transportation Impact Analysis (TIA) Guidelines The City's TIA Guidelines prescribe VMT thresholds of significance and local criteria for analysis. The TIA Guidelines define the following project types and thresholds of significance for VMT under baseline conditions:

- **Residential:** Home-based VMT per capita exceeds the existing regional average minus 15 percent;
- **Employment (e.g., office):** Home-based work VMT per employee exceeds the existing regional average minus 15 percent;
- **Retail:** Project total VMT rate exceeds the existing regional average rate per employees minus 15 percent
- **Mixed-Use Projects and Land Use Plans:** Each land use type evaluated individually against residential, office, and retail thresholds above, and aggregate VMT per service population exceeds the regional average minus 15 percent;
- **Other Land Use Types:** City to develop project-specific threshold; and
- **Redevelopment:** If a redevelopment project leads to a net increase in VMT based on evaluation of individual land uses, or project exceeds the respective thresholds for applicable land use types.

4.9.2 Impacts and Mitigation Measures

This section analyzes the potential of the proposed project to result in impacts on the transportation network. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

4.9.2.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the *State CEQA Guidelines* and the specific thresholds identified in the San Rafael TIA Guidelines. Based on these thresholds, implementation of the proposed project would have a significant impact related to transportation if it would:

Threshold 4.9.1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

Threshold 4.9.2: Conflict or be inconsistent with *State CEQA Guidelines* Section 15064.3, subdivision (b);

Threshold 4.9.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

Threshold 4.9.4: Result in inadequate emergency access.

To apply the significance criteria listed above, the analysis in this section uses the following significance thresholds, which are based on federal, State, and local regulations.

Threshold 4.9.1: Conflict with Applicable Plans, Ordinances, or Policies. The following thresholds are used to determine whether the proposed project would conflict with an applicable plan, ordinance, or policy, including the CMP.

Roadway System. The proposed project would create a significant impact related to the roadway system if any of the following criteria are met:

1. At unsignalized intersections, the project results in any of the traffic signal warrants included in the California Manual on Uniform Traffic Control Devices to be satisfied, or for a location where any of the warrants are satisfied prior to the project, the project increases overall travel through the intersection by more than 1 percent; or

2. The proposed project creates the potential for excessive vehicle queue spillback that could periodically block or interfere with pedestrian, bicycle, or transit facilities.

Transit System. The proposed project would create a significant impact related to transit service if it interferes with existing transit facilities or precludes the construction of planned transit facilities.

Bicycle System. The proposed project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. The proposed project disrupts existing bicycle facilities;
2. The proposed project interferes with planned bicycle facilities; or
3. The proposed project creates inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

Pedestrian System. The proposed project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. The proposed project disrupts existing pedestrian facilities;
2. The proposed project interferes with planned pedestrian facilities; or
3. The proposed project creates inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

Threshold 4.9.2: Vehicle Miles Traveled. The proposed project would include a mix of residential and retail uses and would also entail redevelopment of some existing retail space with residential uses. Recognizing that the proposed project does not fit into a single VMT threshold category, the City has chosen to directly apply the City's VMT significance threshold for residential uses. For retail

uses, VMT is assessed consistent with the redevelopment threshold given that there are existing retail uses on the site that would be redeveloped. To analyze the specific VMT effects of retail development, the total retail VMT generated at the site under plus project conditions is compared to VMT generated under a no-build condition. Based on the above, the following thresholds are used for baseline VMT:

- **Residential:** The impact would be significant if the home-based VMT per capita exceeds 11.4 miles (15 percent below the nine-county Bay Area regional average of 13.4 VMT per capita as obtained from the Transportation Authority of Marin Demand Model [TAMDM]);

- **Retail:** The impact would be significant if the total retail VMT exceeds the VMT generated under the no-build conditions.

In addition to assessing project VMT under baseline conditions, the TIA Guidelines specify that cumulative conditions shall also be assessed. The TIA Guidelines indicate that the citywide average total VMT per service population should be compared between the cumulative "no project" and "plus project" scenarios. Therefore, the following threshold is used for cumulative VMT:

- **Cumulative (Year 2040):** The impact would be significant if the City of San Rafael cumulative (year 2040) average total VMT per service population of 18.8 miles increases as a result of the proposed project.

Threshold 4.9.3: Hazards and Incompatible Uses. The proposed project results in impacts related to hazardous design features if it would not meet the criteria for sight distance contained in the Highway Design Manual (HDM) published by Caltrans.

Threshold 4.9.4: Emergency Access. The proposed project would result in impacts related to emergency access if it would create a project site that is inaccessible to emergency vehicles or limit or restrict emergency vehicle access to emergency routes or roadway facilities in the vicinity of the project site.

4.9.2.2 Proposed Project

As described in Chapter 3.0, Project Description, of this EIR, the proposed project would result in the redevelopment of the project site in two phases. The buildout of Phase 1 would include the demolition of approximately 308,946 square feet of existing commercial space and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units and would be completed by 2025. Buildout of Phase 2 is expected to occur by 2040, and would include the demolition of approximately 339,861 square feet of existing commercial space and construction of up to 55,440 square feet of commercial space and up to 500 additional residential units. At full buildout, the proposed project would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units in six buildings (1,746,936 square feet of residential area). The potential impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) are differentiated by phase in this section.

Trip Generation. The anticipated trip generation for the existing mall and proposed project were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in the Trip Generation Manual, 11th Edition. The ITE rates for a Shopping Center larger than 150,000 square feet (ITE Code 820) and Mid-Rise Multifamily Housing (ITE Code 221) were used. As trip generation rates for shopping centers grow logarithmically with size (larger shopping centers generate fewer trips per square foot than smaller shopping centers), the fitted curve equation was applied for the existing and proposed retail land uses to reflect the increased trip rates as the size of the shopping center decreases.

Internal Capture Trips. The Trip Generation Manual also includes data and methodologies that can be applied to determine the proportion of internal trips that may occur within a development area that includes a variety of land uses. Internal trips occur at mixed-use development, and in the case of the proposed project, would consist of residents working or patronizing adjacent retail uses and shoppers visiting more than one retailer. The majority of these trips would be made by walking, and the few that would be made by automobile would only travel on site and therefore would not affect the adjacent street network or contribute substantial VMT.

Pass-by Trips. Some portion of traffic associated with retail uses is drawn from existing traffic on nearby streets. These vehicle trips are not considered new, but instead are comprised of drivers who are already driving on the adjacent street system and choose to make an interim stop and are referred to as "pass-by." The percentage of these pass-by trips was developed based on information provided in the Trip Generation Manual. This reference includes PM peak-hour pass-by data collected at numerous locations for many land uses, such as the retail use applied in this traffic analysis. It is noted that larger shopping centers tend to have lower pass-by rates because they act more as primary destinations. Therefore, only data points with areas within 150,000 square feet of each shopping center size were used, resulting in average pass-by rates of 15 percent for the existing 766,507-square-foot shopping center, 20 percent for the Phase 1 shopping center of 501,941 square feet,[11] and 32 percent for the Phase 2 shopping center of 217,520 square feet. While fewer pass-by trips would occur during the AM peak hour, a portion of the PM peak-hour pass-by rate was assigned to the AM peak hour to account for trips made to uses such as the existing Peets Coffee, which may attract some drivers from Northgate Drive or Las Gallinas Avenue heading to work or from dropping children off at area schools. A pass-by value between the AM and PM peak hour was assigned to each daily rate to account for the overall average pass-by across a typical weekday.

[11] Since completion of the TIA, the project plans have been refined from 498,661 square feet of commercial area during Phase 1 and a total of 225,100 square feet of commercial area at project buildout (implementation through Phase 2); this minor increase in Phase 1 square footage and decrease in buildout square footage would be negligible and would not substantially change the analysis or conclusions presented in the TIA or in the analysis in this section of the EIR.

Total Project Trip Generation. The expected trip generation for the Master Plan phase of the proposed project is shown in Table 4.9.C, with deduction taken for trips made to and from building space in the existing Northgate Mall, which would cease with demolition of the space for construction of the proposed project, as well as for pass-by and internal capture. Phase 1 of the proposed project is expected to generate an average of 20,739 trips per day, including 735 trips during the AM peak hour and 1,734 during the PM peak hour. After deductions are taken into account, the proposed project would be expected to generate a net reduction of 3,585 trips on a daily basis, including **adding 172 trips during the AM peak hour and reducing 345 trips during the PM peak hour**. These new morning peak-hour trips would represent the increase in traffic associated with the proposed project compared to existing volumes.

Table 4.9.C: Phase 1 Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Shopping Center	-766,507 ksf	33.76	-25,877	0.76	-586	-363	-223	3.19	-2,446	-1,174	-1,272
Pass-by		-6%	1,553	-4%	23	15	8	-15%	367	176	191
Existing Subtotal			***-24,324***	*--*	***-563***	***-348***	***-215***	*--*	***-2,079***	***-998***	***-1,081***
Proposed – Phase 1											
Shopping Center	498,661 ksf	37.87	18,884	0.86	428	265	163	3.60	1,795	861	934
Townhouses	92 du	7.20	662	0.48	44	14	30	0.57	52	30	22
Apartments	885 du	4.54	4,018	0.37	327	75	252	0.39	345	211	134
Proposed Subtotal			***23,564***	*--*	***799***	***354***	***445***	*--*	***2,192***	***1,102***	***1,090***
Internal Capture		-5%	-1,178	-5%	-40	-18	-22	-5%	-110	-55	-55
Pass-by		-9%	-1,647	-6%	-24	-15	-9	-20%	-348	-167	-181
Proposed Total			**20,739**	**--**	**735**	**321**	**414**	**--**	**1,734**	**880**	**854**
Net New Total (Phase 1 Proposed Less Existing)			**-3,585**	**--**	**172**	**-27**	**199**	**--**	**-345**	**-118**	**-227**

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
du = dwelling units
ksf = thousand square feet

The expected trip generation for buildout through Phase 2 (including Phase 1) of the proposed project is shown in Table 4.9.D. As shown in Table 4.9.D, buildout of the proposed project would generate an average of 15,940 trips per day, including 740 during the AM peak hour and 1,193 during the PM peak hour (or a total decrease of 4,799 trips compared to Phase 1). With deductions for the existing land use, pass-by trips, and internal capture included, the proposed project is anticipated to result in 8,384 fewer trips per day compared to existing conditions, including **a net increase of 177 trips during the AM peak hour** and a **net decrease of 886 trips during the PM peak hour**. Compared to Phase 1, buildout of the project would further reduce trips by 4,799 per day and 541 during the PM peak hour, and would add 5 more trips during the AM peak hour.

Table 4.9.D: Full Buildout Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Shopping Center	-766,507 ksf	33.76	-25,877	0.76	-586	-363	-223	3.19	-2,446	-1,174	-1,272
Pass-by		-6%	1,553	-4%	23	15	8	-15%	367	176	191
Existing Subtotal			***-24,324***	***--***	***-563***	***-348***	***-215***	***--***	***-2,079***	***-998***	***-1,081***
Proposed - Buildout											
Shopping Center	225,100 ksf	52.16	11,741	1.18	266	165	101	4.50	1,012	486	526
Townhouses	92 du	7.20	662	0.48	44	14	30	0.57	52	30	22
Apartments	1,330 du	4.54	6,038	0.37	492	113	379	0.39	519	316	203
Proposed Subtotal			***18,441***	***--***	***802***	***292***	***510***	***--***	***1,583***	***832***	***751***
Internal Capture		-5%	-922	-5%	-40	-15	-25	-5%	-79	-42	-37
Pass-by		-14%	-1,579	-9%	-22	-14	-8	-32%	-311	-149	-162
Proposed Total			**15,940**	**--**	**740**	**263**	**477**	**--**	**1,193**	**641**	**552**
Net New Total (Proposed Buildout Less Existing)			**-8,384**	**--**	**177**	**-85**	**262**	**--**	**-886**	**-357**	**-529**

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
du = dwelling unit
ksf = 1,000 square feet

4.9.2.3 Project Impacts

This section analyzes potential project-specific and cumulative impacts to the transportation and circulation network in the study area. Impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) are differentiated where appropriate.

Threshold 4.9.1: Conflict with Applicable Plans, Ordinances, or Policies. This section discusses the proposed project's impacts related to conflicts with applicable plans, ordinances, and policies. As stated above in Section 4.9.2.1, specific thresholds are used to determine whether the proposed project would conflict with an applicable plan, ordinance, or policy. This section assesses project consistency with each of these thresholds.

Roadway System. Impacts to the roadway system were evaluated through a signal warrant analysis and a vehicle queuing analysis, described below.

Signal Warrant Analysis. A signal warrant analysis was conducted to evaluate whether or not vehicle trips generated by the proposed project would require signalization of currently unsignalized intersections to accommodate traffic flows. The signal warrant analysis was performed at unsignalized intersections in the project vicinity according to the methodology contained in the California Manual on Uniform Traffic Control Devices (MUTCD) published by Caltrans. The study analyzed the intersections of Northgate Drive/Thorndale Drive, Northgate Drive/El Faisan Drive, and Northgate Drive/Nova Albion Way. Based on the signal warrant analysis results, a traffic signal is not warranted at any of the study intersections.[12] Since signal warrant conditions are not met at any of the intersections, the proposed project

[12] Parametrix. 2023. *Signal Warrant Analysis Results for the Northgate Town Square Project*. October 3.

would result in a **less than significant** impact related to needed signalization of intersections on the roadway system.

Vehicle Queuing Analysis. A vehicle queuing analysis was performed according to the City's TIA Guidelines to determine adequacy of stacking space in dedicated turn lanes at study intersections as a result of vehicle trips that would be generated by the project. Based on queue analysis results, vehicle queues at intersections in the project vicinity would either be contained within the existing turn lane capacities, or the queue increase in an already deficient stacking distance would be less than 50 feet.[13] As a result, the proposed project would not create the excessive vehicle queue spillback that could periodically block or interfere with pedestrian, bicycle, or transit facilities. This impact would be **less than significant**.

Transit System. Existing and planned transit facilities within the vicinity of or accessed from the project area are described above in Section 4.9.1.1. The proposed project would not interfere with existing transit facilities and would not preclude the construction of planned transit facilities, including the currently unfunded multi-use trail planned along Merrydale Road. Existing transit routes are adequate to accommodate project-generated trips, and existing transit stops are within an acceptable walking distance of the site. Consequently, the proposed project would have a **less than significant** impact on the transit system.

Bicycle System. Existing bicycle facilities together with the shared use of minor streets provide adequate access for bicyclists. The facilities adjacent to the project site include bicycle lanes on Northgate Drive, Las Gallinas Avenue, and Del Presidio Boulevard, and the multi-use trail parallel to Las Gallinas Avenue. These facilities would be maintained with development of the project. A network of bicycle lanes would be provided on the internal street network around the project's residential areas, while the remainder of the streets would have shared lane markings. A new multi-use trail is proposed to extend from the existing multi-use trail at Las Gallinas Avenue/ Merrydale Road into the center of the site, where a bicycle station with a repair area and bicycle lockers would be located. Additionally, the multi-use trail along the Las Gallinas Avenue frontage would be extended south to Northgate Drive as part of the project. The proposed project would not disrupt existing bicycle facilities, would not interfere with planned bicycle facilities, and would maintain consistency with the San Rafael Bicycle and Pedestrian Master Plan. As a result, the proposed project would have a **less than significant** impact on the bicycle system.

Pedestrian System. Pedestrian access to the project site is provided by continuous sidewalks along Northgate Drive and Las Gallinas Avenue, as well as sidewalks along the internal roadways. Sidewalks surrounding the project site would not be altered and would continue to provide access to the site. A new multi-modal path would be introduced by the project along the Las Gallinas Avenue frontage. Internal sidewalks and walkways proposed by the project would provide access to and between the residential and commercial uses. Additionally, the proposed project would connect to existing and planned pedestrian facilities, including the planned but currently unfunded multi-modal path along Merrydale Road to the Marin Civic Center SMART station. The proposed project would not disrupt existing pedestrian facilities, would not

[13] W-Trans. 2023. *Transportation Impact Study for the Northgate Town Square Project*. February 14.

interfere with planned pedestrian facilities, and would maintain consistency with the San Rafael Bicycle and Pedestrian Master Plan. As such, the proposed project would result in a **less than significant** impact on the pedestrian system.

As discussed in Section 4.9.1.3, Regulatory Framework, additional adopted plans and policies are applicable to the project at the regional and local level. As discussed in more detail below, for CEQA purposes, the proposed project would be consistent with applicable plans, ordinances, and policies that address the circulation system as shown in Table 4.9.E; therefore, impacts would be **less than significant.**

Threshold 4.9.2: Vehicle Miles Traveled. As discussed in Section 4.9.2.1, Significance Criteria, the proposed project would result in a significant impact related to VMT if the home-based VMT per capita exceeds 11.4 miles or the total retail VMT exceeds the VMT generated under the no-build conditions.

Forecasts of regional travel by various modes were determined using TAMDM; the travel model is a set of mathematical procedures and equations that represent the variety of transportation choices that people make, and how those choices result in trips on the transportation network. The TAMDM is an activity-based model that is a member of the Coordinated Travel – Regional Activity-Based Modeling Platform (CT-RAMP) family of models. TAMDM is nested within the nine-county Bay Area Travel Model Two activity-based model maintained by the MTC. The MTC version of the CT-RAMP features a detailed spatial system, including an all-streets transportation network with 4,800 Transportation Analysis Zones (TAZs) and almost 40,000 Micro-Analysis Zones (MAZs). The project site is located within TAZ 800168 and MAZs 811396, 811677, 812868, and 812896 in TAMDM.

The most recent version of TAMDM was used to identify the VMT generated by land uses in Marin County as well as the entire Bay Area region. For the proposed project, the 2019 version of TAMDM that includes the SMART commuter rail service, and the 2040 version that incorporates the changes envisioned by long-range land use plans throughout Marin County, including the San Rafael General Plan adopted in 2021, were used to produce VMT estimates. TAMDM requires land uses to be defined for each geographic area in the region (i.e., the MAZ). The model land use inputs include numbers of households, persons and their attributes, employees by employment category, as well as enrollment at schools. The land use and population changes associated with the proposed project were compiled and used in the applied model runs.

For analysis of the residential uses, the VMT associated with all home-based trips made by residents are assessed. The associated average residential VMT per capita is calculated by summing this total vehicle mileage and dividing by the projected number of residents. Similarly, the regional average VMT per capita is calculated by summing the vehicle mileage for all Bay Area trips and dividing the Bay Area population. For retail uses, VMT is analyzed as total retail VMT rather than in a per-person efficiency metric. The total retail VMT associated with existing and proposed quantities of retail development within the project TAZ and MAZs were extracted from the TAMDM for each analysis scenario. For the cumulative (2040) scenarios, a total VMT per service population performance metric was used, focusing on the total VMT generated within San Rafael. This total citywide VMT and corresponding service populations were extracted from the TAMDM for each cumulative scenario. The service population is defined as the sum of all residents and workers in San Rafael.

Table 4.9.E: Project Compliance with Applicable Transportation-Related Plans, Ordinance, and Policies

Plan/Ordinance/Policy	Project Consistency
Plan Bay Area 2050	***Consistent.*** The proposed project would be consistent with the Plan Bay Area 2050 goals and performance targets for transportation system effectiveness. The proposed project would develop new housing units that would locate residents near existing residential, office, and commercial uses, reducing the demand for travel by single-occupancy vehicles. In addition, the project area is served by public transit facilities and would provide enhanced internal bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single-occupancy vehicles. According to the Equity Priority Community designation, the project would align with regional growth strategies and equity priority zones.
Congestion Management Program (CMP)	***Not Applicable.*** Phase 1 of the proposed project would generate 345 fewer vehicle trips during the PM peak hour, and Phase 2 would generate 866 fewer vehicle trips during the PM peak hour, compared to the CMP threshold of projects that would generate 100 PM peak-hour vehicle trips. Consequently, the project would not conflict with the CMP requirements, and a CMP analysis is not necessary.
San Rafael General Plan: **Program C-11e: Reduction of Single-Occupancy Vehicles.** Encourage developers of new projects in San Rafael, including City projects, to provide improvements that reduce the use of single-occupancy vehicles. These improvements could include preferential parking spaces for carpools, bicycle storage and parking facilities, and bus stop shelters.	***Consistent.*** The proposed project would align with the goal of reducing single-occupancy vehicle use in San Rafael. The project would promote biking by creating new bicycle facilities and a network of bicycle facilities and sidewalks throughout the project site and connecting to external bicycle facilities. The project's location near public transit facilities would further encourage and support the use of alternative transportation modes. This comprehensive approach would ensure consistency with the objective to reduce single-occupancy vehicle travel in San Rafael.
Policy M-2.5: Traffic Level of Service. Maintain traffic level of service (LOS) standards that ensure an efficient roadway network and provide a consistent basis for evaluating the transportation effects of proposed development projects on local roadways.	***Consistent.*** A comprehensive LOS analysis was conducted to determine potential impacts of the project on traffic circulation (refer to Section 4.9.3, Non-CEQA Analysis). The evaluation provided in the analysis shows that all of the intersections in the project vicinity would operate at an acceptable LOS in the future with the addition of traffic generated by both Phase 1 and Phase 2 (through buildout) of the proposed project.
Program M-2.1A: Complete Streets. Consistent with State "Complete Streets" requirements, maintain street design and engineering standards that plan for the needs of all travelers and minimize conflicts between competing modes.	***Consistent.*** In alignment with State "Complete Streets" requirements, both phases of the proposed project would co-locate diverse land uses and would provide pedestrian and bicycle infrastructure that minimizes conflicts between competing travel modes.
Policy M-3.2: Using VMT in Environmental Review. Require an analysis of projected vehicle miles traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/policy plans as well as proposed development projects.	***Consistent.*** The proposed project would align with Policy M-3.2, which necessitates the inclusion of an analysis of projected VMT as a component of the environmental review process. The project's VMT assessment indicates that both the residential and retail land use components would be expected to have a less than significant impact on VMT for both phases of the proposed project (Section 4.9.2), thereby adhering to the policy's directives.
Policy M-3.5: Alternative Transportation Modes. Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.	***Consistent.*** Both phases of the proposed project would actively encourage alternative transportation options that are convenient and cost-effective, reducing reliance on single-passenger car travel. Furthermore, the proposed project would incorporate dedicated pedestrian and bike infrastructure, facilitating safe and accessible travel and fostering sustainability, safety, and inclusivity in urban mobility.
Policy M-3.7: Design Features that Support Transit. For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.	***Consistent.*** The project would be located near the SMART Civic Center Station and would also be adjacent to several local bus routes. The project would facilitate easy access to transit stops by implementing a network of attractive bicycle and pedestrian facilities throughout the site.

Table 4.9.E: Project Compliance with Applicable Transportation-Related Plans, Ordinance, and Policies

Plan/Ordinance/Policy	Project Consistency
Policy M-5.2: Attractive Roadway Design. Design roadway projects to be attractive and, where possible, to include trees, landscape buffer areas, public art, public space, and other visual enhancements. Emphasize tree planting and landscaping along all streets.	***Consistent.*** Both phases of the proposed project would incorporate landscaping and planted trees along a new roadway surrounding the Town Square and along other internal drive aisles throughout the site.
Policy M-6.1: Encouraging Walking and Cycling. Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips (e.g., trips to school, parks, transit stops, and neighborhood services). Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, public stairways, paths, and sidewalks should be part of San Rafael's identity.	***Consistent.*** The proposed project would align with the goal of encouraging walking and cycling as the preferred travel mode for short trips, such as journeys to schools, parks, transit stops, and neighborhood services. It would create safe and walkable access ways with appealing streets that are enhanced by the presence of bike lanes and sidewalks. Both phases of the proposed project would promote active transportation by implementing a network of bicycle facilities and sidewalks throughout the project and connecting to existing active transportation networks outside the project site.
San Rafael Bicycle and Pedestrian Master Plan	***Consistent.*** The project would align with planned projects identified in the Bicycle and Pedestrian Master Plan, including the facilitation of an enhanced crossing at the intersection of Merrydale Road and Las Gallinas Avenue. The project is consistent with plan goals of increasing safety and connectivity for all circulation network users, and would also establish new bicycle and pedestrian facilities throughout the project site.
Civic Center Station Plan	***Consistent.*** The proposed project would align with the Civic Center Station Area Plan's vision to enhance multi-modal connection between the project site and the SMART Civic Center Station by providing for improved intersection crossing of Las Gallinas Avenue at Merrydale Road for bicyclists and pedestrians.
Promenade Conceptual Plan	***Consistent.*** The proposed project would be consistent with the Promenade Conceptual Plan by providing pedestrian and bicycle facilities throughout the site, which would serve to foster a sense of place and community on the northern end of the envisioned promenade.

Source: Compiled by Parametrix (2023).
SMART = Sonoma-Marin Area Rail Transit

Residential Land Uses. The TAMDM indicates that the nine-county Bay Area has a baseline average VMT of 13.4 miles per capita. Applying the residential significance threshold, the proposed project would have a significant VMT impact if its residential VMT per capita exceeds a level of 15 percent below the regional average, or 11.4 VMT per capita.

A summary of the VMT analysis is provided in Table 4.9.F. As shown in Table 4.9.F, Phase 1 of the proposed project is projected to produce 11.0 VMT per capita under the existing baseline scenario, reducing to 9.0 VMT per capita under the 2040 scenario. Buildout of the proposed project with implementation of Phase 2 is projected to result in 10.7 VMT per capita under the 2040 scenario. Therefore, the residential components of the proposed project would have a **less than significant impact** on VMT during implementation of Phase 1 and projected buildout through Phase 2.

Table 4.9.F: Residential VMT Analysis Summary

Scenario	VMT per Capita Significance Threshold	Project Site			
		Residential VMT	Residential Population	VMT Per Capita	Below Threshold?
Existing Plus Phase 1	11.4	26,187	2,391	11.0	Yes
2040 Plus Phase 1	11.4	21,570	2,391	9.0	Yes
2040 Plus Phase 2	11.4	39,340	3,662	10.7	Yes

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
Note: Existing conditions reflect full occupancy of the existing mall site.
VMT= vehicle miles traveled

Retail Land Uses. The proposed project would have a significant VMT impact if its total retail VMT exceeds that generated under "no build" conditions. Dedicated runs of the TAMDM were performed for existing baseline and 2040 conditions without the project, as well as baseline conditions with implementation of Phase 1, and 2040 conditions with Phase 2. Post-processing of the TAMDM model output was conducted to isolate the total retail VMT projected to be generated by retail uses at the project site.

As shown in Table 4.9.G, the TAMDM modeling results indicate that Phase 1 would be expected to reduce the total retail VMT generated at the project site by approximately 38,350 to 39,600 miles per day as compared to "no build" conditions. In the year 2040 with buildout of Phase 2, the total retail VMT is projected to be approximately 81,100 miles less per day than "no build" conditions. Since the redevelopment of retail uses proposed by the project would lead to a reduction in total retail VMT, the project's retail component is considered to have a **less than significant impact** on VMT.

Table 4.9.G: Project Site Retail VMT Summary

Scenario	No Build Conditions		Plus Project Conditions		
	Model Base Year	Total Retail VMT	Total Retail VMT	Change	Below Threshold?
Existing Plus Phase 1	2019	95,846	57,495	-38,351	Yes
2040 Plus Phase 1	2040	108,865	69,253	-39,612	Yes
2040 Plus Phase 2	2040	108,865	27,721	-81,114	Yes

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
VMT = vehicle miles traveled

Cumulative VMT. As discussed in Section 4.9.2.1, Significance Criteria, the proposed project would have a significant impact on VMT if it causes the City's cumulative (year 2040) average total VMT per service population to increase. Based on the TAMDM model runs performed for the proposed project, which are summarized below in Table 4.9.H, the City is projected to have an average total VMT per service population of 18.8 under the "no build" condition. In 2040 with development under Phase 1, the City's average VMT per service population is projected to be 18.1 miles, and in 2040 with implementation of Phase 2 it is projected to be 18.0 miles. Therefore, because both Phases 1 and 2 would each result in reduction to the City's average total VMT per service population, the proposed project would be considered to have a **less than significant** impact on VMT.

Table 4.9.H: Cumulative VMT Analysis Summary

Scenario	Total VMT City of San Rafael	Total Service Population	Total VMT per Service Population	Below Threshold?
2040 No Project	2,130,263	113,571	18.8	N/A
2040 Plus Phase 1	2,095,779	115,515	18.1	Yes
2040 Plus Phase 2	2,089,433	116,330	18.0	Yes

Source: *Transportation Impact Study for the Northgate Town Square Project* (W-Trans 2023).
N/A = not applicable
VMT = vehicle miles traveled

Threshold 4.9.3: Hazards and Incompatible Uses. This section discusses whether or not the proposed project would substantially increase hazards due to geometric design features or incompatible uses. The potential for the project to impact safety is evaluated in terms of the adequacy of sight distance and the need for turn lanes at the project driveways.

Site Access. The project site has 12 access points. Clockwise from the northwest corner, they are:

1. Intersection of Las Gallinas Avenue/Del Presidio Boulevard (inbound only);
2. Driveway 580 feet east of Las Gallinas Avenue/Del Presidio Boulevard;
3. Driveway 300 feet north of Las Gallinas Avenue/Merrydale Road;
4. Intersection of Las Gallinas Avenue/Merrydale Road;
5. Driveway 400 feet north of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive;
6. Driveway 230 feet north of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive;
7. Driveway 140 feet north of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive;
8. Driveway 340 feet west of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive
9. Driveway 100 feet west of Northgate Drive/El Faisan Drive
10. Intersection of Northgate Drive/Thorndale Drive; and
11. Driveway 400 feet south of Las Gallinas Avenue/Northgate Drive.

With implementation of the proposed project, the driveways 230 feet and 140 feet north of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive would be removed, and the driveway 100 feet west of Northgate Drive/El Faisan Drive would be moved to Northgate Drive/El Faisan Drive,

converting the existing tee intersection into a four-legged intersection. The other driveways would remain unchanged.

Sight Distance. Sight distances along Northgate Drive and Las Gallinas Avenue at the project driveways were evaluated using sight distance criteria contained in the HDM. The recommended sight distances for approaches on the major street to driveways and private street intersections are based on stopping sight distance with approach travel speed used as the basis for determining the recommended sight distance.

For the posted speed limit of 25 mph on Northgate Drive and Las Gallinas Avenue, the minimum stopping sight distance needed is 150 feet. Sight distances from each driveway except two were measured in excess of 250 feet in both directions, providing adequate stopping sight distance for vehicles traveling on the roadway at all driveway and side street approaches except for two.

One of the exceptions is the driveway 580 feet east of Las Gallinas Avenue/Del Presidio Boulevard. At this location, sight distance to the right (of traffic heading westbound) was measured at 210 feet. The speed of westbound drivers was checked through an informal speed survey using a speed radar gun. Due to the horizontal curve east of the driveway, no westbound drivers were recorded traveling faster than 23 mph. Since 150 feet of stopping sight distance is recommended for 25 mph and 210 feet of sight distance is available, sight lines to and from this driveway are adequate.

The other exception is the driveway 280 feet north of Northgate Drive/Thorndale Drive. Due to the dense vegetation south of this driveway combined with vertical grade on the driveway ascending up to the roadway, sight distance from the driveway to the left (of northbound traffic) is restricted to 160 feet. Another informal speed study was conducted to estimate the critical speed of traffic, which is defined as the speed at or below which 85 percent of drivers are observed to be traveling. Based on this informal study, the critical speed of northbound drivers on Northgate Drive just south of this driveway was measured at 32 mph.

The HDM provides minimum stopping sight distances for increments of 5 mph. Between these increments, the HDM defers to a Policy on Geometric Design of Highways and Streets published by the American Association of State Highway and Transportation Officials (AASHTO) (referred to as the Greenbook). The Greenbook prescribes a formula for converting speed into stopping sight distance that results in 216 feet for 32 mph. Therefore, the sight distance at this intersection would be inadequate resulting in a potentially hazardous design. This is a potentially significant impact.

Impact TRA-1 Implementation of the proposed project would worsen an existing hazardous geometric design feature at the driveway 280 feet north of Northgate Drive/Thorndale Drive. (S)

The Federal Highway Administration (FHWA) recommends that bushes and shrubs in the motorists' line of sight should be kept under 3 feet in height, and that trees and hanging branches be trimmed to a minimum height of 7 feet. It is noted that due to the vertical rise of the driveway as it ascends to match Northgate Drive, the eye level of a driver looking to enter

Northgate Drive is lower than on a descending or level driveway and therefore ground-based foliage such as shrubs and grasses may restrict sight lines more than at other locations. Therefore, the foliage in the sight triangle bound by a driver waiting 15 feet from the edge of travel on Northgate Drive, a northbound driver approaching from 216 feet from the south, and a straight line between the two should be entirely removed, as specified in Mitigation Measure TRA-1, below.

Mitigation Measure TRA-1: **Sight Triangle Maintenance.** The project sponsor shall submit plans showing that vegetation would be removed from the sight triangle shown on Plate 2 in the Transportation Impact Study (TIS) prepared for the proposed project (included as Appendix F to the Environmental Impact Report [EIR]). Consistent with the Federal Highway Administration's (FHWA) guide on Vegetation Control for Safety (2007), bushes and shrubs within a motorists' line of sight shall be kept under 3 feet in height, and trees and hanging branches shall be trimmed to a minimum height of 7 feet. The City's Community Development Director, or their designee, shall verify that the project plans show the sight triangle clear of vegetation consistent with FHWA guidelines prior to the issuance of any building permits. These conditions shall also be maintained throughout the life of the project. (LTS)

Implementation of Mitigation Measure TRA-1 would ensure that a minimum of 216 feet of sight distance would be available for drivers at the driveway 280 feet north of Northgate Drive/ Thorndale Drive. Therefore, implementation of Mitigation Measure TRA-1 would reduce this impact to a **less than significant** level.

Access Analysis. Most driveways that would serve the project have existing left-turn lanes. The exceptions that were assessed for the need for a left-turn lane are:

- The driveway 580 feet east of Las Gallinas Avenue/Del Presidio Boulevard;
- The driveway 400 feet north of Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive; and
- The intersection at Northgate Drive/Thorndale Drive.

It is noted that a left-turn lane into the project site does not exist at Las Gallinas Avenue/Del Presidio Boulevard; however, this movement is prohibited, so a warrant was not studied.

The need for a left-turn lane at each of the three driveways was evaluated in the TIS. Warrants were assessed for each driveway for both Phase 1 and Phase 2 under future 2040 conditions because this represents the highest background traffic volumes assessed. Because the left-turn warrant is based on traffic volumes, this presents the "worst case" scenario for a warranted left-turn lane. Under the AM peak-hour condition assessed, a left-turn lane is not warranted at any of the three driveways.

Conditions for the PM peak hour were not assessed as Phases 1 and 2 would both result in a reduction to inbound volumes during the PM peak hour compared to existing fully occupied site conditions. Additionally, there is no history of collisions involving drivers turning left into the project site that would demonstrate the need for additional left-turn lanes because there was only one collision reported during the 5-year study period involving a driver turning left into the project site, and that was at a location that already had a left-turn lane. Turn lane warrant worksheets are provided in the TIS. Therefore, project impacts due to site access would be **less than significant**.

Threshold 4.9.4: Emergency Access. The following section addresses potential impacts related to the adequacy of emergency access and the impact of the proposed project on response times.

Adequacy of Emergency Access. The City of San Rafael Municipal Code Chapter 4.08 adopts the 2019 California Fire Code with several amendments regarding emergency access. With regard to traffic, a fire access road of at least 20 feet in unobstructed width must be provided within 150 feet of all exterior building walls. Both phases of the proposed project would include a network of interior roads and parking aisles at least 20 feet wide that provide access within 150 feet of all building exteriors when combined with the public streets of Las Gallinas Avenue and Northgate Drive around the outside of the project site. There would be multiple interior paths through the project that connect the multiple driveways, providing alternative routes in the event one aisle or driveway is blocked. The proposed project would therefore have adequate emergency access, and this impact would be **less than significant**.

Impact on Response Times. As described in Section 4.9.2.2, the proposed project would result in a reduction in traffic on the surrounding roadway network over the course of the day and during the critical PM peak period. Therefore, neither phase of the proposed project would result in adverse impacts on emergency response times within the vicinity of the project site, and this impact would be **less than significant**.

4.9.2.4 Cumulative Impacts

This section discusses potential cumulative impacts to the transportation and circulation network in the study area. As summarized in this section, the proposed project, in combination with cumulative projects, would have **less than significant** impacts with respect to conflicts with applicable plans, VMT, hazards, and emergency access.

Conflicts with Applicable Plans, Ordinances, or Policies. As discussed above, for CEQA purposes, the proposed project would be consistent with applicable plans, ordinances, and policies that address the circulation system as shown in Table 4.9.E. The proposed project, in combination with future projects occurring over the 2040 buildout horizon of the General Plan, would not result in conflicts with applicable plans, policies, or ordinances governing the transportation system because each individual future project would be evaluated for consistency.

Vehicle Miles Traveled. Consistent with the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the

effects of past projects, the effects of other current projects, and the effects of probable future projects." A project that falls below an efficiency-based threshold that aligns with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. As described in Section 4.9.2.3, Project Impacts, the City of San Rafael cumulative (year 2040) average total VMT per service population would be 18.0 miles, which is less than the average total VMT per service population of 18.8 miles under the 2040 no build condition. Therefore cumulative VMT impacts would be less than significant.

Hazards or Incompatible Uses. Overall, cumulative land use development and transportation projects would promote accessibility for people walking to and through the site by conforming to General Plan policies and zoning regulations, and by adhering to planning principles that emphasize providing convenient connections and safe routes for people walking, bicycling, driving, and taking transit. Additionally, as with current practice, projects would be designed and reviewed in accordance with the City's Public Works Department requirements, and the Department would provide oversight engineering review to ensure that the project is constructed according to City specifications. As a result, the cumulative projects would not generate activities that would increase hazards due to a design feature or incompatible use. For these reasons, the proposed project, in combination with cumulative projects, would have a less than significant cumulative impact with respect to design features or incompatible uses.

Emergency Access. Future development, as part of the City's project approval process, would be required to comply with existing regulations, including General Plan policies and zoning regulations that have been prepared to minimize impacts related to emergency access. The City, throughout the 2040 buildout horizon, would implement the General Plan programs that require the City's continued coordination with the San Rafael Police Department and the San Rafael Fire Department to establish circulation standards, adopt an emergency response route map, and equip all new traffic signals with pre-emptive traffic signal devices for emergency services. Furthermore, the implementation of the zoning regulations would help to minimize traffic congestion that could impact emergency access. For these reasons, the proposed project, in combination with cumulative projects, would have a less than significant cumulative impact with respect to emergency access.

4.9.3 Non-CEQA Analysis

4.9.3.1 Intersection Level of Service Analysis

The findings of the intersection LOS compliance analysis are presented in this section for informational purposes. The analysis scope and methodology, analysis scenarios, data collection, and LOS policy standards are detailed in the Transportation Operations Study[14] prepared for the proposed project and included as Appendix H of this EIR. As stated above, LOS is no longer a CEQA threshold. However, LOS is used for local planning purposes. The LOS analysis determines whether the project traffic would cause an intersection's LOS to exceed the City's LOS standards or cause either the average delay or average critical delay to exceed the City's intersection delay standards under existing and cumulative conditions.

[14] W-Trans. 2023. *Transportation Operations Study for the Northgate Town Square Project*. February 14.

Baseline Plus Phase 1 Conditions. Traffic operations were evaluated at the study intersections under baseline conditions plus traffic generated by Phase 1 of the proposed project. Table 4.9.I provides the LOS result for the study intersections during the AM peak hour. As shown, all of the study intersections would operate at an acceptable LOS with the addition of Phase 1 project traffic.

Table 4.9.I: Baseline Plus Phase 1 AM Peak-Hour Intersection Levels of Service

Study Intersection & *Approach*	Standard		Baseline Conditions		Baseline Plus Master Plan	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Manuel T. Freitas Parkway/Las Gallinas Avenue	<55.0	D	37.1	D	36.5	D
2. Manuel T. Freitas Parkway/Northgate Drive	<55.0	D	19.3	B	19.5	B
3. Manuel T. Freitas Parkway/Del Presidio Boulevard	--	Exempt	8.3	A	8.2	A
4. Manuel T. Freitas Parkway /US-101 South Ramps	<35.0	D	0.0	A	0.0	A
5. Redwood Highway/US-101 North On-Ramp	<35.0	D	0.7	A	1.0	A
6. Manuel T. Freitas Parkway/US-101 North Ramps	<35.0	D	4.5	A	4.5	A
7. Manuel T. Freitas Parkway/Redwood Highway-Civic Center Drive	<55.0	E	4.4	A	4.8	A
Northbound (Civic Center Drive) Approach	<55.0	E	7.9	A	8.9	A
Southbound (Redwood Highway) Approach	<55.0	E	8.1	A	8.0	A
8. Las Gallinas Avenue/Nova Albion Way	<55.0	D	33.3	C	34.8	C
9. Las Gallinas Avenue/Northgate Drive	<55.0	D	16.6	B	19.2	B
10. Las Gallinas Avenue/Del Presidio Boulevard	<55.0	D	22.1	C	22.6	C
11. Las Gallinas Avenue/Merrydale Road	<55.0	D	11.9	B	11.0	B
12. Merrydale Road/Civic Center Drive	N/A	F	15.1	B	16.4	B
13. Northgate Drive/Thorndale Drive	<35.0	D	0.7	A	0.6	A
Eastbound (Thorndale Drive) Approach	<35.0	D	12.7	B	14.3	B
14. Northgate Drive/El Faisan Drive	<35.0	D	1.2	A	2.7	A
Northbound (El Faisan Drive) Approach	<35.0	D	12.4	B	15.3	C
Southbound (Project Driveway) Approach	<35.0	D	--	--	13.9	B
15. Northgate Drive/Nova Albion Way	<35.0	D	4.4	A	4.7	A
Northbound (Nova Albion Way) Approach	<35.0	D	15.6	C	19.8	C
16. Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive	<55.0	D	9.4	A	10.0	B
17. Los Ranchitos Road/North San Pedro Road	<55.0	D	7.6	A	7.6	A

Source: *Transportation Operations Study for the Northgate Town Square Project* (W-Trans 2023)
LOS = level of service
sec = seconds
US-101 = United States Route 101

Future Plus Phase 1 Conditions. Traffic operations were evaluated at the study intersections under future conditions plus traffic generated by Phase 1 of the proposed project. Table 4.9.J provides the LOS result for the study intersections during the AM peak hour. As shown, all of the study intersections would operate at an acceptable LOS with the addition of Phase 1 project traffic.

Future Plus Phase 2 Conditions. Traffic operations were evaluated at the study intersections under future conditions plus traffic generated by Phase 2 of the proposed project. Table 4.9.K provides the LOS result for the study intersections during the AM peak hour. As shown, all of the study intersections would operate at an acceptable LOS with the addition of Phase 2 project traffic.

Table 4.9.J: Future Plus Phase 1 AM Peak-Hour Intersection Levels of Service

Study Intersection & *Approach*	Standard		Future Conditions		Future Plus Master Plan	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Manuel T. Freitas Parkway/Las Gallinas Avenue	<55.0	D	50.2	D	49.8	D
2. Manuel T. Freitas Parkway/Northgate Drive	<55.0	D	20.2	C	20.3	C
3. Manuel T. Freitas Parkway/Del Presidio Boulevard	--	Exempt[1]	8.5	A	8.3	A
4. Manuel T. Freitas Parkway/US-101 South Ramps	<35.0	D	0.0	A	0.0	A
5. Redwood Highway/US-101 North On-Ramp	<35.0	D	0.6	A	0.8	A
6. Manuel T. Freitas Parkway/US-101 North Ramps	<35.0	D	10.4	B	7.2	A
7. Manuel T. Freitas Parkway/Redwood Highway-Civic Center Drive	<55.0	E	6.1	A	6.8	A
Northbound (Civic Center Drive) Approach	<55.0	E	10.6	B	13.6	B
Southbound (Redwood Highway) Approach	<55.0	E	11.5	B	10.9	B
8. Las Gallinas Avenue/Nova Albion Way	<55.0	D	33.4	C	34.8	C
9. Las Gallinas Avenue/Northgate Drive	<55.0	D	14.7	B	17.4	B
10. Las Gallinas Avenue/Del Presidio Boulevard	<55.0	D	21.3	C	21.8	C
11. Las Gallinas Avenue/Merrydale Road	<55.0	D	12.0	B	11.0	B
12. Merrydale Road/Civic Center Drive	--	F	22.3	C	24.4	C
13. Northgate Drive/Thorndale Drive	<35.0	D	0.6	A	0.5	A
Eastbound (Thorndale Drive) Approach	<35.0	D	15.7	C	18.0	C
14. Northgate Drive/El Faisan Drive	<35.0	D	1.1	A	2.7	A
Northbound (El Faisan Drive) Approach	<35.0	D	15.2	C	19.8	C
Southbound (Project Driveway) Approach	<35.0	D	--	-	17.4	C
15. Northgate Drive/Nova Albion Way	<35.0	D	5.1	A	6.3	A
Northbound (Nova Albion Way) Approach	<35.0	D	22.4	C	32.0	D
16. Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive	<55.0	D	10.5	B	11.0	B
17. Los Ranchitos Road/North San Pedro Road	<55.0	D	11.2	B	11.4	B

Source: *Transportation Operations Study for the Northgate Town Square Project* (W-Trans 2023).
[1] Per General Plan Policy M-2.5, signalized freeway ramp intersections are exempt from LOS standards.
LOS = level of service
sec = seconds
US-101 = United States Route 101

Table 4.9.K: Future Plus Phase 2 AM Peak Hour Intersection Levels of Service

Study Intersection &*Approach*	Standard		Future Conditions		Future Plus Vision Plan	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Manuel T. Freitas Parkway/Las Gallinas Avenue	<55.0	D	50.2	D	49.4	D
2. Manuel T. Freitas Parkway/Northgate Drive	<55.0	D	20.2	C	19.9	B
3. Manuel T. Freitas Parkway/Del Presidio Boulevard	--	Exempt[1]	8.5	A	8.1	A
4. Manuel T. Freitas Parkway/US-101 South Ramps	<35.0	D	0.0	A	0.0	A
5. Redwood Highway/US-101 North On-Ramp	<35.0	D	0.6	A	0.9	A
6. Manuel T. Freitas Parkway/US-101 North Ramps	<35.0	D	10.4	B	9.3	A
7. Manuel T. Freitas Parkway/Redwood Highway-Civic Center Drive	<55.0	E	6.1	A	6.8	A
Northbound (Civic Center Drive) Approach	<55.0	E	10.6	B	13.0	B
Southbound (Redwood Highway) Approach	<55.0	E	11.5	B	11.5	B
8. Las Gallinas Avenue/Nova Albion Way	<55.0	D	33.4	C	35.2	D
9. Las Gallinas Avenue/Northgate Drive	<55.0	D	14.7	B	16.0	B
10. Las Gallinas Avenue/Del Presidio Boulevard	<55.0	D	21.3	C	22.5	C
11. Las Gallinas Avenue/Merrydale Road	<55.0	D	12.0	B	14.5	B
12. Merrydale Road/Civic Center Drive	--	F	22.3	C	25.8	C
13. Northgate Drive/Thorndale Drive	<35.0	D	0.6	A	0.6	A
Eastbound (Thorndale Drive) Approach	<35.0	D	15.7	C	17.4	C
14. Northgate Drive/El Faisan Drive	<35.0	D	1.1	A	2.6	A
Northbound (El Faisan Drive) Approach	<35.0	D	15.2	C	18.7	C
Southbound (Project Driveway) Approach	<35.0	D	--	-	16.7	C
15. Northgate Drive/Nova Albion Way	<35.0	D	5.1	A	5.8	A
Northbound (Nova Albion Way) Approach	<35.0	D	22.4	C	28.8	D
16. Los Ranchitos Road-Las Gallinas Avenue/Northgate Drive	<55.0	D	10.5	B	10.6	B
17. Los Ranchitos Road/N San Pedro Road	<55.0	D	11.2	B	11.5	B

Source: *Transportation Operations Study for the Northgate Town Square Project* (W-Trans 2023).

1. Per General Plan Policy M-2.5, signalized freeway ramp intersections are exempt from LOS standards.

LOS = level of service

sec = seconds

US-101 = United States Route 101

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4.10 AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] In keeping with these guidelines, this section describes existing air quality, impacts of the proposed project on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TACs). Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate.

In addition to the references listed in this section, an Air Quality and Greenhouse Gas Emissions Technical Report[2] (AQ/GHG Technical Report) was prepared for the proposed project by the project sponsor's consultant. The AQ/GHG Technical Report was peer reviewed by LSA[3] and finalized by the project sponsor. The final report was utilized in the analysis provided in this section, and is provided in Appendix I.

4.10.1 Setting

The following discussion provides an overview of existing air quality conditions in the region and in the San Rafael area. Ambient Air Quality Standards (AAQS) and the regulatory framework are summarized and climate, air quality conditions, and typical air pollutant types and sources are also described.

4.10.1.1 Air Pollutants and Health Effects

Both State and federal governments have established health-based AAQS for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the project area are O_3 and suspended particulate matter. Significance thresholds established by an air district are used to manage total regional and local emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual development projects that would contribute to regional and local emissions and could adversely affect or delay the air basin's projected attainment target goals for nonattainment criteria pollutants.

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1 Bay Area Air Quality Management District (BAAQMD). 2023. *2022 California Environmental Quality Act Air Quality Guidelines*. April.

2 Dudek. 2023. *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report.* August.

3 LSA Associates, Inc. 2023. *Peer Review of the Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report and Energy Analysis Memorandum.* March.

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_X) and reactive organic gases (ROGs).

Further, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to individually result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, the air districts have considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. These populations are referred to as sensitive receptors.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in Table 4.10.A and are described in more detail below.

Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROGs and NO_X. The main sources of ROGs and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the San Francisco Bay Area (Bay Area), automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide. CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited; it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors

Table 4.10.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	• Precursor sources:[1] motor vehicles, industrial emissions, and consumer products.	• Respiratory symptoms. • Worsening of lung disease leading to premature death. • Damage to lung tissue. • Crop, forest, and ecosystem damage. • Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.
Particulate Matter Less than 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death. • Hospitalization for worsening of cardiovascular disease. • Hospitalization for respiratory disease. • Asthma-related emergency room visits. • Increased symptoms, increased inhaler usage.
Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM_{10})	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death and hospitalization, primarily for worsening of respiratory disease. • Reduced visibility and material soiling.
Nitrogen Oxides (NO_x)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Lung irritation. • Enhanced allergic responses.
Carbon Monoxide (CO)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Chest pain in patients with heart disease. • Headache. • Light-headedness. • Reduced mental alertness.
Sulfur Oxides (SO_X)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits.
Lead (Pb)	• Contaminated soil.	• Impaired mental functioning in children. • Learning disabilities in children. • Brain and kidney damage.
Toxic Air Contaminants (TACs)	• Cars and trucks (especially diesels). • Industrial sources, such as chrome platers. • Neighborhood businesses, such as dry cleaners and service stations. • Building materials and products.	• Cancer. • Reproductive and developmental effects. • Neurological effects.

Source: Common Air Pollutants (California Air Resources Board (2023).

[1] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

(e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in size and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates through tailpipe emissions as well as brake pad, tire wear, and entrained road dust. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children.[4] Statewide attainment of particulate matter standards could reduce premature deaths, hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and episodes of respiratory illness in California.

Nitrogen Dioxide. NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high-pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the United States Environmental Protection Agency (EPA) established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of EPA regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

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[4] California Air Resources Board (CARB). 2020. *Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10})*. Website: ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health (accessed August 2023).

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have AAQS, but are regulated by the EPA and CARB. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by the use of diesel-fueled engines.[5] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

The BAAQMD regulates TACs using a risk-based approach. This approach uses a Health Risk Assessment (HRA) to determine what sources and pollutants to control as well as the degree of control. An HRA is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances in order to provide a quantitative estimate of health risks.[6] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxic emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine the health risk to Bay Area residents.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for a substantial portion of the ambient background risk in the Bay Area.[7] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has also been reduced.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter (DPM) is emitted from mobile sources—primarily "off-road" sources such as

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5 California Air Resources Board (CARB) and California Air Pollution Control Officers Association (CAPCOA). 2015. *Risk Management Guidance for Stationary Sources of Air Toxics.* July 23. Website: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/rma/rmgssat.pdf (accessed August 2023).

6 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

7 Bay Area Air Quality Management District (BAAQMD). 2014. *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004–2013).* April. Website: https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en (accessed August 2023).

construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where DPM is emitted in the Bay Area include high-traffic roadways and other areas with substantial truck traffic.

The CARB Diesel Risk Reduction Plan is intended to substantially reduce DPM emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel—a step already implemented—and cleaner-burning diesel engines.[8] The technology for reducing DPM emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020, average Statewide DPM concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk from DPM is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from DPM decreased by a similar factor.

High-Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

4.10.1.2 National and State Ambient Air Quality Standards

Both the EPA and CARB have established AAQS for the following common pollutants: CO, O_3, NO_2, SO_2, Pb, and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection

[8] California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October. Prepared by the Stationary Source Division and Mobile Source Control Division. Website: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpfinal.pdf (accessed August 2023).

against decreased visibility, and damage to animals, crops, vegetation, and buildings.[9] State and federal standards for the criteria air pollutants are listed in Table 4.10.B.

4.10.1.3 Existing Climate and Air Quality

The following provides a discussion of the local and regional air quality and climate in the San Rafael area.

Regional and Local Air Quality. San Rafael is located in the northwestern region of the San Francisco Bay Area Air Basin (Air Basin), which is a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, which is a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

San Rafael is within the jurisdiction of the BAAQMD, which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national AAQS of the following chemicals have been violated in recent decades: NO_2, SO_2, sulfates, Pb, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards 2 of the last 3 years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Two meteorological factors affect air quality in San Rafael: wind and temperature. Winds affect the direction of transport of any air pollution emissions and wind also controls the volume of air into which pollution is mixed in a given period of time. While winds govern horizontal mixing processes, temperature inversions determine the vertical mixing depth of air pollutants.

[9] United States Environmental Protection Agency (EPA). 2017. Criteria Air Pollutants. October. Website: https://www.epa.gov/criteria-air-pollutants (accessed August 2023).

Table 4.10.B: National and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10}) [9]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$) [9]	24-Hour	–	–	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	–	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	–	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2) [10]	1-Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1-Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)[k]	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m³)	
	24-Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Lead [12,13]	30-Day Average	1.5 µg/m³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas) [12]	Same as Primary Standard	
	Rolling 3-Month Average [i]	–		0.15 µg/m³		
Visibility-Reducing Particles [14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: Ambient Air Quality Standards (California Air Resources Board 2016).

Table notes continued on the following page

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour national standard, the three-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[14] In 1989, the CARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million
EPA = United States Environmental Protection Agency

San Rafael is located in Marin County, which is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate, and on the north by the Petaluma Gap. Most of Marin's population lives in small, sheltered valleys in the eastern part of the county. These valleys act like a series of miniature air basins.

Although there are a few mountains above 1,500 feet, most of the terrain varies between 800 feet and 1,000 feet in elevation, which usually is not high enough to block the marine layer. Because of the wedge shape of Marin County, northeast Marin County is farther from the ocean than the southeastern section is. This extra distance from the ocean allows the marine air to be moderated by bayside conditions as it travels to northeastern Marin County. In southern Marin County, the distance to the ocean is short and elevations are lower, thereby resulting in higher incidence of maritime air in that area.

Wind speeds are highest along the west coast of Marin County, averaging about 8 to 10 miles per hour (mph). The complex terrain in central Marin creates sufficient friction to slow the air flow. At Hamilton Air Force Base, in Novato, the annual average wind speeds are only 5 mph. The prevailing wind directions throughout Marin County are generally from the northwest.

In the summer months, areas along the coast are usually subject to onshore movement of cool marine air. In the winter, proximity to the ocean keeps the coastal regions relatively warm, with temperatures varying little throughout the year. Coastal temperatures are usually in the high 50s in the winter and the low 60s in the summer. The warmest months are September and October. The eastern side of Marin County has warmer weather than the western side because of its distance from the ocean and because the hills that separate eastern Marin from western Marin occasionally block the flow of the marine air. The temperatures of cities next to San Francisco Bay, such as San Rafael, are moderated by the cooling effect of the Bay in the summer and the warming effect of the Bay in the winter.

Air pollution potential is highest in eastern Marin County, where most of the population is located in semi-sheltered valleys. In the southeast, the influence of marine air keeps pollution levels low. As development moves farther north, there is greater potential for air pollution to build up because the valleys are more sheltered from the sea breeze. While Marin County does not have many polluting industries, the air quality on its eastern side—especially along the United States Route 101 (US-101) corridor—may be affected by emissions from increasing motor vehicle use within and through Marin County.

Ozone and fine particle pollution (i.e., $PM_{2.5}$) are the major regional air pollutants of concern in the Bay Area. Ozone is primarily a problem in the summer, and $PM_{2.5}$ in the winter.[10] In Marin County, ozone rarely exceeds health standards, and $PM_{2.5}$ exceeds the national standard only about 1 day each year. Marin County frequently receives fresh marine air from the Pacific Ocean, which passes over the coastal hills. In winter, $PM_{2.5}$ may be transported into Marin County from other parts of the

[10] Bay Area Air Quality Management District (BAAQMD). 2023. Marin County. Website: https://www.baaqmd.gov/about-the-air-district/in-your-community/marin-county (accessed August 2023).

Bay Area, adding to wood smoke, which may lead to elevated concentrations, but these are rarely high enough to exceed health standards.[11]

Air Quality Monitoring Results. Air quality monitoring stations are located throughout the nation and maintained by the local Air Pollution Control District (APCD) and State air quality regulating agencies. Ambient air data collected at permanent monitoring stations are used by the EPA to identify regions as attainment or nonattainment depending on whether the regions met the requirements stated in the primary National Ambient Air Quality Standards (NAAQS). Attainment areas are required to maintain their status through moderate, yet effective, air quality maintenance plans. Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the State on a pollutant-by-pollutant basis. Different classifications have different mandated attainment dates and are used as guidelines to create air quality management strategies to improve air quality and comply with the NAAQS by the attainment date. A region is determined to be unclassified when the data collected from the air quality monitoring stations do not support a designation of attainment or nonattainment due to lack of information or a conclusion cannot be made with the available data. The San Francisco Bay Area Air Basin's attainment status for each criteria pollutant is listed in Table 4.10.C.

The CARB and EPA maintain ambient air quality monitoring stations within California.[12] BAAQMD's San Rafael monitoring station, located at 534 Fourth Street, San Rafael, California, approximately 2.4 miles southeast of the proposed project site, is the nearest air quality monitoring station to the proposed project site. The air quality trends from this station are used to represent the ambient air quality in the project area. Ambient air quality in the project area from 2019 to 2021 (the most recent available period), including the number of days exceeding the AAQS, is shown in Table 4.10.D. The data collected at this station is considered generally representative of the air quality experienced in the project vicinity. No SO_2 values are available for Marin County because SO_2 concentrations are historically low and not commonly monitored.

Pollutant monitoring results indicate that air quality in San Rafael has generally been good. As indicated in the monitoring results, 1-hour and 8-hour ozone concentrations exceeded the State standard once in 2019. The State PM_{10} standard was exceeded once and the federal 24-hour $PM_{2.5}$ standard was exceeded nine times in 2020. No SO_2 values are available for Marin County because SO_2 concentrations are historically low and are not commonly monitored. The CO and NO_2 standards were not exceeded in this area during the 3-year period.

[11] Bay Area Air Quality Management District (BAAQMD). 2023. Marin County. Website: https://www.baaqmd.gov/about-the-air-district/in-your-community/marin-county (accessed August 2023).

[12] CARB gathers ambient air quality data for the State of California and ensures the quality of these data. CARB provides ambient air quality monitoring sites throughout California's counties and air basins.

Table 4.10.C: San Francisco Bay Area Basin Attainment Status

Pollutant	Averaging Time	California Standards [1]		National Standards [2]	
		Concentration	Attainment Status	Concentration [3]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137 µg/m³)	Nonattainment [9]	0.070 ppm	Nonattainment [4]
	1-Hour	0.09 ppm (180 µg/m³)	Nonattainment	Not Applicable	See Footnote 5.
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Attainment [6]
	1-Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m³)	Attainment	0.100 ppm [11]	See Footnote 11.
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	Not Applicable	0.053 ppm (100 µg/m³)	Attainment
Sulfur Dioxide (SO_2) [12]	24-Hour	0.04 ppm (105 µg/m³)	Attainment	0.14 ppm (365 µg/m³)	See Footnote 12.
	1-Hour	0.25 ppm (655 µg/m³)	Attainment	0.075 ppm (196 µg/m³)	See Footnote 12.
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m³)	See Footnote 12.
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m³	Nonattainment [7]	Not Applicable	Not Applicable
	24-Hour	50 µg/m³	Nonattainment	150 µg/m³	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	Nonattainment [7]	12 µg/m³ [15]	Unclassified/ Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m³ [10]	Nonattainment
Sulfates	24-Hour	25 µg/m³	Attainment	Not Applicable	Not Applicable
Lead (Pb) [13]	30-Day Average	1.5 µg/m³	Not Applicable	Not Applicable	Attainment
	Calendar Quarter	Not Applicable	Not Applicable	1.5 µg/m³	Attainment
	Rolling 3-Month Average [14]	Not Applicable	Not Applicable	0.15 µg/m³	See Footnote 14.
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Unclassified	Not Applicable	Not Applicable
Vinyl Chloride (chloroethene)	24-Hour	0.010 ppm (26 µg/m³)	No Information Available	Not Applicable	Not Applicable
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	See Footnote 8.	Unclassified	Not Applicable	Not Applicable

Source: Air Quality Standards and Attainment Status (Bay Area Air Quality Management District 2017).

Table notes continued on the following page

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

[2] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$.

Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the three-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the three-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[3] National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

[4] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over 3 years, is equal to or less than 0.070 ppm. The EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

[5] The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.

[6] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

[7] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[8] Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

[9] The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005, and became effective on May 17, 2006.

[10] On January 9, 2013, the EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continue to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to the EPA and the EPA approves the proposed redesignation.

[11] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). The EPA expects to make a designation for the Bay Area by the end of 2017.

[12] On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030-ppm annual and 0.14-ppm 24-hour SO_2 NAAQS, however, must continue to be used until 1 year following EPA initial designations of the new 1-hour SO_2 NAAQS. The EPA expects to make designation for the Bay Area by the end of 2017.

[13] The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure below which there are no adverse health effects determined.

[14] National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

[15] In December 2012, the EPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

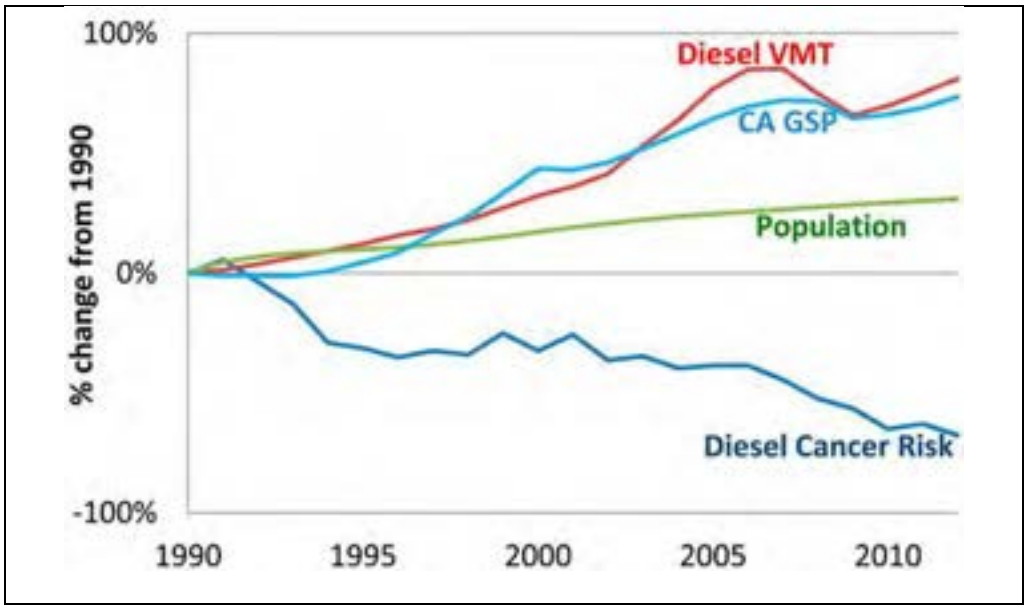
$\mu g/m^3$ = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
ppm = parts per million
EPA = United States Environmental Protection Agency

Table 4.10.D: Ambient Air Quality at the 534 Fourth Street, San Rafael Monitoring Station

Pollutant	Standard	2019	2020	2021
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.4	2.1	1.2
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.9	1.6	0.8
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.096	0.086	0.082
Number of days exceeded:	State: > 0.09 ppm	1	0	0
Maximum 8-hour concentration (ppm)		0.081	0.064	0.066
Number of days exceeded:	State: > 0.07 ppm	1	0	0
	Federal: > 0.07 ppm	1	0	0
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m³)		33.0	118.0	30.0
Number of days exceeded:	State: > 50 µg/m³	ND	1	0
	Federal: > 150 µg/m³	0	0	0
Annual arithmetic average concentration (µg/m³)		ND	16.6	14.7
Exceeded for the year:	State: > 20 µg/m³	ND	No	No
	Federal: > 50 µg/m³	ND	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m³)		19.5	155.5	29.1
Number of days exceeded:	Federal: > 35 µg/m³	0	9	0
Annual arithmetic average concentration (µg/m³)		6.3	8.7	7.0
Exceeded for the year:	State: > 12 µg/m³	No	No	No
	Federal: > 15 µg/m³	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.049	0.042	0.037
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.008	0.007	0.006
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No

Source 1: *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).
Source 2: iADAM: Air Quality Data Statistics (CARB 2022).
Source 3: Outdoor Air Quality Data (EPA 2023).
Notes: All data measured at the San Rafael monitoring station, located at 534 Fourth Street, San Rafael, California.
µg/m³ = micrograms per cubic meter
CARB = California Air Resources Board
EPA = United States Environmental Protection Agency
ND = No data. There were insufficient (or no) data results to determine the value.
ppm = parts per million

Toxic Air Contaminant Trends. In 1984, the CARB adopted regulations to reduce TAC emissions from mobile and stationary sources as well as consumer products. A CARB study showed that ambient concentrations and emissions of the seven TACs responsible for the most cancer risk from airborne exposure declined by 76 percent between 1990 and 2012.[13] Concentrations of DPM, a key TAC, declined by 68 percent between 1990 and 2012, despite a 31 percent increase in State population and an 81 percent increase in diesel vehicle miles traveled (VMT), as shown on **Error! Reference s ource not found.**. The study also found that the significant reductions in cancer risk to California residents from the implementation of air toxics controls are likely to continue.



Source: Ambient and Emission Trends of Toxic Air Contaminants in California (Propper, Ralph, et al. 2015).

Figure 4.10-1: California Population, Gross State Product (GSP), Diesel Cancer Risk, and Diesel Vehicle Miles Traveled (VMT) Regulatory Context

The EPA and CARB regulate direct emissions from motor vehicles. The BAAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development) as well as monitoring ambient pollutant concentrations.

4.10.1.4 Regulatory Framework

The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. BAAQMD jurisdiction encompasses seven counties

[13] Propper, Ralph, et al. 2015. Ambient and Emission Trends of Toxic Air Contaminants in California. *American Chemical Society: Environmental Science & Technology*. Website: pubs.acs.org/doi/full/10.1021/acs.est.5b02766 (accessed August 2023).

(i.e., Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa) and portions of Solano and Sonoma Counties. The EPA and CARB regulate direct emissions from motor vehicles.

The applicable federal, State, regional, and local regulatory framework is discussed below.

Federal Regulations. At the federal level, the EPA has been charged with implementing national air quality programs. EPA air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required the EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAA and determine whether implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The EPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness, and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the EPA on suspected hazardous pollutants prior to regulatory development.

State Regulations. The CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources and provides districts with the authority to regulate indirect sources.

The CARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The CARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. The CARB combines the data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by APCDs and Air Quality Management Districts [AQMDs]), establishing CAAQS (which are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The CARB Diesel Risk Reduction Plan is intended to substantially reduce DPM

emissions and associated health risks through the introduction of ultra-low-sulfur diesel fuel—a step that has already been implemented—and cleaner-burning diesel engines.[14]

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB also created guidance for avoiding air quality conflicts in land use planning in its *Air Quality and Land Use Handbook: A Community Health Perspective*.[15] In its guidance, the CARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

The CARB guidance suggests that the use of these guidelines be customized for individual land use decisions and take into account the context of proposed development projects. The *Air Quality and Land Use Handbook* specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

Regional Regulations. The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of AAQS, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan. The Clean Air Plan guides the region's air quality planning efforts to attain the CAAQS.[16] The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan that contains district-wide control measures to reduce ozone precursor emissions (e.g., ROGs and NO_X), particulate matter and greenhouse gas (GHG) emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;

[14] California Air Resources Board (CARB). 2000. *Diesel Risk Reduction Plan.* September.

[15] California Environmental Protection Agency (CalEPA) and California Air Resources Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April. Website: https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf (accessed August 2023).

[16] Bay Area Air Quality Management District (BAAQMD). 2017. *Final 2017 Clean Air Plan*. April 19. Website: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed August 2023).

- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;

- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and

- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents (e.g., particulate matter, O_3, and TACs); to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide (CO_2) by reducing fossil fuel combustion.

BAAQMD Regulations. A program of rules and regulations are administered by the BAAQMD to attain and maintain the CAAQS, NAAQS, and regulations related to TACs. Rules and regulations that would apply to the proposed project would include the following:

- **Regulation 2, Rule 1 – Permits:** This rule specifies the requirements for authorities to construct and permits.

- **Regulation 6, Rule 1 – General Requirements:** This rule limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.

- **Regulation 6, Rule 3 – Wood-Burning Devices:** This rule limits the emissions of particulate matter and visible emissions from wood-burning devices used for primary heat, supplemental heat, or ambiance.

- **Regulation 6, Rule 6 – Prohibition of Trackout:** This rule addresses fugitive road dust emissions associated with trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sites (sites of 1 acre or more).

- **Regulation 8, Rule 1 – General Provisions:** This rule limits the emission of organic compounds into the atmosphere.

- **Regulation 8, Rule 3 – Architectural Coatings:** This rule limits the quantity of volatile organic compounds (VOCs) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAQMD.

- **Regulation 8, Rule 15 – Emulsified and Liquid Asphalts:** This rule limits the emissions of VOCs caused by the use of emulsified and liquid asphalt in paving materials and paving and maintenance operations.

- **Regulation 11, Rule 2 – Asbestos Demolition, Renovation, and Manufacturing:** This rule controls emissions of asbestos during demolition, renovation, and manufacturing and establishes waste disposal procedures.

BAAQMD CARE Program. The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an ongoing program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach. This approach uses an HRA to determine what sources and pollutants to control as well as the degree of control. An HRA is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances in order to provide a quantitative estimate of health risks.[17] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. The BAAQMD has identified seven impacted communities;[18] San Rafael has not been identified as an affected community.[19]

BAAQMD CEQA Air Quality Guidelines. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In April 2023, the BAAQMD published an updated version of the CEQA Air Quality Guidelines. The BAAQMD CEQA Air Quality Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective

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17 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

18 The seven impacted communities include Richmond/San Pablo and eastern San Francisco, including Treasure Island, San Jose, western Alameda County, Concord, Vallejo, and Pittsburg/Antioch.

19 Bay Area Air Quality Management District (BAAQMD). 2014. *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area Version 2*. March. Website: www.baaqmd.gov/~/media/ Files/Planning% 20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_ Methodology.ashx?la=en (accessed August 2023).

thresholds are appropriate in the context of the size, scale, and location of the proposed project.[20]

City of San Rafael. The City of San Rafael addresses air quality in multiple chapters of the General Plan 2040,[21] which was adopted in 2021. The Conservation and Climate Change Element is the most applicable chapter of the City's General Plan, with additional goals and policies that affect air quality contained in the Land Use Element and the Mobility Element. The following policies are applicable to the proposed project:

> **Policy C-2.1: State and Federal Air Quality Standards.** Continue to comply with state and federal air quality standards.
>
> **Policy C-2.2: Land Use Compatibility and Building Standards.** Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
>
> **Policy C-2.3: Improving Air Quality Through Land Use and Transportation Choices.** Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, reduce vehicle idling, and support the shift to electric and cleaner-fuel vehicles.
>
> **Policy C-2.4: Particulate Matter Pollution Reduction.** Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
>
> **Policy C-2.5: Indoor Air Pollutants.** Reduce exposure to indoor air pollutants such as mold, lead, and asbestos through the application of state building standards, code enforcement activities, education, and remediation measures.
>
> **Policy C-2.6: Education and Outreach.** Support public education regarding air pollution prevention and mitigation.
>
> **Policy M-3.1: VMT Reduction.** Achieve State-mandated reductions in Vehicle Miles Traveled [VMT] by requiring development and transportation projects to meet specific VMT metrics and implement VMT reduction measures.
>
> **Policy M-3.3: Transportation Demand Management.** Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, flexible work

[20] Bay Area Air Quality Management District (BAAQMD). 2023. *2022 CEQA Guidelines.* Website: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines (accessed August 2023).

[21] City of San Rafael. 2021. *General Plan 2040.* August. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

Policy M-3.4: Reducing Commute Lengths. Support reduced commute lengths and frequency by encouraging a) hiring of local residents by San Rafael employers; b) opportunities for persons who work in San Rafael to live in San Rafael; c) telecommuting and flexible work arrangements; and d) local-serving shopping, restaurants, and services that reduce the need to drive elsewhere.

Policy M-3.5: Alternative Transportation Modes. Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.

Policy M-3.6: Low-Carbon Transportation. Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.

Policy M-3.7: Design Features that Support Transit. For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.

Policy M-3.8: Land Use and VMT. Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

Policy M-5.1: Traffic Calming. Protect residential areas from the effects of speeding traffic or traffic from outside the neighborhood through appropriate traffic calming solutions such as speed humps, bulb-outs, speed limits, stop signs, and chicanes. Traffic calming measures shall not conflict with emergency response capabilities.

Policy M-5.3: Connected Neighborhoods. Identify opportunities to better connect San Rafael neighborhoods to one another and to improve access to local destinations such as schools, shopping, and workplaces. Consider such connections as part of emergency response and evacuation planning.

Policy M-5.6: Truck Impacts. Manage truck traffic and deliveries in residential areas to avoid conflicts with local auto traffic, pedestrian and bicycle safety, parking, and adjacent uses, and to minimize air pollution in residential areas.

Policy M-6.1: Encouraging Walking and Cycling. Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips, such as trips to school, parks, transit stops, and neighborhood services. Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, public stairways, paths, and sidewalks should be part of San Rafael's identity.

Policy M-6.3: Connectivity. Develop pedestrian and bicycle networks that connect residents and visitors to major activity and shopping centers, existing and planned transit, schools, and other neighborhoods. Work to close gaps between existing facilities. Funding and prioritization for projects should consider relative costs and benefits, including such factors as safety, number of potential users, and impacts on parking.

Policy M-7.8: Parking for Alternative Modes of Transportation. Designate parking spaces to incentivize and encourage carpooling, electric vehicles, and other more sustainable modes of travel.

Policy M-7.9: Parking for Transit Users. Support regional efforts to fund and construct commuter parking along transit routes, near commuter bus pads, and near inter-modal commuter hubs in order to support use of transit. Parking areas should include secure parking for carpools, bicycles and other alternative modes and should minimize neighborhood impacts.

Policy LU-2.13: Odor Impacts. Consider odor impacts when evaluating land uses and development projects near wastewater treatment plants, treatment plant expansion projects, waste transfer stations, and other odor potential sources.

4.10.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to air quality that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

4.10.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to air quality if it would:

Threshold 4.10.1: Conflict with or obstruct implementation of the San Francisco Bay Area Clean Air Plan by:

- Not supporting the primary goals of the plan by resulting in a significant unavoidable air quality impact;
- Failure to include applicable control measures from the plan; or
- Disrupting or hindering implementation of any applicable control measure outlined in the plan.

Threshold 4.10.2: Result in a cumulatively considerable impact related to the net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.

- According to the BAAQMD CEQA Guidelines, to meet air quality standards for criteria air pollutant and air precursor impacts, the proposed project must not:
    - Generate average daily construction emissions of ROGs, NO_X or $PM_{2.5}$ (exhaust) greater than 54 lbs/day or PM_{10} exhaust emissions greater than 82 lbs/day; or

- Generate operational emissions of ROGs, NO_X or $PM_{2.5}$ of greater than 10 tons/yr or 54 lbs/day or PM_{10} emissions greater than 15 tons/yr or 82 lbs/day.

Threshold 4.10.3: Expose sensitive receptors to substantial pollutant concentrations as follows:

- Carbon Monoxide (CO) Hot Spot:
  - Create a new or contribute to an existing CO hot spot (9.0 ppm [8-hour average], 20.0 ppm [1-hour average]);
- Local Community Risk:
  - Be subject to but not comply with a qualified risk reduction plan;
  - Result in an excess cancer risk level of more than 10 in 1 million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 within a 1,000-foot radius; or
  - Result in an incremental increase of greater than 0.3 $\mu g/m^3$ annual average $PM_{2.5}$ within a 1,000-foot radius.

Threshold 4.10.4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.10.2.2 Project Impacts

The following section discusses the potential air quality impacts associated with implementation of the proposed project.

As discussed in Chapter 3.0, Project Description, the proposed project includes demolition of most buildings in the existing Northgate Mall, and the construction and operation of a mix of commercial and residential land uses at the proposed project site. The proposed development would occur in two phases. The buildout of Phase 1 would include the demolition of approximately 308,946 square feet of existing commercial space, construction of approximately 44,380 square feet of new commercial space and up to 922 residential units, and would be completed by 2025. Buildout of Phase 2 is expected to occur by 2040, and would include the demolition of approximately 339,861 square feet of existing commercial space, and construction of up to 55,440 square feet of commercial space and up to 500 additional residential units. At full buildout, the proposed project would include a total of up to approximately 217,520 square feet of commercial space and up to

1,422 residential units in six buildings (1,746,936 square feet of residential area).[22] The potential impacts that would occur with implementation of Phase 1 (2025 Master Plan) and Phase 2 (2040 Vision Plan) are differentiated by phase in this section.

Threshold 4.10.1: Conflict with the Air Quality Plan. The applicable air quality plan is the BAAQMD's 2017 Bay Area Clean Air Plan (Clean Air Plan).[23] The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if a project: (1) supports the goals of the Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan. The following is an evaluation of the proposed project's consistency with each of these criteria. As discussed below, the proposed project could conflict with the Clean Air Plan control measures or the Clean Air Plan goals for attainment. Therefore, this impact would be potentially significant.

Impact AIR-1 The proposed project could conflict with implementation of the San Francisco Bay Area Clean Air Plan. (S)

Clean Air Plan Goals. The primary goals of the Clean Air Plan are to: (a) attain air quality standards, (b) reduce population exposure and protect public health in the Bay Area, and (c) reduce GHG emissions and protect the climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed in more detail in the analysis below, with implementation of Mitigation Measure AIR-2, the project would result in less than significant construction-period emissions. Operation of Phase 1 of the project would increase ROG and NO_x emissions compared to existing conditions but these impacts would be reduced to a less than significant level with implementation of Mitigation Measures AIR 3a and 3b. Upon completion of Phase 2, the project's ROG emissions, like all other emissions, would be reduced compared to existing conditions, and the operational emissions would be below

[22] Since completion of the AQ/GHG Technical Report, the project plans have been refined from 498,661 square feet of commercial area during Phase 1 and a total of 225,100 square feet of commercial area at project buildout (implementation through Phase 2). This minor increase in Phase 1 square footage and decrease in buildout square footage would be negligible and would not substantially change the analysis or conclusions presented in the AQ/GHG Technical Report. Furthermore, the modeling in the AQ/GHG Technical Report assumed that 2,167 cubic yards of soil would be imported to the site during construction; however, this import is no longer required. Therefore, the estimated construction emissions for the proposed project would be reduced compared to what is shown in this EIR due to the reduced number of truck haul trips.

[23] Bay Area Air Quality Management District (BAAQMD). 2017. *Final 2017 Clean Air Plan*. April 19. Website: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed August 2023).

applicable BAAQMD thresholds of significance. Therefore, the project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures.The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Control Measures, Energy Control Measures, Building Control Measures, Agriculture Control Measures, Natural and Working Lands Control Measures, Waste Management Control Measures, Water Control Measures, and Super GHG Control Measures. The proposed project's consistency with each of these strategies is discussed below.

- **Stationary Source Control Measures:** The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by BAAQMD Permit and Inspection programs. The proposed project would comply with the rules and regulations promulgated by the BAAQMD with regard to stationary sources, as applicable. This includes the control of asbestos being potentially released into the atmosphere through compliance with BAAQMD Regulation 11-2, as further discussed in Section 4.8, Hazards and Hazardous Materials, of this Environmental Impact Report (EIR). Therefore, the proposed project would be consistent with these control measures.

- **Transportation Control Measures:** The BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, TACs, and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would result in the development of uses and growth that are consistent with the City of San Rafael's (City's) General Plan and zoning designations. The proposed project includes multiple improvements and site-related features that would result in a reduction in vehicle trips and associated emissions, including new multimodal pathways that would be integrated throughout the interior of the site; bike lanes and enhanced gateway features that would invite community members into the site; a locally inspired Cycle Center that is programmed for Marin County bicycle enthusiasts as well as the broader community; and contributions to access to and from the nearby Civic Center Sonoma-Marin Area Rail Transit (SMART) station from the new Northgate Town Square, which would serve as an amenity for the public. As part of its application, the project sponsor proposes to contribute financially to the City's implementation of these off-site improvements to finalize the connection to Northgate and other adjacent properties. The proposed project would achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2 Voluntary Standards. Currently, these standards require that a project with 201 or more parking spaces provide 45 percent of total parking spaces as EV-capable spaces, and 33 percent of the EV-capable spaces (meaning 15 percent of total parking spaces) as EV charging stations. Through the implementation of these project design features, the proposed project would be consistent with the BAAQMD Transportation Control Measures.

- **Energy Control Measures:** The Clean Air Plan also includes Energy Control Measures that are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the proposed project would incorporate energy measures such as energy efficient windows, additional insulation, external and internal shade structures, light emitting diode (LED) lighting, daylighting and occupancy controls, efficient space heating and cooling systems, and on-site renewable energy (solar panels) and battery storage of solar energy. In addition, the proposed project would reduce the demand for utilities and infrastructure by incorporating drought-tolerant, non-invasive plants, efficient irrigation, and low-flow fixtures. Therefore, the proposed project would comply with applicable Energy Control Measures.

- **Building Control Measures:** The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes to facilitate adoption of the best GHG control practices and policies. Therefore, the Building Control Measures of the Clean Air Plan are not applicable to the proposed project. However, as discussed above, the project would incorporate energy measures such as energy-efficient windows, additional insulation, external and internal shade structures, LED lighting, daylighting and occupancy controls, efficient space heating and cooling systems, and on-site renewable energy and energy storage. As such, the proposed project would not conflict with the goals of these measures.

- **Agriculture Control Measures:** The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the project.

- **Natural and Working Lands Control Measures:** The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the proposed project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the project.

- **Waste Management Control Measures:** The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

- **Water Control Measures:** The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

- **Super GHG Control Measures:** Super GHGs include GHGs with very high global warming potential, such as methane, black carbon, and fluorinated gases. The Super GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super GHG Control Measures are not applicable to the proposed project.

Clean Air Plan Implementation. As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. The project would also not disrupt or hinder implementation of any of the Clean Air Plan measures. As described under Threshold 4.10.2 below, construction of the proposed project would generate potentially significant emissions of NO_x and ROG, which would be less than significant after the implementation of standard mitigation required by the BAAQMD (Mitigation Measure AIR-2a and 2b). Operation of the project would result in a less than significant air quality impact. Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan, and this impact would be **less than significant with mitigation.**

Threshold 4.10.2: Net Increase of Criteria Pollutants. The Air Basin is currently designated as a nonattainment area for State and national ozone standards and national particulate matter AAQS. The nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to individually result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing or projected cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The following sections describe the proposed project's construction- and operation-related air quality impacts.

Construction Emissions. During construction of the proposed project, short-term degradation of air quality may occur due to the release of particulate matter emissions (e.g., fugitive dust) generated by demolition, grading, hauling, and other activities. Emissions from construction

equipment are also anticipated and would include CO, NO_X, ROGs, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as DPM. This is a potentially significant impact.

Impact AIR-2 Construction of the proposed project would generate fugitive dust ($PM_{2.5}$ and PM_{10}) emissions. (S)

Site preparation and project construction would involve demolition, grading, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include demolition activities and disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts. Therefore, in order to reduce construction $PM_{2.5}$ and PM_{10} fugitive dust impacts to a less than significant level, the BAAQMD requires the implementation of BAAQMD Basic Construction Mitigation Measures. Mitigation Measure AIR-2, below, would be required for all phases of project construction and would require implementation of dust controls during project construction. This measure would reduce construction-related air quality impacts of PM_{10} and $PM_{2.5}$ and fugitive dust emissions, consistent with BAAQMD Basic Construction Mitigation Measures.

Mitigation Measure AIR-2 **BAAQMD Basic Construction Mitigation Measures.** In order to meet the Bay Area Air Quality Management District (BAAQMD) fugitive dust threshold, the following BAAQMD Basic Construction (Best Management Practice) Mitigation Measures shall be implemented for all phases of construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by California Code of Regulations [CCR] Title 13, Section 2485, the California Airborne Toxic Control Measure). Clear signage shall be provided for construction workers at all access points.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at the City of San Rafael regarding dust complaints, and the City staff person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. (LTS)

The measures described under Mitigation Measure AIR-2 would implement the BAAQMD's Best Management Practices (BMPs) for construction-related fugitive dust emissions that are applicable to all construction projects throughout the Air Basin. These measures would ensure that short-term impacts associated with the generation of particulate matter and fugitive dust would be reduced to the extent feasible and would ensure that this impact would be **less than significant with mitigation**.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_X, ROGs, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

In the analysis presented in the AQ/GHG Technical Report prepared for the proposed project, construction emissions were estimated for the project using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.16, consistent with BAAQMD recommendations. As stated in Chapter 3.0, Project Description, the proposed project would include demolition of a cumulative total of approximately 648,807 square feet of commercial space and the construction of a combined total of 1,964,456 square feet of commercial and new residential use, which would occur in two phases. For emissions modeling purposes, in the AQ/GHG Technical Report, the construction of Phase 1 and Phase 2 was modeled at the parcel/area level to reflect anticipated construction activities. The assumptions included in the emissions modeling for each phase is further detailed in the AQ/GHG Technical Report (Appendix I of this EIR).

For purposes of estimating project emissions, and based on information provided by the project sponsor, the analysis included in the AQ/GHG Technical Report assumed that construction of Phase 1 would commence in January 2024 and would last approximately 19 months, ending in July 2025, with simultaneous demolition of the residential and retail land uses assumed in the modeling. As shown in the AQ/GHG Technical Report, phasing for project construction, including phase type, duration, sequencing, and equipment, were primarily based on default CalEEMod values (please see Table 5-12 of the AQ/GHG Technical Report, included in Appendix I, for the assumed project construction schedule for Phase 1 buildout).

To provide a conservative analysis, it was assumed that construction of Phase 2 would commence in January 2030 and would last approximately 16 months, ending in April 2031 at the earliest, although buildout of this phase could occur over a longer period and extend to 2040. It should be noted that this is a conservative schedule, and that if construction was to occur over a longer period, the emissions impact would be reduced given that generation of construction emissions would be less concentrated and spread over a longer duration. Furthermore, if construction was to occur at a later date than the time frames included in this analysis, emissions would similarly decrease due to advances in technology and regulatory requirements that would reduce emissions from construction equipment and truck fleets.

The AQ/GHG Technical Report notes that the construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values, and information provided by the project sponsor where project specifics were known. The City has reviewed the proposed project information provided by the project sponsor and accepted the assumptions as reasonable. Construction-related emissions are presented in Table 4.19.E. CalEEMod output sheets are included as Appendix A to the AQ/GHG Technical Report. As discussed below, construction of the proposed project would generate emissions that could violate air quality standards without the implementation of mitigation measures. The estimated emissions related to the construction of each residential and retail component of the proposed project, including all anticipated construction activity phases (demolition, site preparation, grading, building constriction, paving, and architectural coating), are provided in Table 4.10.E for Phases 1 and 2.

Table 4.10.E: Project Construction Emissions By Project Phase (lbs/day)

Project Construction Phase	ROGs	NO_X	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Phase 1				
Residential 1	7.09	9.76	0.36	0.33
Residential 2	8.39	14.02	0.58	0.54
Residential 3	18.58	13.82	0.50	0.46
Residential 4	27.30	16.07	0.56	0.51
Retail	5.29	26.04	1.06	0.98
Total	**66.66**	**79.70**	**3.06**	**2.82**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**Yes**	**Yes**	**No**	**No**
Phase 2				
Residential 5	15.50	12.03	0.34	0.32
Residential 6	19.41	11.13	0.26	0.25
Retail	1.64	8.69	0.25	0.23
Total	**36.56**	**31.85**	**0.85**	**0.79**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report (Dudek 2023).
Note: The values shown are average daily emissions based on total overall tons of construction emissions, converted to pounds, and divided by the estimated active workdays. Please reference Tables 5 through 12 of the Technical Report for construction schedule assumptions by phase.
BAAQMD = Bay Area Air Quality Management District
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROGs = reactive organic gases

Phase 1 Impacts. As shown in Table 4.10.E, construction of the project under Phase 1 would not exceed BAAQMD significance thresholds for PM_{10} exhaust and $PM_{2.5}$ exhaust; however, construction of the project would exceed BAAQMD significance thresholds for ROGs and NO_X.

Impact AIR-3 Construction of Phase 1 would generate ROG and NO_X emissions in excess of thresholds established by the BAAQMD, resulting in a violation of air quality standards. (S)

As shown in Table 4.10.E, without mitigation, construction of Phase 1 of the proposed project would exceed the BAAQMD's established significance thresholds for ROGs and NO_X by 12.66 and 25.7 pounds per day (lbs/day), respectively. Mitigation would be required to reduce these emission levels to below the established thresholds of 54 lbs/day.

Mitigation Measure AIR-3a: **Phase 1 Construction Equipment Requirements.** Prior to the commencement of Phase 1 construction activities, the project sponsor shall require its construction contractor to demonstrate that all 75 HP or greater diesel-powered equipment are powered with California Air Resources Board (CARB)-certified Tier 4 Final engines.

An exemption from this requirement may be granted by the City of San Rafael (City) if: (1) the project sponsor documents that equipment with Tier 4 Final engines are not reasonably available; and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the project from other combinations of construction equipment.

Before an exemption may be granted, the project sponsor's construction contractor shall (1) demonstrate that at least two construction fleet owners/operators in Marin County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Marin County during the desired construction schedule; and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod) or another industry-standard emission estimation method and the documentation provided to the City to confirm that necessary project-generated emissions reductions are achieved.

Mitigation Measure AIR-3b: **Phase 1 Architectural Coatings and Interior Paints.** To address the impact relative to reactive organic gas (ROG) emissions during Phase 1 construction, all interior paints and other architectural coatings shall be limited to 50 grams per liter or less of volatile organic compounds (VOCs). The project sponsor's construction contractor shall procure architectural coatings from a supplier in compliance with the requirements of BAAQMD Regulation 8, Rule 3 (Architectural Coatings). (LTS)

Mitigation Measure AIR-3a requires the use of Tier 4 Final engines to be utilized during operation of construction equipment and would be required to reduce NO_X emissions from construction activities to a less than significant level. Additionally, Mitigation Measure AIR-3b requires that interior paints and other architectural coatings be low-VOC coatings, limited to 50 grams per liter or less of VOCs, and this measure would be required to reduce the impact of ROG emissions (which are primarily generated by architectural coating activities) during Phase 1 construction.

Table 4.10.F presents estimated mitigated average daily construction emissions for Phase 1, with implementation of Mitigation Measure AIR-3a, which requires Tier 4 Final engines in equipment over 75 HP to reduce NO_X emissions, and implementation of Mitigation Measure AIR-3b, which requires limits on architectural coatings to reduce ROG emissions.

Table 4.10.F: Mitigated Project Construction Emissions for Phase 1 Construction (lbs/day)

Project Construction	ROGs	NO_X	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Phase 1				
Residential 1	4.83	5.73	0.18	0.17
Residential 2	5.22	3.91	0.11	0.11
Residential 3	10.47	5.03	0.11	0.10
Residential 4	17.15	6.68	0.13	0.12
Retail	2.09	5.19	0.15	0.14
Total	**39.76**	**26.54**	**0.68**	**0.64**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).
Note: The values shown are average daily emissions based on total overall tons of construction emissions, converted to pounds, and divided by the estimated active workdays. Please reference Tables 5 through 12 of the Technical Report for construction schedule assumptions by phase.
BAAQMD = Bay Area Air Quality Management District
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROGs = reactive organic gases

As shown in Table 4.10.F, with implementation of Mitigation Measures AIR-3a and AIR-3b, construction of the proposed project would reduce ROG and NO_X emissions to below the established thresholds. Therefore, with implementation of these mitigation measures, Phase 1 impacts related to a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard would be **less than significant with mitigation**. In addition, as shown in Table 4.10.E, construction-period PM_{10} and $PM_{2.5}$ exhaust emissions would be below established thresholds; however, implementation of Mitigation Measure AIR-2 is required for compliance with the Clean Air Plan but would also reduce these emissions by ensuring that construction vehicle idling times are limited and that construction equipment is properly maintained so as not to generate excess emissions.

Phase 2 Impacts. As shown in Table 4.10.E, construction of the project under Phase 2 would not exceed BAAQMD significance thresholds for ROGs, NO_X, PM_{10} exhaust, or $PM_{2.5}$ exhaust. Therefore, mitigation is not required to address an air quality violation during this phase of the project. Therefore, Phase 2 impacts related to a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under applicable NAAQS or CAAQS would be **less than significant**. Similar to Phase 1, implementation of Mitigation Measure AIR-2 would reduce construction-period PM_{10} and $PM_{2.5}$ exhaust emissions by ensuring that construction vehicle idling times are limited and that construction equipment is properly maintained so as not to generate excess emissions.

Operational Emissions. Long-term air pollutant emission impacts that would result from the proposed project are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other particulate matter emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems (e.g., heating and air conditioning, lighting) and plug-in electronics (e.g., refrigerators or computers). Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. As further discussed in the AQ/GHG Technical Report (Appendix I), trip generation rates used in CalEEMod for the project were based on the project's trip generation estimates included in Section 4.9, Transportation. It should be noted that the emissions modeling was conducted before the proposed project site plan was finalized, and so there are some slight differences between the model inputs and the project described in Chapter 3.0, Project Description. However, these discrepancies are generally overestimating the potential emissions that may occur from the proposed project and therefore present a conservative impact analysis. When project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions. Model results are shown in Tables 4.10.G and 4.10.H. CalEEMod output sheets are included as an appendix to the AQ/GHG Technical Report (provided in Appendix I of this EIR).

Table 4.10.G: Project Average Daily Operational Emissions (lbs/day)

Source	ROGs	NO_X	PM_{10}	$PM_{2.5}$
Existing Scenario				
Area Source Emissions	22.12	0.17	0.04	0.03
Energy Source Emissions	0.13	2.43	0.19	0.19
Mobile Source Emissions	93.03	69.58	110.60	28.67
Total Emissions	**115.29**	**72.19**	**110.82**	**28.88**
Proposed Project Phase 1 Operations				
Area Source Emissions	46.97	0.47	0.06	0.04
Energy Source Emissions	0.06	1.07	0.08	0.08
Mobile Source Emissions	72.44	51.82	98.07	25.36
Total Phase 1 Emissions	**119.47**	**53.35**	**98.21**	**25.49**
Proposed Project Phase 2 Operations				
Area Source Emissions	57.28	0.60	0.06	0.05
Energy Source Emissions	0.09	1.60	0.12	0.12
Mobile Source Emissions	46.84	35.09	68.19	17.63
Total Phase 2 Emissions	**104.22**	**37.29**	**68.37**	**17.80**
Net Emissions				
Year 2025 Net Change in Emissions (Phase 1 – Existing)	**4.18**	**(18.83)**	**(12.61)**	**(3.40)**
Year 2040 Full Project Buildout Emissions (Full Project Buildout – Existing)	**(11.07)**	**(34.89)**	**(42.45)**	**(11.08)**
BAAQMD Thresholds	*54.0*	*54.0*	*82.0*	*54.0*
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).
Note 1: Numbers in parentheses represent negative numbers.
Note 2: The values shown are from the CalEEMod average daily emissions output which calculates the emissions based on annual tons of operational emissions, converted to pounds, and divided by the estimated days per year (365 days).
Note 3: Totals may not sum due to rounding.
Note 4: Existing data is based on full occupancy of the mall.
BAAQMD = Bay Area Air Quality Management District
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROGs = reactive organic gases

Table 4.10.H: Project Annual Operational Emissions (tons/yr)

Source	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Scenario				
Area Source Emissions	4.04	0.03	0.01	0.00
Energy Source Emissions	0.02	0.44	0.03	0.03
Mobile Source Emissions	16.98	12.70	20.18	5.23
Total Emissions	**21.04**	**13.17**	**20.22**	**5.27**
Proposed Project Phase 1 Operations				
Area Source Emissions	8.57	0.09	0.01	0.01
Energy Source Emissions	0.01	0.19	0.01	0.01
Mobile Source Emissions	13.22	9.46	17.90	4.63
Total Emissions	**21.80**	**9.74**	**17.92**	**4.65**
Proposed Project Phase 2 Operations				
Area Source Emissions	10.45	0.11	0.01	0.01
Energy Source Emissions	0.02	0.29	0.02	0.02
Mobile Source Emissions	8.55	6.40	12.44	3.22
Total Emissions	**19.02**	**6.81**	**12.48**	**3.25**
Net Emissions				
Year 2025 Net Change in Emissions (Phase 1 – Existing)	**0.76**	**(3.44)**	**(2.30)**	**(0.62)**
Year 2040 Full Project Buildout Emissions (Full Project Buildout – Existing)	**(2.02)**	**(6.37)**	**(7.75)**	**(2.02)**
BAAQMD Thresholds	*10.0*	*10.0*	*15.0*	*10.0*
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).
Note 1: Numbers in parentheses represent negative numbers.
Note 2: Totals may not sum due to rounding.
Note 3: Existing data is based on full occupancy of the mall.
BAAQMD = Bay Area Air Quality Management District
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROG = reactive organic gases
tons/yr = tons per year

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project, emissions are released in other areas of the Air Basin. The daily and annual emissions associated with project operational trip generation, energy, and area sources are identified in Tables 4.10.G and 4.10.H. There would be a slight increase in ROG emissions, primarily associated with an increase of consumer products (e.g., hairsprays and cleaning products) that are assumed to occur with the proposed residential land uses at the project site when compared to the existing land uses, but there would be a net emission decrease for estimated emissions of other criteria pollutants. The results shown indicate the operational emissions from the project would not exceed the significance criteria for ROGs, NO_X, PM_{10}, or $PM_{2.5}$ emissions; therefore, operational impacts related to a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS would be **less than significant.**

Threshold 4.10.3: Substantial Pollutant Concentrations. In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the State and federal government as TACs or hazardous air pollutants.

TACs emitted during construction activities would be DPM emitted from heavy-duty construction equipment and heavy-duty trucks. Heavy-duty construction equipment and diesel trucks are subject to CARB Airborne Toxic Control Measures to reduce DPM emissions. A construction HRA was performed for the project to evaluate the risk from diesel exhaust emissions on existing proximate off-site sensitive receptors, as well as future on-site Phase 1 residents during Phase 2 construction.

Sensitive receptors are defined as residential uses, schools and school yards, daycare centers and preschools, nursing homes, parks and playgrounds, and medical centers. Individuals particularly vulnerable to DPM are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to DPM. Exposure to diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10 in 1 million, increased non-cancer risk of greater than 1.0 on the Hazard Index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). A significant cumulative impact would occur if the project in combination with other projects located within a 1,000-foot radius of the project site would expose sensitive receptors to TACs, resulting in an increased cancer risk greater than 100 in 1 million, an increased non-cancer risk of greater than 10.0 on the Hazard Index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

The project site is located in an urban area in close proximity to existing residential and school uses that could be exposed to diesel emission exhaust during the construction period. The closest sensitive receptors include:

- AlmaVia of San Rafael, which is an assisted living facility located approximately 95 feet south of the proposed project site;

- Single-family homes on Sao Augustine Way and Nova Albion Way (the nearest being approximately 90 feet south of the proposed project site);
- Quail Hill Townhouses on El Faisan Drive (the nearest being approximately 210 feet southwest of the proposed project site);
- Villa Marin on Thorndale Drive, located approximately 690 feet to the west of the proposed project site;
- Marin County Emergency Medical Services, located approximately 90 feet to the west of the proposed project site; and
- Multifamily residential apartment complexes along Las Gallinas Avenue and Nova Albion Way (the nearest being approximately 310 feet west of the proposed project site).

In addition to the existing proximate sensitive receptors described above, the proposed project would also introduce new sensitive residential receptors. During Phase 1, 922 residential units would be constructed that would introduce residential receptors as well as proposed open spaces that would introduce potential recreational receptors at parks/playgrounds as part of the proposed Town Square. These would be on-site sensitive receptors, which could potentially be exposed to adverse health risks due to the construction of Phase 2 of the proposed project, as further discussed below.

Construction Health Risk Assessment. As detailed in the AQ/GHG Technical Report prepared for the proposed project, to estimate the potential cancer risk from project construction equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location (i.e., a nearby residential land use). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology, with the air dispersion modeling performed using AERMOD, the EPA dispersion model. AERMOD provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data. Table 4.10.I identifies the results of the analysis utilizing the CalEEMod default of Tier 0 construction equipment. The full methodology for the HRA along with model snapshots are provided in the AQ/GHG Technical Report, which is included as Appendix I.

Table 4.10.I: Unmitigated Inhalation Health Risks from Project Construction

	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual (MEI) Off Site	11.58	0.0061	0	0.072
Phase 2 MEI On Site	7.09	0.0073	0	0.11
Threshold	**10**	**1**	**1**	**0.3**

Source: Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report (Dudek 2023).
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

As shown in Table 4.10.I, the risk associated with project construction for the maximally exposed individual (MEI) off site would be 11.58 in 1 million, which would exceed the BAAQMD cancer risk of 10 in 1 million. The total chronic Hazard Index would be 0.0061, which would not exceed the threshold of 1.0. In addition, the total acute Hazard Index would be 0.000, which would also not exceed the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.072 µg/m^3, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m^3.

For future on-site sensitive receptors, the risk associated with project construction at the on-site MEI would be 7.09 in 1 million, which would not exceed the BAAQMD cancer risk of 10 in 1 million. The total chronic hazard index would be 0.0073, which would not exceed the threshold of 1.0. In addition, the total acute Hazard Index would be 0.000, which would also not exceed the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.11 µg/m^3, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m^3. Therefore, there would be a less than significant risk to future (Phase 2) sensitive receptors on the project site.

Impact AIR-4 Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations through exceeding the carcinogenic inhalation health risk threshold. (S)

As indicated above, the cancer risk of 11.58 in 1 million would exceed BAAQMD thresholds. Therefore, implementation of Mitigation Measure AIR-4 would be required to reduce substantial pollutant concentrations during project construction.

Mitigation Measure AIR-4: **Construction Equipment Standards.** During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board (CARB) Tier 2 with level 3 diesel particulate filters emissions standards or equivalent, including Tier 4 Final engines.

Mitigation Measure AIR-4, which requires the use of (at a minimum) level 3 diesel particulate filters emissions standards or equivalent (including Tier 4 Final) engines on construction equipment, shall be implemented to reduce DPM during construction. Table 4.10.J summarizes the results of the HRA for project construction after mitigation.

As shown in Table 4.10.J, the mitigated cancer risk at the MEI would be 4.85 in 1 million, which would not exceed the BAAQMD cancer risk of 10 in 1 million. Therefore, with implementation of Mitigation Measure AIR-4, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. This impact would be **less than significant with mitigation.**

Table 4.10.J: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	4.85	0.0026	0.000	0.056
Threshold	**10.0**	**1.0**	**1.0**	**0.30**

Source: Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report (Dudek 2023).
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

Operational Emissions. Regarding long-term operations, based on the proposed land uses, the proposed project would not result in any long-term sources of TACs. Further, the proposed project would result in the demolition of existing uses on site that have permitted stationary sources (i.e., emergency diesel generators at the existing main mall building, Sears, Macy's, and Kohl's), which would reduce the generation and exposure of TACs in the vicinity of the proposed project site. Potential health risk impacts associated with operations of the proposed project would be **less than significant.**

Localized CO Impacts. Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the total VMT within the local airshed and the Air Basin. Locally, project-generated traffic would be added to San Rafael's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles that were cold started and operating at pollution-inefficient speeds, and operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the Air Basin is steadily decreasing.

Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The BAAQMD CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed development projects.

A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the potential impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less than significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the Transportation Authority of Marin (TAM) Congestion Management Program (CMP) for designated roads or highways, a Regional Transportation Plan (RTP), or other agency plans. The maximum estimated peak-hour traffic of 3,704 vehicles would be at the Manual T. Freitas Parkway and Del Presidio Boulevard intersection under the buildout scenario assessed in the traffic study for the proposed project.[24] As such, the project's contribution to peak-hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour (vph). Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards, and this impact would be less than significant.

Local Community Risk. Certain community members are more susceptible to poor air quality. These individuals, who are referred to as sensitive receptors, are typically children, the elderly, and those with pre-existing serious health problems. Per BAAQMD guidance, the risk and hazards thresholds of significance apply in determining whether a new source of pollution will result in unacceptable risks to the community. In some instances, they may also be applied to determine if there will be unacceptable risks to new receptors of air pollution (i.e., future users of a project, including future residents and workers).

As a part of the proposed project, new sensitive receptors (residences) would be located at the project site; therefore, a cumulative HRA was performed as a part of this analysis. As detailed in the AQ/GHG Technical Report for the proposed project, the cumulative HRA evaluated the potential risk to sensitive receptors due to exposure to TACs resulting from the proposed project, as well as from existing sources of emissions in the community. Unlike for a project-level assessment, for the cumulative assessment, the risks from all sources within 1,000 feet of future on-site sensitive receptors are summed and compared to a cumulative significance threshold.

The cumulative health risk for each proposed residential parcel was estimated based on proximity of the nearest parcel boundary with the existing sources of TACs. Maximum health risk levels from project construction were also summed with the health risk from existing sources of TACs for Residentials 1 through 4, since these parcels would be operating concurrently with the construction of Phase 2. The potential cumulative health risk levels for

[24] W-Trans. 2023. *Transportation Impact Study for the Northgate Town Square Project.* February.

each residential parcel are included in the AQ/GHG Technical Report (see Appendix I). Based on this analysis, the maximally exposed future residential receptors would be at Residential 4 (which is located on the eastern edge of the proposed project site) based primarily on proximity to the existing Macy's (emergency generator), US-101, and Phase 2 construction. As shown in Table 4.10.K, health impacts at these proposed sensitive receptors from all proximate sources would be below the BAAQMD cumulative thresholds for cancer risk, chronic health hazards, and $PM_{2.5}$ concentrations.

Table 4.10.K: Maximum Cumulative Health Impacts – On-Site Receptors

Source[1]	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Macy's West Stores Inc.	8.87	0.0046	0.012
Villa Marin Homeowners' Association	0.43	0.00067	0.00055
AlmaVia of San Rafael	0.29	0.00041	0.00037
Kohl's Department Store	0.076	0.000020	0.00019
Guide Dogs for the Blind Inc.	8.74	0.0023	0.011
The Pasha Group	0.011	0.000042	0.000013
Chevron Station	0.81	0.0036	—
Fuel 24:7 at Northgate	0.50	0.0022	—
Terra Linda 76	0.31	0.0013	—
Northgate Shell	0.44	0.0019	—
Gateway Gas One	0.36	0.0016	—
US-101	7.58	—[2]	0.17
Major Roadways	0.62	—[2]	0.01
Railroad	0.33	—[2]	0.0004
Future on-site residents during Phase 2 Construction	7.09	0.0073	0.1067
Total Cumulative Health Risk	**36.46**	**0.026**	**0.31**
BAAQMD Cumulative Significance Criteria	*100*	*10*	*0.8*
Exceed Threshold?	**No**	**No**	**No**

Source: *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).

1 Screening health risk levels for all stationary sources, US-101, major roadways, and railroad were obtained from the BAAQMD. Per BAAQMD recommendations, the BAAQMD Distance Adjustment Multiplier Tools for Gasoline Dispensing Facilities and for Diesel Internal Combustion Engines were used to estimate the risk from the stationary sources based on distance to the proposed residential parcels.

2 According to BAAQMD, chronic health risk from these sources was not included in the raster files because risk was found to be low and exceedances were not likely.

$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
BAAQMD = Bay Area Air Quality Management District
US-101 = United States Route 101

As shown in Table 4.10.K, the cumulative cancer risk from all sources within 1,000 feet of the proposed project boundary would be approximately 36.46 in 1 million, which would be below the BAAQMD cumulative threshold of 100 in 1 million, and therefore less than significant. The cumulative Hazard Index from all such sources would be approximately 0.026, which would be below the significance threshold of 10, and would therefore be less than significant. The cumulative $PM_{2.5}$ concentration would be approximately 0.31 $\mu g/m^3$, which would be below the significance threshold of 0.8 $\mu g/m^3$ and hence would be less than significant. Since receptors on Residential 4 would be exposed to the maximum health risk, the health risk impacts at the other proposed residential receptors on site would also be **less than significant.**

Assessment of Project-Related Health Impacts. Emissions from project operations would not exceed the BAAQMD's numeric regional mass daily emission thresholds, and would not constitute a significant health impact to residents in the project vicinity and within the Air Basin.

The BAAQMD's numeric regional mass daily emission thresholds are based in part on Section 180(i) of the FCAA. The numeric regional mass daily emission thresholds are intended to provide a means of consistency in significance determination within the environmental review process.

Notwithstanding, an exceedance of the BAAQMD's numeric regional mass daily emission thresholds would not constitute a particular health impact to an individual nearby. The reason for this is that the mass daily emission thresholds are in lbs/day emitted into the air, whereas health effects are determined based on the concentration of a pollutant in the air at a particular location (e.g., parts per million [ppm] by volume of air or $\mu g/m^3$ of air). The CAAQS and NAAQS were developed to protect the most susceptible population groups from adverse health effects and were established in terms of ppm or $\mu g/m^3$ for the applicable emissions.

Furthermore, as described in Section 4.10.1, Setting, air quality trends for emissions of CO, NO_X, ROGs, and O_3 (which is a byproduct of NO_X and ROGs) have been trending downward within the Air Basin even as development has increased over the last several years.

Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Because of the relatively small amount of emissions from the project relative to regional-wide emissions, it would be speculative to assess whether or the extent to which the proposed project would contribute to adverse health effects. Even though the BAAQMD's air quality modeling and health impact evaluation capabilities are among the most sophisticated of any of the air districts in the State, BAAQMD has not provided methodology and modeling does not currently exist to assess the specific correlation between mass emissions generated, cumulative increases from individual projects, and the effect on health or even to determine how exceeding the regional thresholds by small amounts would affect the number of days the region is in nonattainment. Air district staff do not currently know of a way to accurately quantify O_3-related health impacts caused by NO_X or VOC emissions from relatively small projects due to photochemistry and regional model limitations. Similarly, CARB methodology has reported that a $PM_{2.5}$ methodology is not suited for small projects and may yield unreliable results. For these reasons, mass emissions are not correlated with concentrations of emissions or how many additional individuals in the Air Basin would be affected by the health effects cited above. In contrast, for extremely large regional projects, the BAAQMD has only been able to correlate potential health outcomes for very large emissions sources. As part of its rulemaking activity, specifically 6,620 lbs/day of NO_X and 89,180 lbs/day of ROGs were expected to result in approximately 20 premature deaths per year, and 89,947 school absences due to O_3.

The proposed project does not generate anywhere near 6,620 lbs/day of NO_X or 89,190 lbs/day of ROG emissions. As shown in Table 4.10.G, the proposed project would generate a maximum of 37.29 lbs/day of NO_X, and a maximum of 104.22 lbs/day of ROG emissions. Taking into

account the existing land uses at the project site, the proposed project would have net negative emissions, actually decreasing emissions from what is estimated to be generated by the current land uses.

Therefore, the project's emissions are not high enough to use a regional modeling program to correlate health effects on a basin-wide level. Accordingly, current scientific, technological, and modeling limitations do not allow for the relation of expected adverse air quality impacts to specific health consequences.

Notwithstanding, as previously noted, this air quality analysis does include a site-specific localized impact analysis that correlates potential project health impacts on a local level to immediately adjacent land uses as outlined above.

Threshold 4.10.4: Other Emissions. Odors produced during construction would be attributable to architectural coatings, asphalt pavement application, and concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors would disperse rapidly from the proposed project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be **less than significant.**

Odor impacts could result from siting a new odor source near existing sensitive receptors or siting a new sensitive receptor near an existing odor source. The BAAQMD considers a significant odor impact as a substantial number of odor complaints, specifically more than five confirmed complaints per year averaged over the past 3 years. Examples of land uses that have the potential to generate considerable odors include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The proposed project does not include any of these sources. As a mixed-use redevelopment, the proposed project includes commercial and residential land uses that would not be expected to generate objectionable odors. Furthermore, facilities that are common sources of odors are not located in the vicinity of the proposed project; therefore, future sensitive receptors associated with the operations of the proposed project would not be exposed to significant odors from existing sources.

Overall, the proposed project would have a less than significant odor impact because it would not create substantial objectionable odors affecting a substantial number of people. Therefore, project operations would result in an odor impact that is **less than significant.**

4.10.2.3 Cumulative Impacts

As observed by the BAAQMD, regional air pollution is largely a cumulative impact. No single project is sufficient in size to independently create regional nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

The Air Basin is currently designated as a nonattainment area for State and national ozone standards and national particulate matter AAQS. This nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of

AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Therefore, if the proposed project's daily average or annual emissions of construction- or operations-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a considerable contribution to a cumulatively significant impact. As shown in Table 4.10.F, implementation of the proposed project would not generate significant construction emissions after the implementation of mitigation. As illustrated in Table 4.10.G, the operational emissions of the proposed project would also be below significance thresholds. The proposed project is consistent with the Clean Air Plan in the region, would implement all feasible control measures recommended by the BAAQMD, and is below the BAAQMD recommended thresholds of significance. Therefore, the proposed project would have a **less than significant** cumulative impact.

4.11 GREENHOUSE GAS EMISSIONS

This section summarizes existing greenhouse gas (GHG) emissions and discusses global climate change, its causes, and the contribution of human activities. This section also estimates the likely GHG emissions that would result from construction and operational activities associated with development of the proposed project, including vehicular traffic, energy consumption, and other emission sources. Mitigation measures are recommended, where appropriate, to reduce potential impacts to a less than significant level. The analysis performed for this section is based on guidance provided in the Bay Area Air Quality Management District (BAAQMD) *California Environmental Quality Act (CEQA) Air Quality Guidelines* and the BAAQMD *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* document.[1,2]

In addition to the references listed in this section, an Air Quality and Greenhouse Gas Emissions Technical Report (AQ/GHG Technical Report) was prepared for the proposed project by the project sponsor's consultant.[3] The Technical Report was peer reviewed by LSA[4] and finalized by the project sponsor. The final report was utilized in the analysis provided in this section, and is provided in Appendix I.

4.11.1 Setting

The following describes existing GHG emissions in San Rafael, beginning with typical GHG types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels.

4.11.1.1 Background

The following section provides background information on GHGs and global climate change.

Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ±0.2 degrees Celsius (°C) or 1.1 ±0.4 degrees Fahrenheit (°F) in the 20th Century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming.

1 Bay Area Air Quality Management District (BAAQMD). 2017. *CEQA Air Quality Guidelines.* May.
2 Bay Area Air Quality Management District (BAAQMD). 2022. *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*. April.
3 Dudek. 2023. *Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report.* August.
4 LSA Associates, Inc. 2023. *Peer Review of the Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report and Energy Analysis Memorandum.* March 13.

GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[5]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are the following:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, CH_4, and N_2O, some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively only to the six gases listed above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by 1 unit mass of the GHG to the ratio of heat trapped by 1 unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table 4.11.A shows the GWP for each type of GHG. For example, SF_6 is 23,900 times more potent at contributing to global warming than carbon dioxide.

[5] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, GHGs like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of GHG results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

Table 4.11.A: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	21
Nitrous Oxide (N_2O)	120	310
HFC-23	260	11,700
HFC-134a	1	140
HFC-152a	1	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoromethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: *Second Update to the Climate Change Scoping Plan: Building on the Framework* (CARB 2017). Website: www.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed August 2023).
CARB = California Air Resources Board
HFC = hydrofluorocarbon
PFC = perfluorocarbon

The following summarizes the characteristics of the six GHGs and black carbon. Black carbon also contributes to climate change and is therefore discussed below.

Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter, and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of manmade CO_2; consequently, the gas is building up in the atmosphere.

In 2019, total annual CO_2 accounted for approximately 83 percent of California's overall GHG emissions.[6] Transportation is the single largest source of CO_2 in California, which is primarily comprised of on-road travel. Electricity production and industrial and residential sources also make important contributions to CO_2 emissions in California.

Methane. Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation in dairy cows, manure management, and rice cultivation are also significant sources of CH_4 in California. Total

[6] California Air Resources Board (CARB). 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed August 2023).

annual emissions of CH_4 accounted for approximately 9 percent of GHG emissions in California in 2019.[7]

Nitrous Oxide. Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for approximately 3 percent of GHG emissions in California in 2019.[8]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[9] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semicon-4.11-4octor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry has resulted in greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 5 percent of GHG emissions in California in 2019.[10]

Black Carbon. Black carbon is the most strongly light-absorbing component of particulate matter (PM) formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of particulate matter less than 2.5 microns in size ($PM_{2.5}$) and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb 1 million times more energy than CO_2.[11] Black carbon contributes to climate change both directly (e.g., absorbing sunlight) and indirectly (e.g., affecting cloud formations). However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel-fueled vehicles.[12] The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. Black carbon

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7 California Air Resources Board (CARB). 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed August 2023).

8 Ibid.

9 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

10 California Air Resources Board (CARB). 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed August 2023).

11 United States Environmental Protection Agency (EPA). 2017. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed August 2023).

12 Ibid.

emissions in the United States are projected to decline substantially by 2030, largely due to controls on new mobile diesel emissions.[13]

Effects of Global Climate Change. Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global climate change may also result in impacts to local air quality from increased ground-level ozone and particulate matter.[14] Additionally, according to the 2006 California Climate Action Team (CAT) Report,[15] the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[16]
- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;[17]
- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[18]
- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years;[19]

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13 United States Environmental Protection Agency (EPA). 2017. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed August 2023).

14 United States Environmental Protection Agency (EPA). 2020. Air Quality and Climate Change Research. Website: https://www.epa.gov/air-research/air-quality-and-climate-change-research (accessed August 2023).

15 California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

16 Ibid.

17 Ibid.

18 Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February.

19 California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

- Increase in the number of days conducive to ozone (O_3) formation by 25 to 85 percent (depending on the future temperature scenario) in high O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;[20] and

- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.[21]

A summary of these potential effects is provided in Table 4.11.B.

Table 4.11.B: Potential Impacts of Global Warming and Expected Consequences for California

Potential Impacts	Anticipated Consequences Statewide
Reduction of the State's average annual snowpack	• The decline of the Sierra snowpack would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years • Potential loss of 5 million acre-feet or more of average annual water storage in the State's snowpack • Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply • Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	• Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports • Increased risk of flooding, coastal erosion along the State's coastline, seawater intrusion into the Sacramento-San Joaquin River Delta (Delta) and levee systems
Changes in weather	• Changes in precipitation, ocean salinity, and wind patterns • Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	• Potential increased storm intensity and increased potential for flooding • Possible increased potential for droughts • Long-term changes in vegetation and increased incidence of wildfires • Changes in the intensity and timing of runoff • Possible increased incidence of flooding and increased sedimentation • Sea level rise and inundation of coastal marshes and estuaries • Increased salinity intrusion into the Delta • Increased potential for Delta levee failure • Increased potential for salinity intrusion into coastal aquifers (groundwater) • Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	• Increased environmental water demand for temperature control • Possible increased problems with foreign invasive species in aquatic ecosystems • Potential adverse changes in water quality, including the reduction of dissolved oxygen levels • Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	• Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	• Increased temperatures • Potential health effects, including adverse impacts to respiratory systems

Source: *Climate Change Impacts Across California* (LAO 2022).
LAO = Legislative Analyst's Office
O_3 = ozone

[20] California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

[21] Ibid.

Emissions Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions. Worldwide emissions of GHGs in 2021, the latest inventory year available, totaled 19.2 billion metric tons of CO_2e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.[22]

United States Emissions. In 2021, the year for which the most recent data are available, the United States emitted about 6,340 million metric tons of CO_2e (MMT CO_2e). Overall, emissions in 2021 increased by approximately 5 percent since 2020, and were 15 percent of 2005 levels. The increase from 2020 levels was potentially explained by a resumption of activity after the impacts of the COVID-19 pandemic. Decreases in emissions from 2005 levels were largely driven by a decrease in emissions from fossil fuel combustion resulting from a decrease in total energy use, and a continued shift from coal to natural gas and renewables in the electric power sector. Of the six major sectors (i.e., residential, commercial, agricultural, industry, transportation, and electricity generation), transportation accounted for the highest amount of GHG emissions in 2021 (approximately 29 percent), with electricity generation second at 25 percent and emissions from industry third at 23 percent.[23]

State of California Emissions. The State emitted approximately 369.2 MMT CO_2e emissions in 2020, which is 35.3 MMT CO_2e lower than 2019 levels and almost 61.8 MMT CO_2e below the 2020 GHG limit of 431 MMT CO_2e.[24] The CARB estimates that transportation was the source of approximately 37 percent of the State's GHG emissions in 2020, followed by industrial sources at approximately 20 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were agriculture at 8.6 percent, residential activities at 6.8 percent, commercial activities at 3.6 percent, high GWP at 5.8 percent, and waste at 2.4 percent.[25]

San Francisco Bay Area Emissions. The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates GHG emissions produced by the San

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22 United Nations Framework Convention on Climate Change (UNFCCC). 2023. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed August 2023).

23 United States Environmental Protection Agency (EPA). 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021 (accessed August 2023).

24 California Air Resources Board (CARB). 2022. *California Greenhouse Gas 2000-2020 Emissions Trends and Indicators Report*. Website: https://ww2.arb.ca.gov/ghg-inventory-data (accessed August 2023).

25 California Air Resources Board (CARB). 2021. *California Greenhouse Gas Emissions for 2000 to 2019, Trends of Emissions and Other Indicators Report*. July 28. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf (accessed August 2023).

Francisco Bay Area (Bay Area) in 2011.[26] The inventory, which was published i***n*** January 2015, updates the BAAQMD's previous GHG emissions inventory for base year 2007.

In 2011, 86.6 MMT CO_2e of GHGs were emitted in the Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the Bay Area's GHG emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives, ships and boats, and aircraft) contributed 39.7 percent of GHG emissions, and the industrial and commercial sectors (excluding electricity and agriculture) contributed 35.7 percent of GHG emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total GHG emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of GHG emissions.

City San Rafael Emissions. San Rafael publishes annual community GHG emissions estimates through the Marin Climate & Energy Partnership (MCEP). The 2019 inventory shows that the San Rafael community has reduced emissions 27 percent since 2005. [27] Emissions dropped from approximately 469,735 MT CO_2e in 2005 to 343,305 MT CO_2e in 2019, which is equivalent to 14 percent below 1990 levels. The 2019 San Rafael community emissions are detailed in Table 4.11.C. The two primary sources of GHGs in the community are the transportation sector and the use of natural gas and propane in the built environment, which account for approximately 63 percent and 25 percent of the total communitywide emissions, respectively. Notably, San Rafael needs to reduce emissions another 103,740 MT CO_2e to meet the State and local target for 2030 and another 263,450 MT CO_2e to meet the State target for 2050, which is 80 percent below 1990 levels.

Table 4.11.C: City of San Rafael 2019 Greenhouse Gas Emissions Inventory

Source Category	GHG Emissions (MT CO_2e)	Percentage of GHG Emissions
Built environment – Electricity	25,464	7.42%
Built environment – Natural Gas	86,037	25.06%
Transportation	214,479	62.47%
Waste	13,470	3.92%
Water	89	0.03%
Wastewater	501	0.15%
Off-Road	3,264	0.95%
Total	**343,304**	**100%**

Source: City of San Rafael. 2021. *City of San Rafael Community Greenhouse Gas Emissions Inventory for the Year 2019*. May.
GHG = greenhouse gas
MT CO_2e = metric tons of carbon dioxide equivalent

[26] Bay Area Air Quality Management District (BAAQMD). 2015. *Source Inventory of Bay Area Greenhouse Gas Emissions.* January.

[27] City of San Rafael. 2021. *Community Greenhouse Gas Emissions Inventory for the Year 2019*. May. Website: https://docs.google.com/viewerng/viewer?url=https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2021/05/San-Rafael-2019-GHG-Inventory-Report_final.pdf (accessed August 2023).

4.11.1.2 Regulatory Framework

Federal Regulations. Federal regulations applicable to GHG emissions are described below.

Federal Clean Air Act. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (EPA) has the authority to regulate CO_2 emissions under the Federal Clean Air Act (FCAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the FCCA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the United States Department of Transportation (DOT), issued final rules to further reduce GHG emissions and improve Corporate Average Fuel Economy (café) standards for light-duty vehicles for model years 2017 and beyond.[28] The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg), limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 *Federal Register* 62630).

On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 and 2050.

State Regulations. The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California CO_2 emissions, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493

[28] United States Environmental Protection Agency. 2012. "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards," 77 Federal Register 199, pp. 62624-63200.

requires the CARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the EPA until June 30, 2009. CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California's waiver in 2019, but the Biden administration restored California's waiver in 2021.

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010.
- GHG emissions should be reduced to 1990 levels by 2020.
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads the CAT made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in EO S-3-05 and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, in which it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in EO S-3-05. The most recent report was released in December 2020.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, which was passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 MMT CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was initially approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of

approximately 169 MMT CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and sets the groundwork to reach long-term goals set forth in EO S-3-05 and EO B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[29] to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

Most recently, the 2022 Scoping Plan[30] was approved in December 2022 and assesses progress toward achieving the SB 32 2030 target and laying out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code [PRC] Sections 21083.05 and 21097), acknowledges climate change as a prominent environmental issue that requires analysis under the California Environmental Quality Act (CEQA). This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. The California

29 California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November.

30 California Air Resources Board (CARB). 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf (accessed August 2023).

Natural Resources Agency adopted the amendments to the *State CEQA Guidelines* in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 6 to 15 percent reduction by 2020 and a 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Association of Bay Area Governments (ABAG) will work with local jurisdictions in the development of a Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the San Francisco Bay Area reduction targets for per capita vehicular emissions were 10 percent by 2020 and 19 percent by 2035 as shown in Table 4.11.D.

Table 4.11.D: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (%)	By 2035 (%)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6–13	13–16
Los Angeles/Southern California	8	19

Source: *SB 375 Regional Greenhouse Gas Emissions Reduction Targets (*CARB 2018).

Executive Order B-30-15 (2015). Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target and therefore is moving forward with the update process. The mid-term target is critical to help frame the suite of policy

measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission (CPUC) for the private utilities and by the California Energy Commission (CEC) for municipal utilities. Each utility must submit a procurement plan showing that it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved using existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In summer 2016, the Legislature passed and the Governor signed SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change (IPCC) analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million (ppm) CO_2e and reduce the likelihood of catastrophic impacts from climate change.

AB 197 (i.e., the companion bill to SB 32) provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under SB 100, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant State agencies to ensure

that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that by no later than 2045, the remaining emissions to be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279. AB 1279 was signed in September 2022 and codifies the State goals of achieving net carbon neutrality by 2045 and maintaining net negative GHG emissions thereafter. This bill also requires California to reduce statewide GHG emissions by 85 percent compared to 1990 levels by 2045 and directs CARB to work with relevant State agencies to achieve these goals.

California Building Efficiency Standards (Title 24, Part 6).The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR), contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen Code), which sets performance standards for residential and non-residential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The current set of standards were adopted in 2022 and will apply to projects seeking building permits on or after January 1, 2023. As further discussed in the Regional Regulations section, below, the City has also adopted reach codes which go beyond the State code requirements for certain building requirements. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade emissions trading program developed by CARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The program aims to regulate GHG emissions from the largest producers in the State by setting a declining statewide firm limit, or cap, on allowable annual GHG emissions. The cap-and-trade program was initially slated to sunset in 2020, but the passage of SB 398 in 2017 extended the program through 2030.[31]

Executive Order N-79-20. EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: (a) 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; (b) 100 percent of medium- and heavy-duty

[31] California Air Resources Board (CARB). 2014. Cap-and-Trade Program. Website: www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed August 2023).

vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and (c) 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

California Integrated Waste Management Act. To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. In 2011, AB 341 modified the California Integrated Waste Management Act and directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. The resulting 2012 Mandatory Commercial Recycling Regulation requires that on and after July 1, 2012, certain businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act. In April 2016, AB 1826 further modified the California Integrated Waste Management Act, requiring businesses that generate a specified amount of organic waste per week to arrange for recycling services for that organic waste in a specified manner. If CalRecycle determines that statewide disposal of organic waste has not been reduced by 50 percent below 2014 levels by 2020, businesses generating more than 2 cubic yards of organic waste per week would be subject to these waste collection requirements. In September 15, 2020, CalRecycle signed for the approval of the 2-cubic-yard threshold to take effect. Therefore, businesses that generate 2 cubic yards or more of commercial solid waste per week shall arrange for organic waste recycling services. Diverting organic waste from landfills reduces emissions of CH_4. This is equivalent to reducing anaerobic decomposition of organic waste that would have otherwise occurred in landfills where organic waste is often buried with other inorganic waste.

Low Carbon Fuel Standard. In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). EO S-01-07 calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that an LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment. In June 2007, CARB adopted the LCFS under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or

greater than the "deficits" earned from selling higher intensity fuels. In response to certain court rulings, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. In 2018, CARB approved amendments to the regulation to readjust carbon intensity benchmarks to meet California's 2030 GHG reductions targets under SB 32. These amendments include opportunities to promote zero emission vehicle (ZEV) adoption, carbon capture and sequestration, and advanced technologies for decarbonization of the transportation sector.

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars Program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of ZEVs, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEVs regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 40 percent fewer GHGs and 75 percent fewer smog-forming emissions than 2012 model year vehicles.

Executive Order B-48-18. In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle (EV) charging stations by 2025. It specifies that 10,000 of the EV charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program, and recommend how to ensure affordability and accessibility for all drivers.

Regional Regulations. Regional regulations that are applicable to GHG emissions generated by the proposed project are implemented by the Metropolitan Transportation Commission (MTC), ABAG, and BAAQMD, as discussed below.

Plan Bay Area 2050. Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete an SCS as part of a Regional Transportation Plan (RTP). In the Bay Area, MTC and ABAG are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050

connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific actions for MTC, ABAG, and partner organizations to take over the next 5 years to make headway on each of the 35 strategies.

Bay Area Air Quality Management District. The BAAQMD is the regional government agency that regulates sources of air pollution and GHG emissions within the nine Bay Area counties.

BAAQMD's Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. In April 2022, the BAAQMD adopted the *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* document, which incorporates updated GHG significance thresholds.[32] The BAAQMD recommends these thresholds of significance for use in determining whether a proposed project will have a significant impact related to climate change. These thresholds evaluate a project based on its effect on California's efforts to meet the State's long-term climate goals. Applying this approach, the BAAQMD identifies and provides supporting documentation, outlining the requirements for new land use development projects necessary to achieve California's long-term climate goal of carbon neutrality by 2045. Based on the analysis, the BAAQMD found that new land use development projects need to incorporate design elements to contribute their "fair share" to implement the goal of carbon neutrality by 2045. If a project is designed and built to incorporate the identified design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. The document concludes that if a project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

Local Regulations. Local regulations that are applicable to GHG emissions generated by the proposed project are implemented by the City of San Rafael through the General Plan, Climate Change Action Plan, and Municipal Code, as discussed below.

City of San Rafael General Plan 2040. As discussed in the City of San Rafael General Plan 2040,[33] policies pertaining to climate change are addressed in multiple chapters of the General Plan. The Conservation and Climate Change Element is the most applicable chapter of the General Plan 2040, with additional goals and policies that would reduce GHGs contained in the Land Use Element and the Mobility Element. Policies applicable to climate change are described below.

[32] Bay Area Air Quality Management District (BAAQMD). 2022. *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans*. April.

[33] City of San Rafael. 2021. *General Plan 2040.* August. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

Policy LU-1.3: Land Use and Climate Change. Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.

Policy LU-2.2: Mixed Use Development. Encourage mixed-use development (combining housing and commercial uses) in Downtown San Rafael and on commercially designated properties elsewhere in the city. Mixed-use development should enhance its surroundings and be compatible with adjacent properties.

Policy LU-2.3: Neighborhood-Serving Commercial Uses. Encourage the retention and improvement of neighborhood-serving retail stores and services. In the event such spaces become vacant, consider other activities that reinforce their role as neighborhood centers. Neighborhood-serving commercial areas should reinforce the City's goal of reducing GHG emissions and traffic congestion by providing walkable, bikeable services and shopping close to residents.

Policy C-3.8: Water Conservation. Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.

Policy C-3.9: Water-Efficient Landscaping. Encourage—and where appropriate require—the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.

Policy C-4.1: Renewable Energy. Support increased use of renewable energy and remove obstacles to its use.

Policy C-4.2: Energy Conservation. Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.

Policy C-4.3: Managing Energy Demand. Reduce peak demands on the electric power grid through development of local sources, use of battery storage, deployment of "smart" energy and grid systems that use technology to manage energy more efficiently, and public education.

Policy C-4.4: Sustainable Building Materials. Encourage the use of building materials that reduce environmental impacts and the consumption of nonrenewable resources.

Policy C-4.5: Resource Efficiency in Site Development. Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.

Policy C-5.2: Consider Climate Change Impacts. Ensure that decisions regarding future development, capital projects, and resource management are consistent with San Rafael's Climate Change Action Plan (CCAP) and other climate goals, including greenhouse gas reduction and adaptation.

City of San Rafael Climate Change Action Plan 2030. In 2006, San Rafael was one of the early signatories to the United States Conference of Mayors Climate Protection Agreement, committing the City to working toward meeting the goals of the Kyoto Protocol. The City Council adopted San Rafael's first Climate Change Action Plan (CCAP) on April 20, 2009, which set goals of a 25 percent reduction of GHGs by 2020, and an 80 percent reduction by 2050 to meet targets set by the State of California. As of 2019, the City of San Rafael (City) had met the State target of 15 percent reduction of GHG emissions, as well as a local 25 percent stretch goal. Meanwhile, the State issued a new interim target for 2030: 40 percent reduction of GHG emissions below 1990 levels. The City Council approved an updated version, the Climate Change Action Plan 2030 (CCAP 2030),[34] on May 20, 2019. CCAP 2030 includes a variety of regulatory, incentive-based, and voluntary strategies that are expected to reduce emissions from both existing and new development in San Rafael. The local actions included in the plan include a focus on low-carbon transportation, energy efficiency, renewable energy, waste reduction, water conservation, sequestration and adaptation, community engagement, and implementation and monitoring of the plan.

The CCAP 2030 establishes targets similar to the State's goals to reduce emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Emissions reductions are estimated for each State and local strategy; combined, they show that the City could reduce emissions 19 percent below 1990 levels by 2020 (equivalent to 31 percent below 2005 levels), and 42 percent below 1990 levels by 2030, which is enough to surpass the City and State goals for those years. Community emissions are projected to be 233,920 MT CO_2e in 2030 with all State and local actions implemented, while the reduction target is 241,455 MT CO_2e. Overall, State actions represent about 40 percent of the reduction expected through implementation of CCAP 2030, while local actions represent about 60 percent.

City of San Rafael Municipal Code. In December 2022, the San Rafael City Council approved a reach code ordinance, codified as Chapter 12.245.020, Amendments, of the City's Municipal Code. The amendments prohibit new fuel gas and oil piping in new construction unless for use in emergency electrical generation when required by the code, commercial kitchen for preparing food, commercial laundry for laundry, or in an approved industrial process. Furthermore, at the discretion of the building official, the building official may approve fuel gas in new construction or expand fuel gas in existing construction when replacing with electric has been demonstrated to be technically infeasible or has a disproportionate cost to the project, thereby causing an insurmountable hardship.

Furthermore, the updated code requires the installation of electric vehicle infrastructure greater than the State code requirements. For single-family homes and duplexes, the City's code requires new construction to have the capacity, wiring, and equipment so that it would be easy for a homeowner to install the charger of their choice. For multifamily dwellings, it requires 100 percent of parking spaces attributed to tenants to be equipped with low-power Level 2 charger infrastructure with receptacles for charging at lower speeds, providing the flexibility to more easily add the charging equipment in the future. A total of 15 percent of those spaces are

[34] City of San Rafael. 2019. *Climate Change Action Plan 2030.* May. Website: https://www.cityofsanrafael.org/climate-change-action-plan/ (accessed August 2023).

required to have a Level 2 charger installed. For non-residential new construction, the City's code requires 35 percent of parking spaces to be EV Ready with low-Level 2 infrastructure, 10 percent EV Capable (meaning only the conduit installed), and 10 percent installed fully with level 2 chargers.

4.11.2 Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to GHG emissions that could result from implementation of the proposed project.

4.11.2.1 Significance Criteria

Following the BAAQMD Guidelines, implementation of the proposed project would have a significant impact related to GHG emissions if it would:

Threshold 4.11.1: Generate GHG emissions, either directly or indirectly, that may have a significant effect on the environment. The project would be assumed to result in a less than significant impact related to GHG emissions if the project would either (must include A or B):

A. Include the following project design elements:

1. Buildings

    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

    b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*.

2. Transportation

    a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

    b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor's OPR Technical Advisory on Evaluating Transportation Impacts in CEQA:

        (1) **Residential Projects:** 15 percent below the existing VMT per capita

(2) **Office Projects:** 15 percent below the existing VMT per employee
(3) **Retail Projects:** No net increase in existing VMT.

B. Be consistent with a local GHG reduction strategy that meets the criteria under *State CEQA Guidelines* Section 15183.5(b).

Threshold 4.11.2: Not meet the general intent of reducing GHG emissions and thereby impede attainment of the GHG emission reduction goals set forth in an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, including:

- CARB 2022 Climate Change Scoping Plan,
- Plan Bay Area 2050,
- City's CCAP 2030,
- SB 32,
- AB 1279,
- EO S-3-05, and
- CARB Mobile Source Strategy and EO B-48-18.

4.11.2.2 Project Impacts

The following section describes potential impacts associated with GHG emissions that could occur with development of the proposed project.

Threshold 4.11.1: Generation of GHG Emissions. The proposed project would generate construction- and operations-related GHG emissions and contribute to global climate change through the phased redevelopment of the project site.

As discussed above, a project would have a less than significant impact related to GHG emissions if it would include project design elements related to natural gas, energy, VMT, and electric vehicles, as recommended by the BAAQMD under GHG Emissions Threshold "A", or if it would be consistent with a local GHG reduction strategy that meets the criteria under *State CEQA Guidelines* Section 15183.5(b).

Because the City's CCAP 2030 only analyzes emissions through the 2030 horizon year and does not include an assessment of emissions inventory and reductions necessary to meet the State's long-term GHG emissions goals, including the 2045 carbon neutrality goal established in AB 1279, this analysis evaluates the proposed project against the BAAQMD GHG Emissions Threshold "A", which requires projects to include certain design features, further outlined below, to ensure they are doing their "fair share" to meet the State's GHG emissions reductions goals. The estimated GHG emissions that would occur due to project construction and operation were quantified as a part of the Technical Report prepared for the proposed project and are available in Appendix I. The proposed project would have a potentially significant impact due to GHG emissions as analyzed against the recommended BAAQMD project design thresholds.

Impact GHG-1 The proposed project would generate GHG emissions, either directly or indirectly, that would have a significant effect on the environment. (S)

As demonstrated below, the proposed project would have a potentially significant impact due to GHG emissions as analyzed against the recommended BAAQMD project design thresholds.

Construction GHG Emissions: The BAAQMD has not addressed emissions thresholds for construction in its CEQA Guidelines; however, the BAAQMD encourages quantification and disclosure. Therefore, an estimate of the potential GHG emissions that could result from implementation of the proposed project was completed for the proposed project, and are included in the Technical Report (Appendix I) for reference.

Construction activities associated with the proposed project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. GHG emissions generated during construction of the proposed project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. The implementation of mitigation measures included in Section 4.10, Air Quality, of this Environmental Impact Report (EIR) would also serve to reduce GHG emissions in some cases, such as the requirement for Level 3 diesel particulate filters or Tier 4 Final engines to be utilized in construction equipment, as included in Mitigation Measure AIR-4.

Operational GHG Emissions: The GHG emissions impact analysis for the proposed project focuses on comparing the project design to the recommended project design thresholds established by the BAAQMD. However, the estimated operational emissions from the proposed project were estimated using the California Emissions Estimator Model (CalEEMod) and are included in the Technical Report (Appendix I) for informational purposes.

As discussed above, because the proposed project includes construction and operational dates that would occur after the 2030 horizon year included in the City's CCAP 2030, and because the City's CCAP 2030 does not currently include an assessment of the emissions inventory and reductions necessary to meet the State's goal of carbon neutrality by 2045, as established in AB 1279, this analysis evaluates the proposed project against the BAAQMD GHG Emissions Threshold "A", which requires projects to include certain design features, further outlined below, to ensure that they are doing their "fair share" to meet the State's GHG emissions reductions goals. The proposed project's consistency with the project design elements established by the BAAQMD are further discussed below. The proposed project's consistency with the City's CCAP 2030 is discussed later in this Chapter under Threshold 4.11.2.

- **Natural Gas Usage:** As required by the BAAQMD, the project must not include natural gas appliances or natural gas plumbing in order to be consistent with this design element. While the proposed project would include all-electric residential buildings as specified in the project

application materials and detailed in Chapter 3.0, Project Description, the project design includes natural gas connections for commercial kitchen uses in restaurants. The proposed project would also include natural gas fire pits, and therefore would not be consistent with this design element as proposed. Mitigation Measure GHG-1 is required to be implemented to prohibit the use of natural gas in fire pits as part of the proposed project. However, as explained below, the City does not intend to prohibit natural gas connections for commercial kitchens, thus the proposed project would not be consistent with this project design element.

- **Energy Usage:** Per the BAAQMD CEQA Guidelines, the project must not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*. Energy usage associated with the proposed project is evaluated in Section 4.15, Energy. As discussed in Section 4.15, energy use consumed by the proposed project would be associated with electricity consumption and fuel used for vehicle trips associated with the project. Electrical and natural gas demand associated with project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Furthermore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The project would also incorporate energy measures such as energy efficient windows, additional insulation, external and internal shade structures, light-emitting diode (LED) lighting, daylighting and occupancy controls, efficient space heating and cooling systems, and on-site renewable energy and energy storage. Therefore, the proposed project would be consistent with this design element.

- **Vehicle Miles Traveled:** In order to meet the BAAQMD's VMT threshold, the project must achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor's OPR 2018 guidance, *Technical Advisory on Evaluating Transportation Impacts in CEQA*. As discussed in Section 4.9, Transportation, the VMT analysis conducted for the proposed project concluded that the proposed project, including both phases, would have a less than significant VMT impact. For the residential land uses, the proposed project would result in a VMT per capita below the 11.4 VMT per capita residential significance threshold that reflects 15 percent below the nine-county Bay Area regional average of 13.4 VMT per capita. For the commercial and retail land uses, the total retail VMT would not exceed the commercial and retail threshold under existing conditions because the project would reduce total commercial/retail VMT as compared to the existing uses. Therefore, the proposed project would be consistent with this design element.

- **Electric Vehicle Requirements:** This criterion requires that the project achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2 Voluntary Standards. Currently, these standards require that a project with 201 or more parking spaces provide 45 percent of total parking spaces as EV-capable spaces, and 33 percent of the EV-capable spaces (meaning 15 percent of total parking spaces) as EV charging stations. These requirements are applicable to the spaces that would be provided or reconfigured specifically to serve the proposed project and are not applicable to existing spaces that would not be modified

(e.g., the garage). For the residential development, the proposed project would provide 763 EV-ready residential parking spaces, which exceeds the CALGreen Tier 2 requirement of 359 spaces, and 134 chargers, which achieves the Tier 2 requirement. Regarding the non-residential (commercial) requirement, in Phase 1, the proposed project would include a total of 465 spaces, and would provide 210 spaces as EV capable, with 70 of those spaces as active charging stations, meeting the Tier 2 Voluntary Standards requirements. For Phase 2, the proposed project would include a total of 171 commercial parking spaces, and would provide an additional 77 spaces as EV capable, with 26 of those EV charging stations in line with the CalGreen Tier 2 Voluntary Standards. Therefore, the proposed project would be consistent with this project design threshold.

As detailed in the Technical Report, the proposed project is expected to have a net-negative impact on operational GHG emissions by replacing the existing land uses with less emissions-intensive buildings and proposed uses. The proposed project would be consistent with many of the BAAQMD recommended project design features included in the BAAQMD GHG Emissions Threshold "A," including exceeding the recommended amount of EV charging included in the CALGreen Tier 2 voluntary standards and meeting the BAAQMD project design thresholds for VMT. The proposed project would also include all-electric design for the residential buildings. The proposed project would incorporate numerous sustainability features, including water-efficient interior plumbing fixtures and appliances, dual plumbing to allow for use of recycled water, drought tolerant landscaping and low water use practices, green infrastructure techniques for stormwater runoff, energy-efficient lighting, solar panels and battery storage for residential buildings, and high-efficiency mechanical and hot-water systems.

However, the proposed project would not be consistent with the required natural gas prohibition because natural gas would be included in the project design for commercial kitchen uses at restaurants and for limited recreational uses. Therefore, the proposed project would conflict with the BAAQMD GHG Threshold "A". As such, the proposed project would result in the generation of GHG emissions that would have a significant impact on the environment. The following mitigation measure would be required to reduce the proposed project's potential GHG emissions impact to the extent feasible.

Mitigation Measure GHG-1 **Natural Gas Prohibition for Recreational Use.** Prior to the issuance of building permits, the project sponsor shall submit documentation to the City of San Rafael (City) Planning Department that demonstrates, to the satisfaction of the City, that natural gas-fired recreational fire pits are not included in the proposed project design. (SU)

Implementation of Mitigation Measure GHG-1 would prohibit natural gas-fueled fire pits from being included as part of the proposed project. However, the City has determined that requiring compliance with the BAAQMD design threshold to completely prohibit natural gas usage at the proposed project is inconsistent with the City's municipal code, specifically the recently adopted reach code, which prohibits natural gas for residential uses but allows installation of new natural gas connections and operations with natural gas for commercial kitchen uses. With adoption of the reach code, the City found that a ban on natural gas usage was infeasible due to cost-effectiveness

considerations, based in part on 2022 studies conducted by the CPUC and the CEC.[35] Furthermore, the legal precedence of prohibiting natural gas has been recently challenged in litigation,[36] and the court has upheld that a municipal ordinance to ban natural gas usage violates federal law, specifically the Energy Policy and Conservation Act. For these reasons, the City, as lead agency for the environmental review of the proposed project, has found that requiring mitigation to prohibit the usage of natural gas in the proposed commercial kitchens is not feasible.

Because the proposed project would not incorporate all of the project design thresholds necessary to meet the BAAQMD Threshold "A", for this criterion, the proposed project would have a **significant and unavoidable impact**.

Threshold 4.11.2: Conflict with a GHG Reduction Plan, Policy, or Regulation. Applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions include the City's CCAP 2030, the CARB Scoping Plan, EO S-3-05, SB 32, EO B-48-18, AB 1279, and Plan Bay Area 2050 (the regional MPOs' RTP/SCS). As such, the proposed project was evaluated for consistency with those plans to demonstrate whether the proposed project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions.

Impact GHG-2 The proposed project would conflict with a State or local GHG reduction plan, policy, or regulation. (S)

As discussed below, the proposed project would be consistent with the City's CCAP 2030 and with Plan Bay Area 2050. However, because the proposed project includes natural gas plumbing and the utilization of natural gas for use in commercial kitchens, the proposed project would potentially conflict with the 2022 Scoping Plan and long-term State goals for GHG emission reductions and carbon neutrality in 2045.

City of San Rafael Climate Change Action Plan 2030. The City's CCAP 2030 includes a checklist with required elements and a separate checklist with recommended elements. The project's consistency with the required regulations and recommended elements is evaluated in Table 4.11.E.

As shown in Table 4.11.E, the proposed project would comply with all applicable required elements of the City's CCAP 2030 and would further implement most of the recommended elements from the CCAP where feasible. The proposed project therefore can be considered generally consistent with the goals and measures included in CCAP 2030.

35 Southern California Edison (SCE). 2022. *2019 Reach Code Cost-Effectiveness Analysis. Full Service and Quick-Service Restaurants.* February.

36 *California Restaurant Association v. City of Berkeley*. 547 F. Supp. 3d 878, 891 (N.D. Cal. 2021).

Table 4.11.E: Project Consistency with City of San Rafael CCAP 2030

Regulation/Element	Project Consistency
CCAP Required Measures	
Green Building Ordinance (SRMC Chapter 12.44). Meets all sections of City's Green Building Ordinance, including Tier 1 for all new construction.	**Project Complies.** The proposed project would comply with all applicable City Green Building Ordinance requirements. Key requirements include enhancing the on-site bike racks, clean air vehicle parking, providing EV charging stations, reuse of existing structure, improving energy efficiencies across the full scope of the project, on-site solar/green power, and reduction of heat island through cool roof, vegetation, and light-colored hardscape.
Water Efficient Landscape Ordinance (SRMC Section 14.16.370). Meets water efficient landscape provisions in MMWD ordinance, including efficient equipment and monitoring requirements.	**Project Complies.** The proposed project would comply with the City's Water Efficient Land Ordinance, including drought-tolerant/native planting, hydro-zoning, efficient irrigation, and smart irrigation controllers.
Water Conservation Ordinance (MMWD Code Section 13.02.021). Meet water conservation requirements for interior plumbing fixtures, appliances, and equipment.	**Project Complies.** The proposed project would comply with MMWD's Water Conservation Ordinance. All new construction would meet current code and local agency requirements.
Graywater Water Ordinance (MMWD Ord. 429). All development new residential and commercial structures requesting water service and all substantial remodels requesting an enlarged water service must install a graywater recycling system.	**Project Complies.** The proposed project would comply with MMWD's Graywater Water Ordinance. This proposed project would be connected to the existing municipal graywater system and would use it for landscape irrigation. Where feasible, dual plumbing may be installed for toilet/urinal use.
Wood-Burning Appliance Ordinance (SRMC Chapter 12.45). Meets requirements restricting certain types of wood-burning appliances.	**Project Complies.** The proposed project would comply with the City's Wood-Burning Appliance Ordinance because it would not include wood-burning fireplaces or stoves within the residential units or retail space.
Commercial/Multi-Family Recycling Regulations (AB 341, AB 1826, SB 1383). CA State law requires recycling and composting at various levels. Confirm compliance based on date of application. Also, ensure there is adequate space for recycling and composting containers in facility as well as outside to accommodate landfill, recycling, and composting carts. Consult with Marin Sanitary Service before approving plans for commercial new construction or major remodels.	**Project Complies.** The proposed project would comply with Commercial/ Multi-Family Recycling regulations by providing adequate space for recycling and composting containers inside the facility as well as outside to accommodate landfill, recycling, and composting carts.
Polystyrene Take-Out Food Container Ordinance [restaurant and retail food purveyors only] (SRMC Chapter 10.92). Retail food vendors in San Rafael are prohibited from carrying expanded polystyrene foam (EPS) containers, sometimes known by the brand name Styrofoam™.	**Project Complies.** The proposed project would include retail land uses that are anticipated to include restaurants. The restaurant tenants would be required to comply with SRMC Chapter 10.92 and therefore would not use EPS.
Employer Trip Reduction Requirements (SRMC Chapter 5.81). Employers with over 100 employees must comply with Chapter 5.81 – Trip Reduction and Travel Demand Requirements.	**Project Complies.** Future retail tenants that employ more than 100 employees would be required to comply with the City's Employer Trip Reduction Requirements.
Bicycle Parking Regulations (SRMC Section 14.18.090). Bicycle parking is required for all new non-residential buildings and major renovations.	**Project Complies.** The proposed project would comply with bicycle parking regulations and would provide a total of 181 bicycle parking spaces consisting of 91 bike racks (open) and 91 bike lockers (closed). The 181 bicycle parking spaces equate to 10 percent of the total minimum vehicle parking spaces required. In addition, the proposed project also features new multimodal pathways for pedestrian and bicycle circulation throughout the interior of the site. The proposed project also includes a proposed financial contribution toward the City's development of an off-site multimodal pedestrian and bicycle pathway connecting the project site to the nearby SMART Marin Civic Center station.
Clean-Air Vehicle Parking Regulations (SRMC Section 14.18.045). Parking spaces in new non-residential buildings shall be designated for clean-air vehicles, as defined by Section 5.102 of CALGreen.	**Project Complies.** The proposed project would comply with the City's clean-air vehicle parking regulations for new non-residential buildings, which require 10 percent of total parking to be labeled CLEAN AIR/VANPOOL/EV. The project would provide 8% of total stalls with EV charging stations, labeled EV ONLY, and 2% labeled CLEAN

Table 4.11.E: Project Consistency with City of San Rafael CCAP 2030

Regulation/Element	Project Consistency
	AIR/VANPOOL/EV. EV-capable and EV charging stations would be provided that meet the CALGreen Tier 2 Voluntary Standards for both residential and non-residential (commercial) parking.
Affordable Housing Ordinance [Multi-Family and Non-Residential Projects] (SRMC Chapter 14.16.30). Requirement to provide for low- and moderate-income housing units in residential development projects.	**Project Complies.** The proposed project would provide approximately 10% of the total residential units as affordable housing units. Specifically, under the 2025 Master Plan (Phase 1), 96 of the 922 total units (10.4%) would be low-income units. Under the 2040 Vision Plan (Phase 2), 51 of the 500 total units (10.2%) would be low-income units. At buildout, 138 of the 1,422 units (10.2%) would be low-income units. As such, the project would comply with the City's Affordable Housing Ordinance.
Single-Use Carryout Bag Ordinance [retail projects only] (SRMC Chapter 10.94). Retailers must not offer certain types of plastic carryout bags and must adhere to certain charges and restrictions.	**Project Complies.** Future retail land use operators at the project site would be required to comply with the City's Single-Use Carryout Bag Ordinance by not offering certain types of plastic carryout bags and adhering to certain charges and restrictions.
Residential Solar Regulations [only applies to housing development projects] (CA State CALGreen Requirements). New homes built in CA after Jan 1, 2020, must be equipped with a solar electric system.	**Project Complies.** The proposed residential buildings would be subject to the applicable solar and battery storage requirements by code. The proposed project includes solar power generation on top of all residential buildings and the parking structure, and all other new buildings would be made ready for installation of photovoltaic solar panels. Battery storage would also be provided in apartment-style residential buildings.
CCAP Recommended Elements/Opportunities	
Energy Efficiency (Marin County Programs). Conduct an energy efficiency audit. Implement efficiency measures where feasible. Rebates and other incentives are available through utilities, State and Federal programs.	**Project Complies.** The proposed project would implement efficiency measures where feasible. As specified in Chapter 3.0, Project Description, the project would include the following energy efficiency measures: (a) energy-efficient LED lighting would be installed throughout the project; (b) photovoltaic solar panels would be installed on top of all residential buildings and the parking structure, and all other new buildings would be made ready for installation of photovoltaic solar panels; (c) battery storage would be provided in apartment-style residential buildings; and (d) high-efficiency mechanical and hot-water systems would be installed in residential buildings.
Renewable Energy On-Site (Marin County Solar Programs). Conduct a feasibility assessment for on-site solar and battery storage. Implement renewable energy installations where feasible.	**Project Complies.** The proposed project includes solar power generation on top of all residential buildings and the parking structure, and all other new buildings would be made ready for installation of photovoltaic solar panels. Battery storage would be provided in apartment-style residential buildings.
Renewable Energy Purchase (MCE Programs). Subscribe to MCE Clean Energy's Deep Green or PG&E's Solar Choice 100% renewable electricity option.	**Project Complies.** The proposed project would encourage and allow for future residents and tenants to subscribe to MCE Clean Energy's Deep Green or PG&E's Solar Choice 100% renewable electricity option. However, future residents and tenants are permitted to opt out.
Electric Vehicle Charging (California Resources). New and remodeled Multi-Family and Commercial projects should install electrical service and conduits for EV charging, and where possible EV charging stations at a minimum of 5% of spaces. Gas stations should install DC fast chargers when on-site public parking exceeds 2 spaces. Rebates and other incentives are available through utilities, State and Federal programs.	**Project Complies.** The proposed project would exceed this requirement by providing EV-capable parking spaces and EV charging that meets the CALGreen Tier 2 Voluntary Standards.
Electrification. Assess feasibility of electrifying building systems such as HVAC, hot water heaters, and appliances. Implement where feasible. Rebates and other incentives may be available through utilities and County of Marin.	**Project Partially Complies.** All the proposed project's residential buildings and non-restaurant retail building would be 100% electric to support the City's goals. Electrification of the residential building systems includes HVAC, water heaters, and appliances. The proposed new restaurant buildings will include both electricity and natural gas potential.
Rainwater Storage and Reuse	**Project Does Not Comply.** The proposed project does not plan to implement a rain catchment system.

Table 4.11.E: Project Consistency with City of San Rafael CCAP 2030

Regulation/Element	Project Consistency
Use of Recycled Water for Landscape or Toilets/Urinals	**Project Complies.** The proposed project would use the municipal recycled water system for the landscape, and new construction would have dual plumbing for consideration of toilet and urinal use.
Natural Filtration of Parking Lot Runoff	**Project Complies.** The proposed project would incorporate permeable surfaces within landscaped portions of the parking lots to facilitate natural filtration of water runoff from the parking lots.
Green Roof	**Project Does Not Comply.** Because the proposed project would use existing roofs for some buildings, a green roof is not feasible due to the added structural load. Furthermore, the proposed project includes rooftop solar panels as part of the proposed new construction, which would present a challenge to successfully installing and operating a green roof due to the blockage of sunlight by the panels. The new construction/residential portion of the project is not currently designed to have a green roof but would rather include solar panels with an energy-star cool roof.
High Albedo (Reflective) Roofing or Paving	**Project Complies.** Where roofing is replaced on the non-residential scope, a white thermoplastic polyolefin (TPO) roof would be installed. Residential roofing would also be white TPO roofing, improving the heat island effect reduction for the site.
Low-Carbon Concrete. Consider using low-carbon concrete as feasible such as that required by County of Marin code.	**Project Potentially Complies.** The project applicant would consider using low-carbon concrete; however, use of low-carbon concrete cannot be guaranteed at this time.
Preserve Significant Trees	**Project Complies.** The proposed project would preserve the one oak tree that was identified as a significant tree on the project site.
Bicycle Lane Upgrade	**Project Complies.** The proposed project would provide a Class II bike lane along Northgate Drive and a connection to the SMART Marin Civic Center station.
Installation/Upgrade of Bus Shelter	**Project Does Not Comply (Not Necessary).** The bus shelter near the project site was upgraded in 2008 and is currently functional. As such, it is not necessary at this time to upgrade the bus shelter. Refer to discussion in Section 4.9, Transportation, regarding transit infrastructure and capacity, which is sufficient to serve the proposed project.
Participation in Car Share, Bike Share, Rideshare, or Other Alternative Commute Programs such as Transit Subsidies. Consider as feasible, Marin Commutes resources.	**Project Complies.** The proposed project would participate in regional bike shares and rideshares available to the project site.
Environmentally Preferable Purchasing Policy. For building/development where the owner is the project developer and will utilize the facility for commercial purposes, excluding Multi-Family housing.	**Project Complies.** The proposed project would encourage future tenants to use preferred environmental products as available and feasible.

Source: *Northgate Town Square Air Quality and Greenhouse Gas Emissions Technical Report* (Dudek 2023).

AB = Assembly Bill
CA = California
CALGreen = California's Green Building Standards
CCAP = Climate Change Action Plan
City = City of San Rafael
EV = electric vehicle
GHG = greenhouse gas
HVAC = heating, ventilation, and air conditioning
LED = light-emitting diode
MMWD = Marin Municipal Water District
PG&E = Pacific Gas and Electric Company
SB = Senate Bill
SMART = Sonoma-Marin Area Rail Transit
SRMC = San Rafael Municipal Code
TPO (thermoplastic polyolefin): a single-ply white membrane used in both commercial and residential roofing. Because TPO is white, it reflects heat instead of absorbing it.

2022 Scoping Plan. The following discussion evaluates the proposed project according to the goals of EO B-30-15, AB 1279, SB 32, AB 197, and the 2022 Scoping Plan.

As discussed above, EO S-3-05 established the following goals: (a) GHG emissions should be reduced to 2000 levels by 2010; (b) GHG emissions should be reduced to 1990 levels by 2020; and (c) GHG emissions should be reduced to 80 percent below 1990 levels by 2050. SB 32 establishes a Statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that Statewide GHG emissions are reduced to at least 40 percent below 1990 levels by December 31, 2030. AB 1279 establishes State policy to achieve net zero GHG emissions no later than 2045 and for Statewide anthropogenic GHG emissions to be reduced to at least 85 percent below 1990 levels by 2045.

The CARB 2022 Scoping Plan assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

As detailed in the preceding section, the proposed project would have a significant and unavoidable GHG emissions impact, as evaluated against the BAAQMD GHG significance thresholds. In recent guidance, BAAQMD found that new land use development projects must incorporate design elements in order to achieve the project's "fair share" of Statewide emissions reductions needed to implement the goal of carbon neutrality by 2045.[37] If a project is designed and built to incorporate the identified design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. The document concludes that if a project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

The CARB has included project attributes that are recommended to reduce GHGs in the 2022 Scoping Plan. Table 3 of Appendix D of the 2022 Scoping Plan includes key project attributes that reduce GHGs from residential and mixed-use development projects, which include the following measures:

- Provides EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standard in the CALGreen Code at the time of project approval.

[37] Bay Area Air Quality Management District (BAAQMD). 2022. *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans.* April.

- Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
- Consists of transit-supportive densities (minimum of 20 residential dwelling units per acre), or is in proximity to existing transit stops (within 0.5 mile), or satisfies more detailed and stringent criteria specified in the region's SCS.
- Uses all-electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking.

Because the proposed project would include natural gas connections for use in cooking in commercial kitchens, the proposed project would not achieve its "fair share" of emissions reductions necessary to achieve carbon neutrality by 2045. Therefore, the proposed project could conflict with the 2022 Scoping Plan, SB 32, EO B-48-18, EO S-3-05, and AB 1279. Mitigation to prohibit the use of natural gas in commercial kitchens was found to be infeasible to implement, as discussed further above. Therefore, the proposed project would conflict with the 2022 Scoping Plan and related State legislation.

Plan Bay Area 2050. As described above, Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan that integrates transportation, land use, and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050 connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges.

The proposed project would support the overarching intent of Plan Bay Area 2050 by reducing GHG emissions within San Rafael from both residential and non-residential development. The proposed project specifically includes transportation/land-use-related GHG reduction strategies that either reduce VMT (e.g., supporting alternative modes of transportation, including bicycles and transit) or reduce emissions associated with vehicle travel on the technology side (e.g., electrification of vehicles by providing EV chargers). The proposed project would bring multifamily housing to a site that is both a Priority Development Area (PDA) under Plan Bay Area 2050 and, except for its northwesternmost corner, a Transit Priority Area (TPA). The proposed project site is a designated PDA and a TPA because it is well served by passenger rail and bus services. In addition, the project would comply with regulations such as the City's Employer Trip Reduction requirements and the City's clean-air vehicle parking regulations.

The proposed project VMT analysis concluded that both Phase 1 and Phase 2 would have a less than significant VMT impact under 2019 baseline and 2040 cumulative scenarios based on the City's established significance thresholds. Therefore, the proposed project would support and not conflict with applicable goals and strategies set forth in the Plan Bay Area 2050.

Conclusion. As described above, the proposed project would result in a net decrease in GHG emissions as compared to the existing uses. The project also consists of infill development and includes many sustainable design features. The proposed project would comply with the City's

CCAP 2030 and would support the VMT reduction goals included in the CARB Mobile Source Strategy and Plan Bay Area 2050. However, because the proposed project would include the use of natural gas in the proposed commercial kitchens, the proposed project would not meet the project design thresholds recommended by the BAAQMD and would be considered inconsistent with the long-term State GHG reduction goals and emission targets outlined in AB 32, SB 32, EO B-30-15, EO B-48-18, and AB 1279. As such, the proposed project would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This impact would be ***significant and unavoidable***.

4.11.2.3 Cumulative Impacts

GHG impacts are by their nature cumulative impacts. Localized impacts of climate change are the result of the cumulative impact of global emissions. The combined benefits of reductions achieved by all levels of government help to slow or reverse the growth in GHG emissions. In the absence of comprehensive international agreements on appropriate levels of reductions achieved by each country, another measure of cumulative contribution is required. This serves to define the State's share of the reductions regardless of the activities or lack of activities of other areas of the United States or the world. Therefore, a cumulative threshold based on consistency with State targets and actions to reduce GHGs is an appropriate standard of comparison for significance determinations.

As described above in Section 4.11.2.2, CARB most recently updated the Scoping Plan in 2022 to include a framework to meet the State's carbon neutrality goals by 2045, and the BAAQMD has determined that projects need to incorporate design elements to do their "fair share" of implementing that goal. If a project is designed and built to incorporate the design elements, then it will contribute its portion of what is necessary to achieve its "fair share" and it can be concluded that the project would result in a less than significant impact related to GHG emissions. If a project does not incorporate these design elements, then a project would result in a significant GHG impact. As described above, the proposed project would not be consistent with the BAAQMD's project design elements included under "Threshold A" due to the inclusion of natural gas connections for potential natural gas use in the proposed commercial kitchens. Mitigation to prohibit the use of natural gas in proposed restaurants was found to be infeasible. Therefore, the proposed project would result in the generation of GHG emissions that would have a significant impact on the environment, and the cumulative GHG impacts would be considered ***significant and unavoidable***.

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4.12 NOISE

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from construction and operation of the proposed project. Standard conditions of approval and/or mitigation measures to reduce or avoid potentially significant noise and vibration impacts are identified, where appropriate.

In addition to the references listed in this section, a Noise and Vibration Technical Report[1] (Technical Report) was prepared for the proposed project. This report was utilized in the analysis provided in this section, and is provided in Appendix J. Additionally, the Technical Report was peer reviewed.[2]

4.12.1 Setting

This section describes the fundamentals of noise and vibration, summarizes the regulatory framework, and describes the existing noise environment of the project site and its vicinity.

4.12.1.1 Characteristics of Sound

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve as explained below. Table 4.12.A contains a list of typical acoustical terms and definitions. Figure 4.12-1 shows representative outdoor and indoor noise levels in units of A-weighted decibels (dBA).

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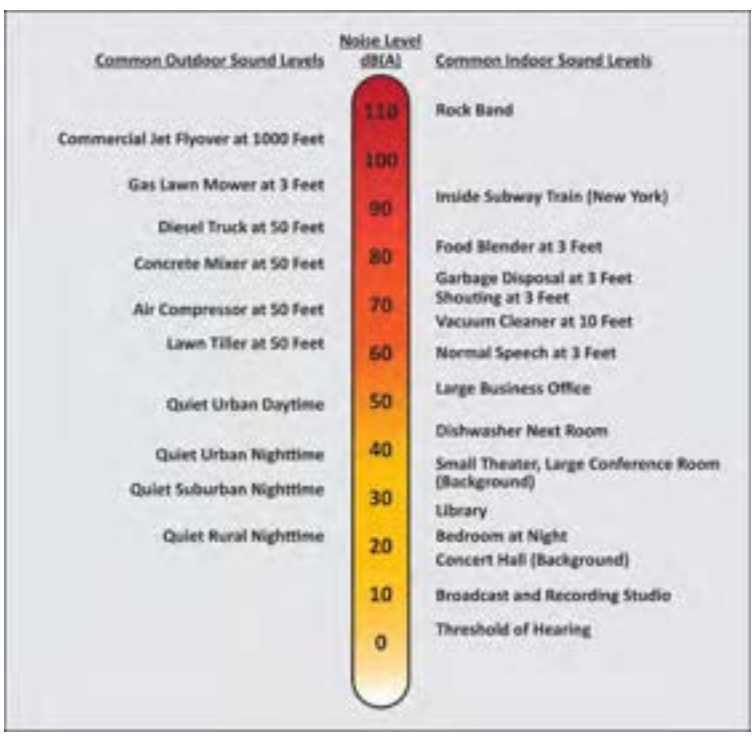
1 Dudek. 2023. *Northgate Town Square Project Noise and Vibration Technical Report.* December.

2 LSA Associates, Inc. 2023. *Peer Review of the Northgate Town Square Project Noise and Vibration Technical Report.* October.

Table 4.12.A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1998).



Source: Compiled by LSA (2016).

Figure 4.12-1: Typical A-Weighted Sound Levels

A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of noise over a sample period of time. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the Community Noise Equivalent Level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the noise over a 24-hour period, with a 5 dBA increase (referred to as a "weighting factor") applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours), to recognize that people may be more sensitive to noise during those times. L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described on Figure 4.12-1.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_n, are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dBA or greater, because, as described earlier, this level of noise change has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers

to a change in the noise level between 1 and 3 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected, and a 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response. Only audible changes in existing ambient noise levels are considered potentially significant.

Physiological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization (WHO) noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.[3]

4.12.1.2 Characteristics of Ground-Borne Vibration

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration spreads from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as vibration velocity in units of decibels. To distinguish vibration levels from noise levels, the unit is written as “VdB.” Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. Vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment.

[3] World Health Organization (WHO). 1999. *Guidelines for Community Noise*.

4.12.1.3 Existing Noise Environment

The ambient noise environment in San Rafael is affected by a variety of noise sources, including vehicle traffic, aircraft, commercial, and industrial noise. The following section describes the existing noise environment and identifies the primary noise sources in the vicinity of the project site.

Existing Traffic Noise. Motor vehicles with their distinctive noise characteristics are a major source of noise in San Rafael. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Traffic noise depends primarily on traffic speed (high-frequency tire noise increases with speed) and the proportion of truck traffic, which generates engine, exhaust, and wind noise. The proximity of freeways and major streets, and the large amount of truck traffic serving commercial uses in the area make the city susceptible to traffic noise. Traffic noise at the project site is primarily associated with vehicle traffic on Northgate Drive, United States Route 101 (US-101), and the Manuel T. Freitas Parkway.

Existing Commercial Noise. Commercial activity from the parking lots associated with commercial uses, including the existing project site, and mechanical ventilation noise from commercial and residential uses add to the existing ambient noise environment. Truck access and loading/unloading activities at commercial uses also add to the ambient noise environment sporadically.

Existing Aircraft Noise. As regulated by Federal Aviation Regulations Part 150, 65 dBA CNEL is considered the ambient noise level above which residential and other noise-sensitive land uses (including schools, hospitals, and places of worship) are considered incompatible with airport activity. For each public airport, a noise assessment is completed to determine the extent of noise generated from daily operations, also referred to as contours. The contours act as sort of a boundary at which noise levels would be exceeded relative to the airport. The nearest airport to the project site is the San Rafael Airport, a small private airport located approximately 1 mile northeast of the project site. The 55 dBA L_{dn} contour for airplane noise is over 4,000 feet away from the project site, and the 65 dBA L_{dn} noise contour is within the airport property limits; hence, aviation noise exposures from this facility would be less than 65 dBA L_{dn}.[4] The nearest public airport to the project site is the Marin County Airport at Gnoss Field in Novato, approximately 9 miles to the north. The project site is located over 8.6 miles south of the 65 dBA CNEL contour.

The project site is also over 23 miles northwest of the nearest 65 dBA L_{dn} aviation noise contour of Oakland International Airport[5] and over 25 miles beyond the nearest San Francisco International Airport[6] 65 dBA L_{dn} contour.

Although aircraft-related noise is occasionally audible on the project site, the site does not lie within the 65 dBA L_{dn} noise contours of any of these airports.

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4 City of San Rafael. 2009. *San Rafael Airport Recreational Facility, Draft Environmental Impact Report.* SCH No. 2006012125. March.

5 Port of Oakland. 2016. *2016 Oakland International Airport Master Plan,* Figure 6.17.

6 San Francisco International Airport (SFIA). 2015. *14 CFR Part 150 Noise Exposure Map Report,* Exhibit 5-1. August.

Existing Sensitive Land Uses. Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, transient lodging, educational facilities, hospitals, childcare facilities, and senior housing. The project site is surrounded by a mix of uses, including commercial, residential, open space, and institutional. Based on this understanding and for purposes of environmental review, the off-site sensitive receptors nearest to the project area or surface roadway segments likely to experience changes in noise due to the project are as follows:

- AlmaVia of San Rafael, an assisted living facility south of the project site
- Single-family homes on Sao Augustine Way and Nova Albion Way near the southern end of the project site along Northgate Drive
- Quail Hill Townhouses on El Faisan Drive south of the project site
- Villa Marin on Thorndale Drive west of the project site
- The Northview Apartments and Terra Linda Manor on Las Gallinas Avenue farther west of the site, at the intersection of Las Gallinas Avenue and Nova Albion Way
- Single-family homes between Elena Circle and Las Gallinas Avenue to the northwest of the project site
- Single-family homes between Orange Blossom Lane and Manuel T. Freitas Parkway to the north of the project site

Although directly east of the project site, across Las Gallinas Avenue, the Mt. Olivet San Rafael Cemetery is not considered a noise-sensitive receptor because the City's 2040 General Plan Noise Element classifies cemeteries as within the same land use category as "golf courses", with a "normally acceptable" exterior noise exposure level of 70 dBA L_{dn}—unlike 60 dBA L_{dn} for single-family residences or 65 dBA L_{dn} for multi-family uses. General Plan Policy N-1.2(b) would appear to set 70 dBA L_{dn} as the limit for the cemetery. Further, there is no special provision for cemeteries in the San Rafael noise regulations.

Ambient Noise Level Monitoring. To assess the existing noise conditions in the project vicinity, noise measurements were conducted at the project site. One long-term (24-hour) measurement was taken from December 1, 2021, to December 2, 2021. Additionally, four short-term (15-minute) measurements were taken on December 1, 2021. Based on noise measurement results, the uses in the vicinity of the project site are exposed to noise levels between 47.8 dBA L_{eq} and 63.6 dBA L_{dn}, which are primarily associated with vehicle traffic noise. The results are summarized in Table 4.12.B below. Noise measurement data information is provided in Appendix A of the Technical Report (Appendix J to this Environmental Impact Report [EIR]).

Table 4.12.B: Existing Noise Level Measurements

Location No.	Location Description	Daytime Noise Levels[1] (dBA L_{eq})	Nighttime Noise Levels[2] (dBA L_{eq})	Average Daily Noise Levels (dBA L_{dn})	Primary Noise Sources
LT-1	Northgate Drive	54.12–63.6	45.7–56.6	59.3	Ambient traffic noise
ST-1	AlmaVia of San Rafael	61.1	–	–	Ambient traffic noise
ST-2	Nova Albion Way	62.0	–	–	Ambient traffic noise
ST-3	Quail Hill Townhouses (on La Perdiz Court)	52.7	–	–	Ambient traffic noise
ST-4	Villa Marin (on Thorndale Drive)	47.8	–	–	Ambient traffic noise

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
[1] Daytime Noise Levels = noise levels during the hours between 7:00 a.m. and 7:00 p.m.
[2] Nighttime Noise Levels = noise levels during the hours between 10:00 p.m. and 7:00 a.m.
L_{dn} = day-night average noise level
L_{eq} = equivalent continuous sound level
dBA = A-weighted decibels

4.12.1.4 Regulatory Framework

The following section provides brief discussions of the federal and local regulatory framework related to noise.

Federal Transit Administration. The criteria for environmental impacts resulting from ground-borne vibration and noise are based on the maximum levels for a single event. The City of San Rafael (City) Municipal Code does not include specific criteria for assessing vibration impacts associated with structural damage. Therefore, for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project site, the guidelines within the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (2018) (FTA Manual) have been used to determine vibration impacts associated with potential damage and are presented in Table 4.12.C below.

Table 4.12.C: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: Table 12-3, *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity

The FTA Manual guidelines show that a vibration level of up to 0.12 inches per second (in/sec) in PPV is considered safe for buildings extremely susceptible to vibration damage and would not result in any construction vibration damage. Therefore, to be conservative, the 0.12 in/sec PPV threshold has been used when evaluating vibration impacts at the nearest structures to the site (i.e., an approved storage building north of the project site).

To provide numerical thresholds related to ground-borne vibration impacts, criteria included in the FTA Manual for human annoyance are shown in Table 4.12.D. The criteria account for the variation in project types as well as the frequency of events, which differ widely among projects. It is logical that when there would be fewer events per day, it should take higher vibration levels to evoke the same community response. The variation in project times and the frequency of events is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, in which the term "frequent events" is defined as more than 70 events per day.

Table 4.12.D: Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 µin/sec)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Source: Table 8-1, *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

[1] Frequent events are defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

[2] Occasional events are defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.

[3] Infrequent events are defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

µin/sec = microinches per second
FTA = Federal Transit Administration
HVAC = heating, ventilation, and air-conditioning
VdB = vibration velocity decibels

State of California. California Government Code Section 65302(g) requires the preparation of a Noise Element in a general plan, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources:

- Highways and freeways
- Primary arterials and major local streets
- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport-related operations
- Local industrial plants
- Other ground stationary noise sources contributing to the community noise environment.

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not

applicable to planning efforts, nor are these areas typically subject to California Environmental Quality Act (CEQA) analysis. State noise regulations and policies applicable to the project include Title 24 requirements and noise exposure limits for various land use categories.

The 2019 California Building Code (CBC) (Part 2, Title 24, Section 1204.12, California Code of Regulations [CCR]) stipulates "interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL)."[7]

City of San Rafael. The City addresses noise in the Noise Element of the General Plan[8] and in the Municipal Code.

San Rafael General Plan. The Noise Element of The City of San Rafael General Plan 2040 sets goals and policies for ensuring compatibility between outdoor ambient noise environments and existing and proposed land uses within. These goals include land use compatibility noise standards akin to State guidelines appearing. The goals, policies, and programs that would relate to the Project are reproduced as follows:

Goal N-1: Acceptable Noise Levels. Protect the public from excessive unnecessary, and unreasonable noise. Excessive noise is a concern for many residents of San Rafael. This concern can be addressed through the implementation of standards to protect public health and reduce noise conflicts in the community, including the Noise Ordinance.

Policy N-1.1. Land Use Compatibility Standards for Noise. Protect people from excessive noise by applying noise standards in land use decisions. The Land Use Compatibility standards in Exhibit D of the Noise and Vibration Technical Report are adopted by reference as part of this General Plan and shall be applied in the determination of appropriate land uses in different ambient noise environments.

Program N-1.1A: Residential Noise Standards. Maintain a maximum noise standard of 70 L_{dn} dB for backyards, decks, and common/usable outdoor spaces in residential and mixed- use areas. As required by Title 24 insulation requirements, interior noise levels shall not exceed 45 L_{dn} in all habitable rooms in residential units.

Policy N-1.2. Maintaining Acceptable Noise Levels. Use the following performance standards to maintain an acceptable noise environment in San Rafael:

(a) New development shall not increase noise levels by more than 3 dB L_{dn} in a residential area, or by more than 5 dB L_{dn} in a non-residential area.

(b) New development shall not cause noise levels to increase above the "normally acceptable" levels.

(c) For larger projects, the noise levels in (a) and (b) should include any noise that would be generated by additional traffic associated with the new development.

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7 Dudek. 2023. *Northgate Town Square Project Noise and Vibration Technical Report.* December.

8 City of San Rafael. 2021. *San Rafael General Plan 2040, Noise Element.* August 2.

(d) Projects that exceed the thresholds above may be permitted if an acoustical study determines that there are mitigating circumstances (such as higher existing noise levels) and nearby uses will not be adversely affected.

Program N-1.2A: Acoustical Study Requirements. Require acoustical studies for new single- family residential projects within the projected 60 dB L_{dn} noise contour and for multi-family or mixed-use projects within the projected 65 dB L_{dn} contour. The studies should include projected noise from additional traffic, noise associated with the project itself, and cumulative noise resulting from other approved projects. Mitigation measures should be identified to ensure that noise levels remain at acceptable levels.

Policy N-1.3. Reducing Noise Through Planning and Design. Use a range of design, construction, site planning, and operational measures to reduce potential noise impacts.

Program N-1.3A: Site Planning. Where appropriate, require site planning methods that minimize potential noise impacts. By taking advantage of terrain and site dimensions, it may be possible to arrange buildings, parking, and other uses to reduce and possibly eliminate noise conflicts. Site planning techniques include:

(a) Maximizing the distance between potential noise sources and the receiver.

(b) Placing non-sensitive uses such as parking lots, maintenance facilities, and utility areas between the source and receiver.

(c) Using non-sensitive uses such as garages to shield noise sensitive areas.

(d) Orienting buildings to shield outdoor spaces from noise sources.

(e) Incorporating landscaping and berms to absorb sound.

Program N-1.3B: Architectural Design. Where appropriate, reduce the potential for noise conflicts through the location of noise-sensitive spaces. Bedrooms, for example, should be placed away from freeways. Mechanical and motorized equipment (such as air conditioning units) should be located away from noise-sensitive rooms. Interior courtyards with water features can mask ambient noise and provide more comfortable outdoor spaces.

Policy N-1.5: Mixed Use. Mitigate the potential for noise-related conflicts in mixed use development combining residential and nonresidential uses.

Program N-1.5A: Disclosure Agreements. Where appropriate, require disclosure agreements for residents in mixed use projects advising of potential noise impacts from nearby commercial enterprises, such as restaurants and entertainment venues.

Policy N-1.9: Maintaining Peace and Quiet. Minimize noise conflicts resulting from everyday activities such as construction, sirens, yard equipment, business operations, night-time sporting events, and domestic activities.

Program N-1.9B: Construction Noise. Establish a list of construction best management practices (BMPs) for future projects and incorporate the list into San

Rafael Municipal Code Chapter 8.13 (Noise). The City Building Division shall verify that appropriate BMPs are included on demolition, grading, and construction plans prior to the issuance of associated permits.

Policy N-1.11: Vibration. Ensure that the potential for vibration is addressed when transportation, construction, and nonresidential projects are proposed, and that measures are taken to mitigate potential impacts.

Program N-1.11A: Vibration-Related Conditions of Approval. Adopt Standard conditions of approval in San Rafael Municipal Code Chapter 8.13 (Noise) that apply Federal Transit Administration (FTA) criteria for acceptable levels of groundborne vibration for various building types. These conditions should:

(a) Reduce the potential for vibration-related construction impacts for development projects near sensitive uses such as housing, schools, and historically significant buildings.

(b) Reduce the potential for operational impacts on existing or potential future sensitive uses such as uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) or residences.

Vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects. If vibration levels exceed FTA limits, conditions of approval shall identify construction and operational alternatives that mitigate impacts.

San Rafael Municipal Code. The City of San Rafael establishes its noise regulations in Chapter 8.13 of its municipal code. Exterior noise limits are based on what is measured at the property of the receiver, the time of day, and the type of sound as reproduced in Table 4.12.E from Table 8.13-1 of Section 8.13.040. These two types of sound are defined in Section 8.13.020 as follows:

a) “Constant noise" means a continuous noise produced where there is no noticeable change in the level of the noise source. Examples would include such noises as those associated with air conditioners and pool equipment.

b) "Intermittent" noise means repetitive noises where there is a distinction between the onset and decay of the sound. Examples would include hammering and dog barking .

Per Section 8.13.050.A of the municipal code and treated as a standard exception to the exterior noise limits shown in Table 4.12.E, construction activity and its noise emission is allowed between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and 9:00 a.m. and 6:00 p.m. on Saturdays, provided the noise level at any point outside of the property plane of the project shall not exceed 90 dBA L_{max}. Further, all such activities shall be precluded on Sundays and holidays.

Another exception to the Table 4.12.E limits that would apply to the project is Section 8.13.050.C, which pertains to sound performances and states as follows:

Notwithstanding anything in this chapter to the contrary, on public property or any other open area to which the public has access, whether publicly or privately

Table 4.12.E: Noise Limits From the City Municipal Code

Receiving Land Use Category	Exterior Noise Limits at the Receiving Land Use			
	Daytime[1]		Nighttime[2]	
	Constant (L_{eq})	Intermittent (L_{max})	Constant (L_{eq})	Intermittent (L_{max})
Residential Property	50	60	40	50
Mixed-Use Property	55	65	45	55
Commercial Property	55	65	55	65
Industrial Property	60	70	60	70
Public Property	–[3]	–[3]	–[3]	–[3]

Source: City of San Rafael Municipal Code. Section 8.13.040.

[1] Daytime is defined as from 7:00 a.m. to 9:00 p.m. Sunday through Thursday and 7:00 a.m. to 10:00 p.m. on Friday and Saturday.

[2] Nighttime is defined as from 9:00 p.m. to 7:00 a.m. Sunday through Thursday and 10:00 p.m. to 7:00 a.m. on Friday and Saturday.

[3] The limit is defined as the "most restrictive noise limit applicable to adjoining private property."

L_{eq} = equivalent continuous sound level

L_{max} = maximum noise level

owned, sound-generating devices or instruments used for any indoor or outdoor sound performances, athletic events, and special events shall be permitted, provided they do not exceed a noise level of eighty (80) dBA measured at a distance of not less than fifty feet (50') from the property plane or such other limit as may be established by any required approvals and permits therefor obtained from the appropriate governmental entity. Except pursuant to an approved special event, street closure or parade permit, the use of any sound-generating device or instrument for such performances or events between the hours of ten p.m. (10:00 p.m.) and ten a.m. (10:00 a.m.) is unlawful.

4.12.2 Impacts and Mitigation Measures

This section discusses potential noise and vibration impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies applicable mitigation measures, as appropriate.

4.12.2.1 Significance Criteria

The following thresholds of significance were adapted from Appendix G of the *State CEQA Guidelines* and the specific thresholds identified in the City's Municipal Code. Based on these thresholds, implementation of the proposed project would have a significant impact related to noise and vibration if it would:

Threshold 4.12.1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project site in excess of standards established in the City of San Rafael General Plan or Noise Ordinance, or industry standards determined by the City to be applicable;

Threshold 4.12.2: Generate excessive ground-borne vibration or ground-borne noise levels; or

Threshold 4.12.3: Expose people residing or working in the area to excessive noise levels associated with proximity to a private airport or public use airport or within and airport land use plan.

To apply the significance criteria listed above for Thresholds 4.12.1, 4.12.2 and 4.12.3, the analysis in this section uses the following thresholds, which are based on the San Rafael General Plan and Noise Ordinance as well as the Federal Aviation Administration and accepted noise level increase thresholds used by other jurisdictions.

Threshold 4.12.1: Increases in Ambient Noise Levels. The following thresholds are used to determine whether the proposed project would result in a substantial temporary or permanent increase in ambient noise levels in the project vicinity that would exceed applicable thresholds.

Construction Noise. The proposed project would result in a significant impact when construction noise exceeds 90 dBA L_{max} at the project property line, per the City's Noise Ordinance. Additionally, the assessment herein evaluates an hourly L_{eq} value associated with predicted project construction noise and compares it to pre-project L_{eq} for the purpose of quantifying and disclosing the anticipated increase over baseline ambient environmental sound levels at off-site noise-sensitive receptors. In this context, the City has determined that an increase of more than 10 dB (perceived as a doubling of loudness) would be considered significant per CEQA impact assessment even if the City's 90 dBA L_{max} regulation was satisfied at the project property boundary.

Project-Attributed Change to Roadway Traffic Noise. The proposed project would result in a significant impact related to traffic noise if it results in a change to the outdoor noise environment due to project-attributed changes to existing and future roadway traffic noise greater than 3 dB L_{dn} in a residential area or greater than 5 dB L_{dn} in a non-residential area, or that would cause outdoor ambient noise to exceed 60 dBA L_{dn} at the exteriors of single-family residences or 65 dBA L_{dn} for multi-family land uses unless existing outdoor ambient L_{dn} values already exceed these "normally acceptable" limits as shown in the General Plan Noise Element. Consistent with the City's General Plan Policy N-1.1A, 70 dBA L_{dn} is the maximum exposure level from this sound source.

Project-Attributed Stationary Source Noise Emission to the Community. The proposed project would result in a significant impact related to stationary sources if it results in a change to the outdoor sound environment due to project-attributed stationary noise sources greater than 3 dB L_{dn} in a residential area or greater than 5 dB L_{dn} in a non-residential area, or that would cause outdoor ambient noise to exceed 60 dBA L_{dn} at the exteriors of single-family residences or 65 dBA L_{dn} for multi-family land uses unless existing outdoor ambient L_{dn} values already exceed these "normally acceptable" limits as shown in the General Plan Noise Element. Additionally, under the City's Noise Ordinance, project stationary source noise as received by residential and

mixed-use properties would need to comply with the L_{eq} and L_{max} limits appearing in Table 4.12.E.

Additionally, a significant impact would occur when the project on-site event venue features amplified live performances or playback of pre-recorded music or speech between the hours of 10:00 a.m. and 10:00 p.m., if sound exceeds the threshold of 80 dBA L_{max} at a distance of 50 feet within the project boundary, or any audible amplified sound from 10:00 p.m. to 10:00 a.m. the following day. Per 8.13.050.C of the City's municipal code, this limit applies only to the "sound-generating devices" and not crowd noise from participants attending the event.

Threshold 4.12.2: Construction Vibration Impacts. The proposed project would result in a significant impact if it generates 72 VdB within the interior of an off-site residential building, which is associated with "frequent events" threshold value per FTA guidance. For building damage risk to these existing off-site residential buildings, the thresholds would vary by their known or anticipated structural type or condition. By way of example, a typical single-family home could reasonably be classified as a Type III "non-engineered timber and masonry buildings" and thus have a 0.2 in/sec PPV threshold. Should a home or other receiving structure be classified as potentially historic and thus more sensitive to potential damage, the 0.12 in/sec PPV threshold may be more appropriate to use under the right conditions.

In *California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, the California Supreme Court concluded that CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents.[9] However, as with other laws and regulations enforced by other agencies that protect public health and safety, the City as the lead agency has authority, other than CEQA, to require measures to protect public health and safety. Therefore, this EIR includes an evaluation of the environment's impacts on the proposed project. The evaluation includes an assessment of the project's potential to locate residential land uses in an area considered to be "conditionally acceptable" in the City's noise and land use compatibility standards.

4.12.2.2 Project Impacts

The following section discusses the potential noise and vibration impacts associated with implementation of the proposed project. As discussed in Chapter 3.0, Project Description, the proposed project includes demolition and renovation of the existing Northgate Mall, and the construction and operation of a mix of commercial and residential land uses at the proposed project site. The proposed development would occur in two phases. The buildout of Phase 1 would include the demolition of approximately 308,946 square feet of existing commercial space and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units and would be completed by 2025. Buildout of Phase 2 is expected to occur by 2040, and would include the demolition of approximately 339,861 square feet of existing commercial space and construction of up to 55,440 square feet of commercial space and up to 500 additional residential units. At full buildout, the proposed project would include a total of up to approximately 217,520 square feet of

[9] California Supreme Court. 2015. *California Building Industry Association v. Bay Area Air Quality Management District 62 Cal. 4th 369, Case No. S213478*. December.

commercial space and up to 1,422 residential units in six buildings (1,746,936 square feet of residential area).

At the completion of Phase 1, on-site sensitive receptors would include occupants of multi-story buildings represented by Residential Parcels 1, 2, 3 and 4. Completion of Phase 2 would generate additional on-site sensitive receptors represented by occupants of new buildings at Residential Parcels 5 and 6. The potential impacts that would occur with implementation of Phase 1 and Phase 2 are differentiated by phase in this section.[10]

Threshold 4.12.1: Increases in Ambient Noise Levels. The following addresses the potential for the proposed project to result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project site in excess of standards established in the City of San Rafael General Plan or Noise Ordinance or otherwise determined by the City to be applicable. Construction and operation period impacts are addressed.

Construction Noise. The applicable maximum construction noise level standard is presented in Section 8.13.050 of the City's Municipal Code. Additionally, based on precedents from other jurisdictions examining increases in noise during construction, a noise increase of 10 dBA over ambient conditions attributed to the proposed project would result in a significant impact. An increase of 10 dBA is considered a perceived doubling of sound intensity and therefore would result in an adverse condition over ambient conditions. The following describes the short-term construction noise impacts of the proposed project, and is based on the analysis and conclusions of the Technical Report[11] prepared for the proposed project and which is included in Appendix J. As discussed, these impacts would be less than significant with mitigation.

To estimate aggregate project-attributed construction noise exposure at seven of the nearest off-site receptors over the course of project construction activities, and thus provide input to evaluate an increase in outdoor ambient noise at these positions, the following summarized methodology and assumptions were adopted along with detailed information on the reference source sound levels from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) User's Guide. The same methodology is used in considering project Phase 2 construction noise effects on Phase 1 on-site receptors. The analysis applies an FHWA RCNM emulator to evaluate aggregate construction equipment noise levels by listed phase for both L_{max} and L_{eq}, whereby the latter includes application of the equipment "acoustical usage factor" (AUF) that describes—based on FHWA RCNM reference values—what portion of time that equipment is actually working under full load conditions or otherwise emitting noise at its L_{max} value. The results of the construction noise assessment are presented in Appendix B of the Technical Report.

10 Although this analysis discusses the potential impacts of Phase 1 and Phase 2 development as projected to occur in the years 2025 and 2040, respectively, it is acknowledged that potential development could be accelerated or slowed, depending on market conditions.

11 Dudek. 2023. *Northgate Town Square Project Noise and Vibration Technical Report.* December.

The predictive analysis herein locates one or multiple sound-emitting sources (i.e., stationary and mobile equipment) associated with a distinct construction activity or phase as a collective single point at an approximate geographic position near the activity boundary considered closest to the set of studied receptors. This method is also used to determine whether or not the project would comply with the City's limit of 90 dBA L_{max} at the project boundary.

Due to the size of the project area, this approach predicts noise during each monthly period from each distinct phase or activity across the project construction period. The assumed schedule of activities is based on estimated time periods provided in Chapter 3.0, Project Description. Therefore, the total concurrent noise level at an indicated receptor for each month is estimated from the logarithmic sum of noise levels from nearby concurrent on-site construction activities. The studied construction activity locations and the seven receptors appear in Exhibit E of the Technical Report. The construction activities that could occur include anticipated operating equipment shown in Table 4.12.F. Impact or vibratory pile driving is not required for the project and therefore is not included in the construction noise analysis. Piles anticipated as part of project foundations would be cast-in-place and utilize an auger drill rig for installation.

Table 4.12.F: Modeled Construction Activities and Equipment Types

Activity Name	Anticipated Construction Equipment Types
Site Demolition	Excavator, dozer, hoe-ram, dump truck, welder/torch, jackhammer, flat-bed truck
Site Preparation	Excavator, dozer, front-end loader, flat-bed truck
Site Grading	Grader, scraper, front-end loader, flat-bed truck
Rough Roads	Grader, scraper, compactor, flat-bed truck
Building Erection	Crane, man-lift, auger drill rig, flat-bed truck, generator, welder/torch
Final Roads	Paver, roller, vacuum street sweeper
Architectural Finishes	Air compressor, man-lift, flat-bed truck

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).

Compliance with applicable noise standards at the seven studied receptors would imply that construction activities at more distant receptors would also be compliant; therefore, additional receptors farther away from the site are not specifically analyzed. After completion of Phase 1 of the project, there would be newly occupied noise-sensitive residences on site at the buildings represented by Residential Parcels 1, 2, 3 and 4. Potential construction period impacts associated with Phases 1 and 2 are potentially significant and are discussed further below.

Impact NOI-1 Construction of the proposed project would result in a significant short-term increase in ambient noise levels in the vicinity of the project site in excess of the thresholds established in the City of San Rafael General Plan or Noise Ordinance. (S)

Phase 1 Impacts. The noisiest expected on-site project construction activities evaluated for the proposed project are associated with the site demolition phase. The assessment conservatively assumes that during this phase, all seven listed anticipated equipment types as shown in Table 4.12.G are operating concurrently at or near a single location or within a shared zone that is no closer than 50 feet to the project boundary. Additionally, the noisiest two types of equipment, a hoe-ram and a jackhammer, would not be needed or used any closer to the project boundary than 150 feet because there are no poured concrete buildings to be demolished in these areas and no surface pavements would be demolished. Therefore, the logarithmic sum of noise emission from these two equipment types at 150 feet and noise emission from the five other equipment types at a distance of 50 feet would not exceed 88 dBA L_{max} at the project boundary. For this reason, and because all other phases or groupings of concurrently operating noise-emitting construction processes would involve fewer and/or quieter pieces of equipment, the project would comply with the City's significance threshold of 90 dBA L_{max} at the project boundary.

Table 4.12.G: Predicted Phase 1 Construction Noise (Hourly L_{eq}) at Nearest Off-Site Noise Sensitive Receptors

Activity Name	Range of Predicted Construction Noise Levels (dBA L_{eq})
RND1 (AlmaVia of San Rafael)	56–80
RSA1 (Sao Augustine Way)	58–79
RSA2 (Sao Augustine Way)	56–80
RSA3 (Sao Augustine Way)	55–77
RNA1 (Nova Albion Way)	54–79
RLP1 (La Perdiz Court)	49–69
RLP2 (La Perdiz Court)	49–72

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

While some construction equipment may actually operate on site at distances closer than 50 feet to the project boundary, they are expected to be smaller and/or less powerful than those studied in the listed phases appearing in Table 4.12.F. For example, a typical equipment pair operating as close as 15 feet to the project property line would comprise a 14-ton rated excavator and an 8-ton rated loader working together and be predicted to have a combined noise level of 79 dBA at the property line, which is well below the City's 90 dBA L_{max} standard. Furthermore, by having a predicted sound level 11 dB less than the City's standard, the combined noise from this pair of smaller equipment operating nearer to the project boundary than those listed in Table 4.12.F would, on the basis of logarithmic addition, have a negligible cumulative effect that would not compromise project construction noise compliance as discussed in the following paragraphs. By way of illustration, the site demolition phase 88 dBA L_{max} value at the project property line estimated in the preceding paragraph added logarithmically to 79 dBA estimate for the smaller excavator-and-loader pairing would result in 88.5 dBA and thus still be compliant with the City's limit.

Table 4.12.G presents highest predicted hourly L_{eq} construction noise level exposures at the seven studied receptors nearest to anticipated concurrent construction of Phase 1.

Table 4.12.H presents the estimated pre-project hourly L_{eq} values at the studied off-site receptors, the predicted project-attributed Phase 1 construction hourly L_{eq} values from Table 4.12.G, the logarithmic sums of these two values, and the corresponding hourly L_{eq} increases (i.e., the arithmetic difference between the log-sum value and the existing sound level).

Table 4.12.H: Predicted Phase 1 Increase of Outdoor Ambient Noise at Off-Site Noise Sensitive Receptors

Activity Name	Existing Hourly (dBA L_{eq})	Highest Phase 1 Hourly Level (dBA L_{eq})	Combined Ambient and Construction Noise Level (dBA L_{eq})	Increase Over Existing Level (dBA L_{eq})	Potentially Significant Impact
RND1 (August-October 2024)	63.4	80	80.1	16.7	Yes
RND1 (March-July 2024)	63.4	78	78.1	14.7	Yes
RND1 (remaining schedule)	63.4	71	71.7	8.3	No
RSA1 (July-September 2024)	64.3	79	79.1	14.8	Yes
RSA1 (February-June 2024)	64.3	77	77.2	12.9	Yes
RSA1 (remaining schedule)	64.3	71	71.8	7.5	No
RSA2 (July-September 2024)	64.3	80	80.1	15.8	Yes
RSA2 (February-June 2024)	64.3	78	78.2	13.9	Yes
RSA2 (remaining schedule)	64.3	71	71.8	7.5	No
RSA3 (July-September 2024)	64.3	77	77.2	12.9	Yes
RSA3 (February-June 2024)	64.3	75	75.4	11.1	Yes
RSA3 (remaining schedule)	64.3	67	68.9	4.6	No
RNA1 (July-September 2024)	64.3	79	79.1	14.8	Yes
RNA1 (February-June 2024)	64.3	77	77.2	12.9	Yes
RNA1 (Nov. 2024 to June 2026)	64.3	70	71.0	6.7	No
RNA1 (remaining schedule)	64.3	63	66.7	2.4	No
RLP1 (June-August 2024)	53.6	69	69.1	15.5	Yes
RLP1 (Jan.-May 2024, Sept. 2024)	53.6	67	67.2	13.6	Yes
RLP1 (remaining schedule)	53.6	63	63.5	9.9	No
RLP2 (June-August 2024)	53.6	72	72.1	18.5	Yes
RLP2 (January-May 2024)	53.6	70	70.1	16.5	Yes
RLP2 (September 2024)	53.6	66	66.2	12.6	Yes
RLP2 (remaining schedule)	53.6	63	63.5	9.9	No

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

Table 4.12.H illustrates at which studied off-site receptors and within which construction periods, project-attributed construction noise hourly L_{eq} would cause an increase in the outdoor ambient sound level to be greater than existing estimated hourly L_{eq} by more 10 dB and thereby result in a significant impact based on the 10 dB relative increase noise threshold. Implementation of Mitigation Measure NOI-1 would reduce these predicted increases in outdoor ambient noise level at these closest off-site noise-sensitive receptors to less than or equal to 10 dB. Specific calculations of the proposed barrier for various conditions are presented in the Technical Report. In addition, implementation of Best Management Practices (BMPs) during the construction period would be required to be

implemented per the City's General Plan and would further ensure that construction period noise is reduced to the maximum extent practicable.

Mitigation Measure NOI-1 **Sound Barriers.** The City of San Rafael (City) Director of Community Development, or designee, shall verify prior to issuance of demolition or grading permits that the approved plans require that the construction contractor implement the following measures during project construction activities:

- Temporary noise barriers or shrouds shall be installed (featuring materials and methods of assembly and installation that yields a sound transmission class [STC] of 20 or better) near the operating equipment in a safe, feasible, and practical manner to break sound paths between it and the on-site noise-sensitive receptors (e.g., single- or multi-family residences) of concern.
- During Phase 1 of construction, the temporary barriers shall be a minimum of 10 feet tall.
- During Phase 2 of construction, the barriers shall be a minimum of 11 feet tall. (LTS)

The measures described under Mitigation Measure NOI-1 would implement a temporary construction barrier near construction activities during Phase 1 at a height of 10 feet. These measures would ensure that short-term construction period impacts associated with temporary increases in ambient noise levels during Phase 1 would be reduced to below established thresholds and would ensure that this impact would be **less than significant with mitigation**.

The following additional BMPs would also be expected by the City consistent with its General Plan Noise Element activities and would further reduce potential construction period noise impacts:

- Utilize the best available and factory-approved noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) on stationary and mobile construction equipment and vehicles.
- Require the contractor to use impact tools (e.g., jack hammers and hoe rams) that are hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.
- Locate stationary equipment such as generators and air compressors as far as feasible from nearby noise-sensitive uses.
- Locate stockpiling as far as feasible from nearby noise-sensitive receptors.

- Limit construction traffic —to the extent feasible—to haul routes approved in advance of issuing building permits by the City.

- Require the telephone numbers of the authorized representatives for the City and the contractor that are assigned to respond in the event of a noise or vibration complaint to be displayed on construction signs posted at the construction site. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.

- Post signs at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes.

- Limit the use of noise-producing signals, including horns, whistles, alarms, and bells, to safety warning purposes only, to the extent feasible. The construction manager shall use smart backup alarms, which automatically adjust the alarm level based on the ambient noise level or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.

Phase 2 Impacts. Residences on the northern façade of the Residential Parcel 1 building would be at least 360 feet from on-site construction associated with the closest Phase 2 structure: the mixed-use Residential Parcel 6 building. Residences on the northern façade of the Residential Parcel 4 building would be as close as 100 feet from on-site construction associated with the closest Phase 2 structure: the Residential Parcel 5 building. To assess potential exceedance of the City's noise thresholds at the exteriors or exterior use areas of these Residential Parcel 1 and Residential Parcel 4 buildings, and using the equipment types appearing in Table 4.12.F, construction of other Phase 2 structures and improvements would be further away and thus expected to cause lower noise exposure levels than these studied on-site assessment scenarios. Similarly, because new occupants of Residential Parcel 2 townhomes and the Residential Parcel 3 building would be more than 360 feet from the construction of the nearest Phase 2 improvements, and new or renovated buildings associated with the Phase 1 implementation may occlude direct sound paths, construction noise exposure levels at these on-site locations would be lower than the studied scenarios for occupants of Residential Parcel 1.

Table 4.12.I presents highest predicted L_{max} noise level exposures from on-site Phase 2 construction activities at the two nearest on-site residences overlooking the activity from an upper floor Residential Parcel 1 unit and an upper floor Residential Parcel 4 unit. The supporting construction noise model confirms that while the upper floor receptors are slightly farther away, they lose some acoustical ground absorption by being high above grade, thus the upper floor receptor levels are reported to show a worst-case scenario.

Table 4.12.I: Predicted Phase 2 Construction Noise (Hourly L_{eq}) at Nearest On-Site Noise Sensitive Receptors

Activity Name	Highest Predicted Construction Noise Levels (dBA L_{max})	
	Nearest Residential Parcel 1 Receiver	Nearest Residential Parcel 4 Receiver
Site Demolition	73	86
Site Preparation	66	80
Site Grading	69	82
Rough Roads	69	82
Building Erection	67	80
Final Roads	64	78
Architectural finishes	61	75

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{max} = maximum noise level

The predicted L_{max} values appearing in Table 4.12.I are all less than the City's 90 dBA L_{max} construction noise limit and therefore would not exceed established thresholds. Table 4.12.J presents the following values at the same two studied sample on-site upper floor receptors associated with Residential Parcel 1 and Residential Parcel 4: (1) estimated pre-project hourly L_{eq} values for 2025 as predicted in the evaluation of on-site traffic noise (see discussion in subsection below); (2) the predicted Phase 2 construction noise levels; and (3) the resulting increase in outdoor ambient noise level due to Phase 2 project construction. As shown in Table 4.12.J, the nearest residence within Parcel 1 of Phase 1 is not predicted to be subjected to more than a 4.6 dB increase to the outdoor ambient sound level and, on that basis, the impact would be less than significant impact per the 10 dBA L_{eq} relative increase noise threshold.

Table 4.12.J: Predicted Phase 2 Increase of Outdoor Ambient Noise at Nearest On-Site Noise Sensitive Receptors

Activity Name	Highest Predicted Construction Noise Levels (dBA L_{max})						Potentially Significant Impact
	Nearest Residential Parcel 1 Receiver			Nearest Residential Parcel 4 Receiver			
	Estimated Hourly Noise Level in 2025 (dBA)	Highest Predicted Construction Noise Hourly (dBA L_{eq})	Increase in Outdoor Ambient Noise (dBA)	Estimated Hourly Noise Level in 2025 (dBA)	Highest Predicted Construction Noise Hourly (dBA L_{eq})	Increase in Outdoor Ambient Noise (dBA)	
Site Demolition	64.2	67	4.6	63.6	80	16.5	Yes
Site Preparation	64.2	62	2.0	63.6	76	12.6	Yes
Site Grading	64.2	65	3.4	63.6	78	14.6	Yes
Rough Roads	64.2	65	3.4	63.6	78	14.6	Yes
Building Erection	64.2	61	1.7	63.6	74	10.8	Yes
Final Roads	64.2	58	0.9	63.6	71	8.1	No
Architectural finishes	64.2	57	0.8	63.6	70	7.3	No

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level
L_{max} = maximum noise level

At the nearest Parcel 4 residence, Table 4.12.J shows that the first five phases of Phase 2 construction may cause an increase to the daytime outdoor ambient hourly L_{eq} of more than 10 dBA. Therefore, implementation of Mitigation Measure NOI-1 would be required to reduce this L_{eq} increase to no more than 10 dB to ensure that this impact would be less than significant. These measures would ensure that short-term construction period impacts associated with temporary increases in ambient noise levels during Phase 2 would be reduced to below established thresholds and to the maximum extent practicable.

The measures described under Mitigation Measure NOI-1 would implement a temporary construction barrier near construction activities during Phase 2 at a height of 11 feet. These measures would ensure that short-term construction period impacts associated with temporary increases in ambient noise levels during Phase 2 would be reduced to below established thresholds and would ensure that this impact would be **less than significant with mitigation**.

Project-Attributed Change to Roadway Traffic Noise. Existing and future roadway noise levels were predicted with algorithms based on the FHWA RD-77-108 report, with adjustments to reflect "Calveno" vehicle noise emission levels as adopted by the California Department of Transportation (Caltrans). Based on details from the Technical Report appendices, Table 4.12.K, Table 4.12.L, and Table 4.12.M present the prediction results for the three scenarios as follows:

- **Baseline Plus Phase 1:** A contrast of the predicted traffic noise levels at 50 feet from the listed studied roadway segment under baseline conditions versus baseline conditions that include traffic changes due to development of Phase 1 expected to be completed in 2025.
- **Future Plus Phase 1:** A contrast of the predicted traffic noise levels at 50 feet from the listed studied roadway segment under future conditions versus baseline conditions that include traffic changes due to development of Phase 1 expected to be completed in 2025.
- **Future Plus Phase 2:** A contrast of the predicted traffic noise levels at 50 feet from the listed studied roadway segment under future conditions versus baseline conditions that include traffic changes due to Phase 2 buildout expected to be completed in 2040.

Table 4.12.K: Predicted Roadway Noise Change – Baseline Plus Proposed Project, Phase 1 (2025)

Modeled Roadway Segment	Baseline L_{dn} at 50 feet (dBA)	Baseline + Phase 1 L_{dn} at 50 feet (dBA)	Change in Traffic Noise Level (dBA)	Compliant with City General Plan?
Northgate Drive (Intersections 15 to 16)	61.8	62.8	0.9	Yes
Northgate Drive (Intersections 14 to 15)	62.0	62.9	0.9	Yes
Northgate Drive (Intersections 13 to 14)	62.0	63.0	1.0	Yes
Northgate Drive (Intersections 9 to 13)	62.8	63.5	0.6	Yes
Las Gallinas Avenue (Intersections 8 to 9)	67.1	67.4	0.4	Yes
Las Gallinas Avenue (Intersections 1 to 8)	65.8	65.9	0.1	Yes
Manuel T. Freitas Parkway (Intersections 1 to 2)	74.3	74.4	0.1	Yes

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{dn} = day-night average level

Table 4.12.L: Predicted Roadway Noise Change – Future Plus Proposed Project, Phase 1 (2025)

Modeled Roadway Segment	Future L_{dn} at 50 feet (dBA)	Future + Phase 1 L_{dn} at 50 feet (dBA)	Change in Traffic Noise Level (dBA)	Compliant with City General Plan?
Northgate Drive (Intersections 15 to 16)	62.9	63.6	0.7	Yes
Northgate Drive (Intersections 14 to 15)	63.4	64.1	0.7	Yes
Northgate Drive (Intersections 13 to 14)	63.4	64.2	0.7	Yes
Northgate Drive (Intersections 9 to 13)	64.0	64.5	0.5	Yes
Las Gallinas Avenue (Intersections 8 to 9)	67.9	68.2	0.3	Yes
Las Gallinas Avenue (Intersections 1 to 8)	66.6	66.6	< 0.1	Yes
Manuel T. Freitas Parkway (Intersections 1 to 2)	74.9	75.0	0.1	Yes

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{dn} = day-night average level

Table 4.12.M: Predicted Roadway Noise Change – Future Plus Proposed Project, Phase 2 (2040)

Modeled Roadway Segment	Future L_{dn} at 50 feet (dBA)	Future + Phase 2 L_{dn} at 50 feet (dBA)	Change in Traffic Noise Level (dBA)	Compliant with City General Plan?
Northgate Drive (Intersections 15 to 16)	62.9	63.5	0.6	Yes
Northgate Drive (Intersections 14 to 15)	63.4	63.9	0.5	Yes
Northgate Drive (Intersections 13 to 14)	63.4	63.9	0.5	Yes
Northgate Drive (Intersections 9 to 13)	64.0	64.2	0.1	Yes
Las Gallinas Avenue (Intersections 8 to 9)	67.9	68.3	0.4	Yes
Las Gallinas Avenue (Intersections 1 to 8)	66.6	66.7	0.1	Yes
Manuel T. Freitas Parkway (Intersections 1 to 2)	74.9	75.0	0.1	Yes

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{dn} = day-night average level

For all three studied traffic noise scenarios that involve contribution from the proposed project, changes to the traffic noise levels (expressed as an L_{dn} value) at noise sensitive receivers along the studied roadway segments would be less than 3 dBA and thus consistent with the requirements of the City's 2040 General Plan. As such, these predictions indicate that project changes to community traffic noise levels would represent a **less than significant** impact.

Project-Attributed Stationary Source Noise Emission to the Community. The expected sources of noise emission from within the project site boundary can include a variety of on-site intermittent acoustical contributors such as modest amplified music from outdoor dining or other commercial areas (or what may be the result of interior space music momentarily emanating from an open door), speech from pedestrians or patrons of an outdoor dining area, audible safety or security alarms, and occasional vehicle door closures and associated low-speed vehicle movements or idling engines on parking areas. But of larger concern are stationary sources of noise such as electro-mechanical equipment (e.g., rooftop heating, ventilating and air-conditioning [HVAC] systems) that must continuously operate to provide required ventilation and reliable indoor comfort for project residential and non-residential uses. The proposed Town Square area and its partially covered outdoor stage is configured to host occasional live musical

performances or comparable events with substantial speech or music reinforcement. Therefore, this stationary operational noise analysis broadly considers five scenarios for each project phase (i.e., Phase 1 and Phase 2) as follows:

- **Typical Daytime Conditions During Daytime or "Business Hours"** (i.e., between 7:00 a.m. and 9:00 p.m. on Sunday through Thursday, and between 7:00 a.m. and 10:00 p.m. on Friday and Saturday): This includes steady-state noise emission from operating outdoor-exposed building HVAC (anticipated rooftop air handling unit [AHU] fans and air-cooled chiller [ACC] units) for all residential and non-residential buildings on site.

- **Typical Daytime Conditions with a Town Square Event in Progress**: Same as the above "typical daytime conditions" scenario, but with the added average acoustical contribution from the voices of up to 200 spectators at an average "raised normal speech" level for a cumulative duration of half a given hour during a Town Square event. The operating sound-producing apparatus located at the stage area of the Town Square event venue space is not included as it would be subject to Section 8.13.050.C of the City's municipal code.

- **Sound Generation from Typical Daytime Town Square Event in Progress:** This scenario evaluates the sound production from a live-performing musical act (or playback of pre-recorded speech or music) with all speakers and related equipment that, in total, yield up to 123 dBA sound power level [e.g., based upon operation of one Mackie "Thump Go" 200-watt speaker at maximum setting or comparable acoustic energy from a distributed speaker set] from the Town Square event venue stage area.

- **Typical Nighttime Conditions During Nighttime or "Non-Business Hours"** (i.e., between 9:00 p.m. and 7:00 a.m. on Sundays through Thursdays, and between 10:00 p.m. and 7:00 a.m. on Fridays and Saturdays): This includes steady-state noise emission from operating outdoor-exposed building HVAC (anticipated rooftop AHU fans and ACC units for only residential buildings on site). The assessment assumes that major noise-producing mechanical equipment serving non-residential buildings would not be operating during these non-business hours, since such equipment is typically set to operate only when such structures are occupied or a short duration prior to occupancy to correct for interior temperature drift. Therefore, these HVAC systems would not generate noise during these periods. No in-progress Town Square event (per the preceding scenario) would occur during these nighttime hours.

- **Typical Nighttime Conditions with Occupied Theater:** This is the same as the "typical nighttime conditions" scenario above, but includes operation of rooftop HVAC systems associated with the onsite theater—should it be operating and occupied during final showings on a given night after 10:00 p.m.—as being a representative example (and the likely acoustically dominant one, given its anticipated larger and/or greater quantities of rooftop HVAC equipment) of the potential for some on-site commercial establishment (e.g., restaurant) operating after 10:00 p.m.

Figures showing a graphical representation of stationary noise impacts for each phase discussed below are presented in the Noise and Vibration Technical Report. Predicted project stationary equipment operation sound levels are depicted across a horizontal plane approximately 5 feet above grade (i.e., a typical pedestrian listening elevation).

Additionally, for each phase, the analysis below presents both the existing or pre-project baseline L_{dn} values at the four nearest off-site receptors and the project operations L_{dn} values derived from the predicted hourly noise levels for four cases representing the product of two pairs of possible conditions: with and without the Town Square Event in progress, and with and without the theater operating during a nighttime hour (i.e., after 10:00 p.m.).

Phase 1 Impacts. Table 4.12.N presents the predicted noise exposure levels during Phase 1 (expressed as hourly L_{eq} values) attributed to project on-site stationary sources (i.e., rooftop HVAC and parking areas) at the four representative nearest off-site receptors for each of the five studied scenarios. The hourly noise levels are modeled to determine if hourly operations are consistent with the municipal code noise standards.

Table 4.12.N: Predicted Hourly Project Stationary Source Noise Levels to Off-Site Receptors, Phase 1

Studied Scenario	Project Hourly Noise Level (dBA L_{eq})			
	AlmaVia of San Rafael (ST-1)	Nova Albion Way (ST-2)	Quail Townhouses (ST-3)	Villa Martin (ST-4)
Daytime	39	39	40	38
Daytime with Town Square Event in Progress	39	39	40	38
Daytime with Town Square Event with Sound Reinforcement[1]	45	49	58	56
Nighttime	38	38	37	34
Nighttime with Theater Operations	38	38	38	36

Source: Northgate Town Square Project Noise and Vibration Technical Report (Dudek 2023).

[1] Added here for informational purposes, since such sound reinforcement is subject to Section 8.13.050.C of the City of San Rafael's noise ordinance, not the exterior noise limits appearing in Table 4.12.E.

dBA = A-weighted decibels

L_{eq} = equivalent continuous sound level

Table 4.12.O presents daily noise levels assessment for the with and without the Town Square event in progress and with and without the theater operating during a nighttime hour. The daily noise levels are modeled to determine if daily operations would result in a significant noise increase over ambient noise conditions.

As presented above, all predicted daytime hourly noise levels at the four nearest representative offsite receptor locations as presented in Table 4.12.N are less than the City's 50 dBA L_{eq} threshold. At night, when operating HVAC systems and parking garage activities associated with the non-residential land uses are not contributing to the aggregate noise emission, predicted operation noise levels shown in Table 4.12.N do not exceed the City's 40 dBA hourly L_{eq} threshold and would therefore comply with City's noise ordinance. When the theater may be occupied during a nighttime hour and thus contributes its rooftop HVAC noise to the nighttime operation scenario, the predicted levels are still compliant with the City's noise ordinance.

Table 4.12.O: Predicted Daily Project Stationary Source Noise Levels to Off-Site Receptors, Phase 1

Studied Scenario	Project Hourly Noise Level (dBA L_{dn})			
	AlmaVia of San Rafael (ST-1)	Nova Albion Way (ST-2)	Quail Townhouses (ST-3)	Villa Martin (ST-4)
Existing Daily Noise Level[1]	62.9	63.8	53.1	48.2
Daytime w/o Town Square Event and Nighttime w/o Theater Operations	44.6	44.6	44.4	40.9
Daytime with Town Square Event and Nighttime w/o Theater Operations	44.9	45.5	49.3	46.8
Daytime w/o Town Square Event and Nighttime with Theater Operations	44.6	44.7	44.5	41.4
Daytime with Town Square Event and Nighttime with Theater Operations	44.9	45.5	49.4	47.0

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).

[1] These L_{dn} values are derived from the baseline outdoor sound level measurement survey, by comparing the measured L_{eq} during concurrent time frames among the ST1, ST2, ST3, and ST4 survey positions and the LT1 location and assume that these arithmetic decibel differences would—if largely attributed to ambient roadway traffic noise—correspondingly be consistent for each hour during the course of a 24-hour period and thus be a similar decibel add or reduction to the LT1 calculated L_{dn} of 59.3 dBA.

dBA = A-weighted decibels

L_{dn} = day-night average level

L_{eq} = equivalent continuous sound level

The predicted hourly L_{eq} values due to sound reinforcement (i.e., speakers) during a Town Square event are presented for informational purposes in Table 4.12.N, since such events are exempt from daytime and nighttime exterior noise thresholds presented in Table 4.12.E. The noise emission from the sound reinforcement systems at the Town Center stage area would be compliant with the 80 dBA L_{max} limit at a distance of 50 feet from the project site boundary, and thus compliant with Section 8.13.050.C of the City's municipal code.

With respect to the City's General Plan Noise Element expectation of no more than a 3 dB increase to the pre-existing L_{dn} value, the calculated L_{dn} values for the Phase 1 scenarios shown in Table 4.12.O are all less than the existing L_{dn} values for the four studied off-site receptors and would make no more than a 3 dB change to the existing L_{dn} values. For purposes of this L_{dn} calculation and value comparison with non-project conditions, the sound from the Town Square event in progress is included (i.e., both spectator speech and from the speech/music reinforcement systems at the stage) and expected to last no more than 2 hours. Additionally, the theater is anticipated to operate for up to 2 hours at night when that condition occurs.

Given the above, Phase 1 of the proposed project would not result in a temporary increase in operational noise that exceeds the City's established thresholds, and this impact would be **less than significant**.

Phase 2 Impacts. Table 4.12.P presents the predicted noise exposure levels during Phase 2 (expressed as hourly L_{eq} values) attributed to project onsite stationary sources (i.e., rooftop HVAC and parking areas) at the four representative nearest offsite receptors for each of the five studied scenarios. The hourly noise levels are modeled to determine if hourly operations are consistent with the municipal code noise standards.

Table 4.12.P: Predicted Hourly Project Stationary Source Noise Levels to Off-Site Receptors, Phase 2

Studied Scenario	Project Hourly Noise Level (dBA L_{eq})			
	AlmaVia of San Rafael (ST-1)	Nova Albion Way (ST-2)	Quail Townhouses (ST-3)	Villa Martin (ST-4)
Daytime	39	39	41	39
Daytime with Town Square Event in progress	39	39	41	39
Daytime with Town Square Event with Sound Reinforcement[1]	44	49	57	56
Nighttime	38	38	40	37
Nighttime with Theater Operations	39	39	40	38

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).

[1] Added here for informational purposes, since such sound reinforcement is subject to Section 8.13.050.C of the City of San Rafael's noise ordinance, not the exterior noise limits appearing in Table 4.12.E.

dBA = A-weighted decibels

L_{eq} = equivalent continuous sound level

Table 4.12.Q presents a daily noise level assessment for the with and without the Town Square event in progress and with and without the theater operating during nighttime hour scenarios. The daily noise levels are modeled to determine whether daily operations would result in a significant noise increase over ambient noise conditions.

Table 4.12.Q: Predicted Daily Project Stationary Source Noise Levels to Off-Site Receptors, Phase 2

Studied Scenario	Project Hourly Noise Level (dBA L_{dn})			
	AlmaVia of San Rafael (ST-1)	Nova Albion Way (ST-2)	Quail Townhouses (ST-3)	Villa Martin (ST-4)
Existing Daily Noise Level[1]	62.9	63.8	53.1	48.2
Daytime w/o Town Square Event and Nighttime w/o Theater Operations	44.9	45.0	46.6	43.7
Daytime with Town Square Event and Nighttime w/o Theater Operations	45.1	45.8	49.3	47.3
Daytime w/o Town Square Event and Nighttime with Theater Operations	44.9	45.0	46.7	43.9
Daytime with Town Square Event and Nighttime with Theater Operations	45.1	45.8	49.4	47.4

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).

[1] These L_{dn} values are derived from the baseline outdoor sound level measurement survey, by comparing the measured L_{eq} during concurrent time frames among the ST1, ST2, ST3, and ST4 survey positions and the LT1 location and assume that these arithmetic decibel differences would—if largely attributed to ambient roadway traffic noise—correspondingly be consistent for each hour during the course of a 24-hour period and thus be a similar decibel add or reduction to the LT1 calculated L_{dn} of 59.3 dBA.

dBA = A-weighted decibels

L_{dn} = day-night average level

L_{eq} = equivalent continuous sound level

As presented above, all predicted daytime hourly noise levels at the four nearest representative off-site receptor locations as presented in Table 4.12.O are less than the City's 50 dBA L_{eq} threshold. At night, when operating HVAC systems and parking garage activities associated with the non-residential land uses are not contributing to the aggregate noise emission, predicted operation noise levels shown in Table 4.12.O do not exceed the City's 40 dBA hourly L_{eq} threshold and would therefore comply with the City's noise ordinance. When the theater may be occupied during a nighttime hour and thus contributes its rooftop HVAC noise to the nighttime operation scenario, the predicted levels are still compliant with the City's noise ordinance.

The predicted hourly L_{eq} values due to sound reinforcement (i.e., speakers) during a Town Square event are presented for informational purposes in Table 4.12.O, since such events are exempt from the daytime and nighttime exterior noise thresholds presented in Table 4.12.E. The noise emissions from the sound reinforcement systems at the Town Center stage area would be compliant with the 80 dBA L_{max} limit at a distance of 50 feet from the project site boundary, and thus compliant with Section 8.13.050.C of the City's municipal code.

With respect to the City's General Plan Noise Element requirement of no more than a 3 dB increase to the pre-existing L_{dn} value, the calculated L_{dn} values for the Phase 2 scenarios shown in Table 4.12.P are all less than the existing L_{dn} values for the four studied off-site receptors and would make no more than a 3 dB change to the existing L_{dn} values. For purposes of this L_{dn} calculation and value comparison with non-project conditions, the sound from the Town Square event in progress is included (i.e., both spectator speech and from the speech/music reinforcement systems at the stage) and expected to last no more than 2 hours. Additionally, the theater is anticipated to operate for up to 2 hours at night when that condition occurs.

Given the above, Phase 2 of the proposed project would not result in a temporary increase in operational noise to surrounding off-site receptors that exceeds the City's established thresholds, and this impact would be **less than significant**.

<u>On-Site Stationary Noise Impacts to New Sensitive Receptors.</u> Sequential implementation of Phases 1 and 2 would introduce new residential-type noise-sensitive receptors on the project site. Operation of Phase 2 of the project would include a mix of both residential and commercial uses, and these new uses could adversely affect the nighttime noise environment for the Phase 1 and 2 sensitive receptors. This is a potentially significant impact.

Impact NOI-2 Operation period noise levels would exceed the City's land use compatibility thresholds for future on-site sensitive receptors. (S)

Utilizing the same methodology as presented under Threshold 4.12.1, Table 4.12.R presents the predicted hourly L_{eq} noise exposure levels attributed to project stationary sources at nine sample on-site receptors for each of the five studied Phase 1 scenarios: daytime, daytime with a Town Square Event, Town Square Event Sound Speakers (informational only), nighttime, and nighttime with theater operations. Figures within the Technical Report provide an illustration of predicted project stationary equipment operation sound levels across a horizontal plane approximately 5 feet above grade (i.e., a typical pedestrian listening elevation).

Table 4.12.R: Predicted Phase 1 Project Operational Noise Levels at On-Site Noise Sensitive Receptors

On-Site Sensitive Receptor	Hourly Stationary Noise Levels (dBA L_{eq})				
	Daytime	Daytime with Town Square Event	Town Square Event Sound Speakers	Nighttime	Nighttime with Occupied Cinema
Residential Parcel 1 - upper floor, northern (RP1N)	47.1	47.1	62.8	44.8	46.4
Residential Parcel 1 - upper floor, southern (RP1S)	42.8	42.8	53.1	41.4	41.4
Residential Parcel 2 - upper floor, townhome #11 (RP2B11)	44.3	44.3	56.1	40.0	42.7
Residential Parcel 2 - upper floor, townhome #13 (RP2B13)	45.0	45.1	60.1	42.3	43.9
Residential Parcel 2 - upper floor, townhome #3 (RP2B3)	39.4	39.4	46.6	39.2	39.3
Residential Parcel 3 - upper floor northern (RP3N)	46.6	46.6	55.7	46.2	46.2
Residential Parcel 3 - upper floor southern (RP3S)	43.9	43.9	52.7	43.9	43.9
Residential Parcel 4 - upper floor eastern (RP4E)	48.5	48.6	58.8	48.4	48.5
Residential Parcel 4 - upper floor western (RP4W)	51.2	51.7	75.5	45.3	50.0

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

The results indicate that all daytime sound levels at representative upper-floor, on-site receptor locations listed in Table 4.12.R comply with the City's 55 dBA threshold for "constant" type sounds as received by mixed-use land uses. Noise from daytime amplified Town Square events would exceed 55 dBA L_{eq} at five of the on-site receptors but do not exceed the significance threshold due to the City's exemption of these noise sources from its general 55 dBA L_{eq} threshold. At night, predicted operation noise levels received by four on-site mixed-use land uses slightly exceed the City's 45 dBA hourly L_{eq} threshold and would therefore not comply with the City's noise ordinance without some applied noise reduction or other project design feature. For these reasons, there is a need for noise reduction of on-site outdoor-exposed HVAC systems, subsurface parking level ventilation systems, and/or at or above-grade exposed parking areas. Nevertheless, such noise reduction methods, further detailed below as part of the on-site noise compliance requirements, may not be sufficient to attain these predicted noise reduction needs at all of these affected future on-site residential receptors. The loudest sound levels from Town Square speakers during an event are predicted to be less than 80 dBA and would thus be considered compliant with Section 8.13.050.C from the City's exterior noise level exception as it applies to such sound reinforcement systems.

Table 4.12.S presents the predicted hourly L_{eq} noise exposure levels attributed to project stationary sources at 15 sample on-site receptors for each of the five studied Phase 2, scenarios: daytime, daytime with a Town Square Event, Town Square Event Sound Speakers (informational only), nighttime, and nighttime with theater operations. Figures within the Technical Report provide an illustration of predicted project stationary equipment operation sound levels across a horizontal plane approximately 5 feet above grade (i.e., a typical pedestrian listening elevation).

Table 4.12.S: Predicted Phase 2 Project Operational Noise Levels at On-Site Noise Sensitive Receptors

On-site Sensitive Receptor	Hourly Stationary Noise Levels (dBA L_{eq})				
	Daytime	Daytime with Town Square Event	Town Square Event Sound Speakers	Nighttime	Nighttime with Occupied Cinema
Residential Parcel 1 - upper floor, northern (RP1N)	47.5	47.5	62.8	45.8	47.2
Residential Parcel 1 - upper floor, southern (RP1S)	43.6	43.6	53.1	43.3	43.4
Residential Parcel 2 - upper floor, townhome #11 (RP2B11)	44.0	44.0	56.1	41.0	43.3
Residential Parcel 2 - upper floor, townhome #13 (RP2B13)	44.6	44.7	59.9	42.5	44.0
Residential Parcel 2 – upper floor, townhome #3 (RP2B3)	39.4	39.4	46.0	39.3	39.3
Residential Parcel 3 – upper floor northern (RP3N)	46.4	46.4	56.5	46.4	46.4
Residential Parcel 3 – upper floor southern (RP3S)	43.9	43.9	46.4	43.9	43.9
Residential Parcel 4 – upper floor eastern (RP4E)	48.7	48.7	57.1	48.6	48.6
Residential Parcel 4 – upper floor western (RP4W)	51.1	51.6	75.3	46.2	50.3
Residential Parcel 5 – upper floor eastern (RP5E)	50.0	50.0	57.4	49.9	49.9
Residential Parcel 5 – upper floor northern (RP5N)	47.8	47.8	51.7	46.1	46.1
Residential Parcel 5 – upper floor western (RP5W)	48.2	49.2	74.5	43.9	44.8
Residential Parcel 6 – upper floor northern (RP6N)	48.8	49.1	73.8	44.9	46.5
Residential Parcel 6 – upper floor western (RP6W)	43.3	43.3	51.8	42.4	43.1
Residential Parcel 6 – upper floor southern (RP6S)	48.4	48.6	72.6	44.8	47.8

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

The results indicate that all daytime sound levels at representative upper-floor on-site receptor locations listed in Table 4.12.S comply with the City's 55 dBA threshold for "constant" type sounds as received by mixed-use land uses. At night, predicted operation noise levels received by six on-site mixed-use land uses for the nighttime condition and eight on-site mixed-use land uses for the nighttime with occupied cinema conditions slightly exceed the City's 45 dBA hourly L_{eq} threshold and would therefore not comply with the City's noise ordinance without some applied noise reduction or other project design feature. For these reasons, there is a need for noise reduction of on-site outdoor-exposed HVAC systems, subsurface parking level ventilation systems, and/or at or above-grade exposed parking areas. Nevertheless, such noise reduction methods, further detailed below as part of the on-site noise compliance requirements, may not be sufficient to attain these predicted noise reduction needs at all of these affected future on-site residential receptors. The loudest sound levels from Town Square speakers during an event are predicted to be less than 80 dBA and would thus be considered compliant with Section 8.13.050.C from the City's exterior noise level exception as it applies to such sound reinforcement systems.

Given that Phase 1 and 2 project operations would exceed the City's land use compatibility thresholds for future on-site sensitive receptors, the following Mitigation Measure NOI-2 should be incorporated into the proposed project design to reduce operational noise effects to on-site sensitive receptors to the extent feasible.

Mitigation Measure NOI-2

On-Site Noise Compliance Requirements. Prior to City approval of building permits, the project sponsor shall include in construction documents for City review building operation noise control and sound abatement features or considerations for stationary equipment during nighttime hours. The documentation shall include at least the following:

- Equipment sound emission data (or sufficient engineering data from the manufacturer of equipment model[s]);
- Architectural renderings and details depicting roof parapets, screens, walls, or other barriers that may directly or indirectly occlude, reflect, and/or absorb equipment noise emissions—conveyed via airflows or via vibrating equipment casings or enclosures; and
- Incorporation of dissipative duct silencers, shrouds, covers, acoustical louvers, acoustically lined ductwork, and other means to help attenuate noise from fans, pumps, compressors, and other equipment featuring reciprocating or revolving components.

The documentation shall demonstrate whether these measures, or any additional feasible mitigation measures, will reduce the sound level to below the established 55 dBA L_{eq} daytime and 45 dBA L_{eq} thresholds for on-site sensitive receptors. After City approval, information on subsequent project design changes, equipment selections, or construction alterations that substantially deviate from these noise control and/or sound abatement details appearing in the construction documents must be reviewed by a qualified acoustician and provided to the City with respect to expected sufficiency of expected conformance with applicable City noise thresholds or as otherwise approved by the City. (SU)

Given it is not possible to confirm that noise levels would absolutely be below the applicable City's established thresholds, this impact would be **significant and unavoidable**.

Threshold 4.12.2: Construction Vibration Impacts. Ground-borne vibration attenuates rapidly, even over short distances. The attenuation of ground-borne vibration as it spreads from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. To examine potential building damage risk and potential vibration

annoyance, vibration levels were calculated using formulas found in Section 3.1 of the Technical Report. Phase 1 and 2 impacts are discussed below.

Phase 1 Impacts. Table 4.12.T shows the approximate distances between the studied receptor position and an anticipated nearest location of construction equipment, the PPV of construction vibration, and the vibration velocity (VdB) for three sets of assumed equipment.

Table 4.12.T: Predicted Construction Vibration Levels to Off-Site Receptors, Phase 1

Receptor	Anticipated Closest Distance (feet)	Predicted PPV (in/sec) and VdB (rms) for Indicated Equipment Type					
		Hoe-Ram[1] (during SDEMO phase); Caisson Drilling[2] (during BLDGE phase)		Dozer, Grader, Scraper[3] (during SPREP or SGRAD phases)		Roller[4] (during FROAD phase)	
		PPV	VdB	PPV	VdB	PPV	VdB
RND1 (AlmaVia of San Rafael)	157	0.006	63	0.006	63	0.013	70
RSA1 (Sao Augustine Way)	172	0.005	62	0.005	62	0.011	69
RSA2 (Sao Augustine Way)	162	0.005	63	0.005	63	0.013	70
RSA3 (Sao Augustine Way)	193	0.004	60	0.004	60	0.010	68
RNA1 (Nova Albion Way)	172	0.005	62	0.005	62	0.011	69
RLP1 (La Perdiz Court)	412	0.001	50	0.001	50	0.003	58
RLP2 (La Perdiz Court)	298	0.002	55	0.002	55	0.005	62

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
[1] Expected to operate during the Site Demolition phase (SDEMO)
[2] Expected to operate for ground improvements and foundations during the Building Erection phase (BLDGE)
[3] Expected to operate during the Site Preparation or Grading phases (SPREP or SGRAD)
[4] Expected to operate during the Final Roads phase (FROAD)
in/sec = inches per second
PPV = peak particle velocity
rms = root mean square
VdB = vibration velocity decibels

All predicted vibration levels are lower than the occupant annoyance threshold of 72 VdB, and lower than the building damage risk threshold of 0.2 in/sec PPV. On the basis of compliance with these City-adopted vibration standards, impacts associated with construction vibration would be **less than significant**.

Phase 2 Impacts. Table 4.12.U shows the approximate distances between the on-site studied receptor position and an anticipated nearest location of construction equipment, the PPV of construction vibration, and the vibration velocity (VdB) for three sets of assumed equipment.

All predicted vibration levels are lower than the occupant annoyance threshold of 72 VdB, and lower than the building damage risk threshold of 0.2 in/sec PPV. On the basis of compliance with these City-adopted vibration standards, impacts associated with construction vibration would be **less than significant**.

Table 4.12.U: Predicted Construction Vibration Levels to On-Site Receptors, Phase 2

Receptor	Anticipated Closest Distance (feet)	Predicted PPV (in/sec) and VdB (rms) for Indicated Equipment Type					
		Hoe-Ram[1] (during SDEMO phase); Caisson Drilling[2] (during BLDGE phase)		Dozer, Grader, Scraper[3] (during SPREP or SGRAD phases)		Roller[4] (during FROAD phase)	
		PPV	VdB	PPV	VdB	PPV	VdB
Residential Parcel 1, northern unit facade	360	0.001	48[5]	0.001	48[5]	0.002	56[5]
Residential Parcel 4, northern unit facade	100	0.007	65[5]	0.007	65[5]	0.016	72[5]

Source: *Northgate Town Square Project Noise and Vibration Technical Report* (Dudek 2023).
1 Expected to operate during the Site Demolition phase (SDEMO)
2 Expected to operate for ground improvements and foundations during the Building Erection phase (BLDGE)
3 Expected to operate during the Site Preparation or Grading phases (SPREP or SGRAD)
4 Expected to operate during the Final Roads phase (FROAD)
5 Includes net coupling loss of -4 VdB (-10 loss, but +6 for floor resonance amplification) for multi-story masonry buildings
in/sec = inches per second
PPV = peak particle velocity
rms = root mean square
VdB = vibration velocity decibels

Threshold 4.12.3: Proximity to an Airport. Although the project site is less than 2 miles southwest of the San Rafael Airport[12], the 55 dBA L_{dn} contour is over 4,000 feet northeast of the project site. Aviation noise exposures from this facility would be less than 65 dBA L_{dn}. The nearest public airport to the project site is the Marin County Airport at Gnoss Field in Novato, approximately 9 miles to the north. The project site is not located within the land use plan area for the Marin County Airport at Gnoss Field.[13] Similarly, the project is over 23 miles northwest of the nearest 65 dBA L_{dn} aviation noise contour of the Oakland International Airport[14] and over 25 miles beyond the nearest San Francisco International Airport[15] 65 dBA L_{dn} contour.

Therefore, new occupants, workers, and visitors to the proposed project would not be exposed to excessive aviation noise levels, and there would be **no impact**.

4.12.2.3 Cumulative Impacts

As explained above, both noise and vibration are localized impacts. For construction noise and vibration impacts, the only relevant cumulative projects would be probable future projects near the project site that are anticipated to be under construction at the same time as the project. The City's review of potential cumulative projects has not identified any projects that meet these criteria. Accordingly, the project would not contribute to any significant cumulative construction noise or vibration impact. The City's General Plan determined that construction period noise impacts associated with future development occurring under General Plan buildout would be less than

12 City of San Rafael. 2009. *San Rafael Airport Recreational Facility, Draft Environmental Impact Report*. SCH No. 2006012125. March.
13 Cortright & Seibold. 1991. *Airport Land Use Plan, Marin County Airport Gnoss Field*. June 10.
14 Port of Oakland. 2016. *2016 Oakland International Airport Master Plan,* Figure 6.17.
15 San Francisco International Airport (SFIA). 2015. *14 CFR Part 150 Noise Exposure Map Report*, Exhibit 5-1. August.

significant with required compliance with General Plan policies and municipal code standards, or with implementation of project-specific noise reduction requirements such as those identified for the proposed project in Mitigation Measure NOI-1. Future projects that could be under construction in the vicinity of the project site as part of General Plan implementation would undergo separate evaluation and potential environmental review and would be required to consider the proposed project in the cumulative assumptions and analyses to ensure that cumulative construction period impacts would not occur.

Regarding operational noise, the City similarly has not identified any potential cumulative projects in the vicinity of the project site that could contribute to a cumulative stationary source or traffic noise impact. Potential impacts of generalized future traffic growth identified in the General Plan in combination with the project are already captured by the off-site traffic analysis in Section 4.12.2 above. Accordingly, the project would not contribute to any significant cumulative noise impact during project operations.

Therefore, the proposed project would not contribute to a cumulatively considerable noise-related effect, and this impact would be **less than significant**.

4.12.2.4 Non-CEQA Land Use Compatibility Assessment

As identified above in Section 4.12.2.4, per the California Supreme Court in its *California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)* decision, the potential exposure of proposed future project occupants to existing off-site conditions such as traffic noise is not a CEQA concern and is presented here only for informational purposes.

On-Site Traffic Noise. Sequential implementation of Phases 1 and 2 would introduce new residential-type, noise-sensitive receptors on the project site near all four of the Northgate Drive roadway segments. Several newly occupied units in the upper floors of project buildings associated with Residential Parcels 1, 2, 3, and 6 would have exterior façades or, in some cases, usable outdoor spaces located as horizontally close as 50 feet to the Northgate Drive roadway centerline. Estimated traffic noise level exposures, in terms of L_{dn} value, from Northgate Drive would thus be comparable to the values in the off-site traffic assessment tables above. More specifically, the "Future + Phase 2" L_{dn} values at 50 feet for the Northgate Drive segments range from 62.9 to 64.0 L_{dn}.

As shown in Section 4.12.1.4., Program N-1.1A Residential Noise Standards from the City's General Plan guidance expects maintenance of a maximum noise standard of 70 L_{dn} for backyards, decks, and common/usable outdoor spaces in residential and mixed-use areas. This City planning standard means that the predicted traffic noise exposure levels of 62.9 to 64.0 L_{dn} at the nearest receiving on-site residences would be compliant.

Sequential implementation of Phases 1 and 2 would also introduce new residential-type receptors on the project site near Las Gallinas Avenue segments between Del Presidio and Merrydale Road, Merrydale Road, and Northgate Drive. Several newly-occupied units in the upper floors of project buildings associated with Residential Parcels 3, 4, and 5 would have exterior façades or, in some cases, usable outdoor spaces located as horizontally close as 50 feet to the Las Gallinas Avenue roadway centerline. Estimated traffic noise level exposures, in terms of L_{dn} value, from Las Gallinas

Avenue at this distance range between 63.5 dBA L_{dn} and 63.9 dBA L_{dn} and would thus be below the City's General Plan guidance standard of 70 L_{dn} for backyards, decks, and common/usable outdoor spaces in residential and mixed-use areas and correspondingly compliant.

Upper-floor occupied units of the Residential Parcel 5 building with eastern exteriors facing US-101 would be exposed to its traffic noise levels, which are estimated to be 69.5 dBA L_{dn} and thus also compliant with the City's 70 dBA L_{dn} standard for compatibility.

As indicated in the City's Noise Compatibility Guidelines, proposed multi-family residential development exposed to exterior noise levels ranging from 65 to 70 dBA L_{dn} would be considered "conditionally acceptable" and "conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice" with respect to ensuring a provided ambient interior sound level of 45 dBA L_{dn} for such inhabited spaces. Proposed project residential units include such building shell components and interior comfort mechanical systems.

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4.13 PUBLIC SERVICES AND RECREATION

This section describes the public services (police, fire and emergency, schools, and parks and recreation) that serve the City of San Rafael (City), analyzes the potential impacts that could result from implementation of the proposed project, and recommends mitigation measures, as necessary. The information presented was gathered from a variety of sources, including direct communication with the agencies and organizations that administer or provide the various public services.

4.13.1 Setting

The setting section discusses the existing public services for San Rafael and focuses on the following topics: police protection services, fire and emergency medical services, schools, parks and recreation facilities, and public libraries.

4.13.1.1 Police Protection Services

Information about police protection services for San Rafael, including the project area, is discussed below.

California Highway Patrol. Highway patrol provides traffic enforcement on local freeways. Mutual aid agreements allow for joint responses to major incidents.

City of San Rafael Police Department. The San Rafael Police Department (SRPD) operates out of downtown San Rafael at the San Rafael Public Safety Center at 1375 Fifth Avenue, approximately 2 miles southeast of the project site. The SRPD provides service 24 hours per day and preserves public peace, enforces laws, protects life and property, and provides traffic enforcement and police services to the community. The SRPD also has an approximately 200-square-foot substation located on the project site within the main mall building.

The SRPD is comprised of two divisions: Operations and Administrative Services. The Operations Division consists of uniformed patrol, special weapons and tactics (SWAT), traffic, and police cadets. The Administrative Services Division consists of investigations, records, dispatch, the special operation bureau, the youth services bureau, and personnel and training.[1] In 2022, the SRPD had 65 full-time sworn personnel. Considering that the population of San Rafael was 59,971 individuals in 2022,[2] the police-officer-to-resident ratio was 1.08 sworn officers per 1,000 residents, which is likely similar to existing conditions.[3] This value is within the industry standard target of 1 to 1.5 officers per 1,000 residents.[4]

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1 City of San Rafael Police Department. 2019. *San Rafael Police Department Policy Manual*.

2 United States Census Bureau. 2022. QuickFacts. San Rafael city, California. December 22. Website: https://www.census.gov/quickfacts/fact/table/sanrafaelcitycalifornia/PST045222 (accessed August 2023).

3 Note that the City's 2023 population of 59,681 as identified in Table 4.2.A in Section 4.2, Population and Housing, represents a slight decline in the population compared to 2022. The 2022 population data are provided here because 2022 is the most recent year for which SRPD staffing data were available at the time that the EIR was prepared.

4 City of San Rafael Police Department. 2019. *San Rafael Police Department Policy Manual*.

In 2021, the year for which the most current data are available, SRPD had a total of 47,829 calls for service, with the most common calls consisting of welfare checks, suspicious circumstances, unwanted subject, audible alarm, and suspicious person. The project site is located within Beat 5, which had an average response time of 28 minutes, 49 seconds in 2021, which was similar to the citywide average of 28 minutes, 34 seconds. Priority 1 calls, which are the most urgent, had a response time of 7 minutes, 46 seconds, while Priority 2 and 3 calls had response times of 22 minutes and 48 minutes, 55 seconds, respectively.

4.13.1.2 Fire and Emergency Medical Services

The San Rafael Fire Department (SRFD) provides emergency first responder services within the geographical boundaries of San Rafael. The department is made up of over 90 professionals trained in emergency medical care, firefighting, hazardous materials, and emergency preparedness.[5]

Emergency Response and Fire Suppression. There are six fire stations with 23 personnel on-duty 24/7 to provide fire, paramedic, and emergency services with San Rafael. The SRFD currently employs 70 uniformed firefighters. Considering that the population of San Rafael was 59,971 individuals in 2022, the firefighter-to-resident ratio was 1.16 per 1,000 residents. The National Fire Protection Association (NFPA) standard for firefighter-to-community-member ratio is approximately 1.54 to 1.81 firefighters per 1,000 residents.[6] Approximately 70 percent of the calls that the SRFD receives are for medical-related needs.[7] The SRFD responds to fires to provide control, extinguishment, overhaul, and salvage that result in a minimum loss of life and property. The SRFD is also responsible for responding to hazardous materials incidents for scene management, confinement, and mitigation. Other services offered include assisting disabled patients, police assists, water evacuation, lock-ins, and other rescue services.

In 2022, the SRFD responded to a total of 10,072 calls for service, which was approximately 13 percent higher than the previous 5-year average of approximately 8,892 calls for service. The majority of calls for service were for emergency medical service (6,942), with the next highest being Good Intent[8] (1,347) and non-fire service calls (923). As of 2020, citywide, the SRFD conformed to the response time goal to be on scene within 5 to 7 minutes following a call for service 90 percent of the time, as established by NFPA Standard 1710.[9]

Fire Station 56 (located approximately 1 mile away at 650 Del Ganado Road) and Fire Station 57 (located approximately 0.8 mile away at 3530 Civic Center Drive) are the closest fire stations to the

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5 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.

6 This standard is for firefighting purposes only and does not take into account paramedic transport agencies such as SRFD that have far higher call volumes that are emergency medical service (EMS) related.

7 City of San Rafael Fire Department. n.d. Fire Department History. Website: https://www.cityofsanrafael.org/fire-department-history/ (accessed January 17, 2022).

8 A 'Good Intent' incident is when the fire department is dispatched to a scene but upon arrival and investigation, the scene is not the incident-type report and is no threat/problem.

9 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.

project site. Fire Stations 56 and 57 both have one Type 1 fire engine and one ambulance.[10] Fire Station 56 also houses a reserve ambulance, and Fire Station 57 houses a reserve ladder truck and water recirculation unit. As of 2022, the average response time in the service area for Fire Station 56 (which includes the project site) was 6 minutes. For Fire Station 57, the response time was 6 minutes, 20 seconds. Fire Station 56 typically has 3 personnel on duty, while Fire Station 57 typically has 5 personnel on duty.

The San Rafael General Plan 2040 & Downtown Precise Plan Environmental Impact Report (General Plan EIR) evaluated potential citywide impacts to fire service resulting from buildout of the General Plan. The General Plan EIR determined that the addition of the City's Public Safety Center, the reconstruction of Fire Station 52, the construction of Fire Station 57, and the rehabilitation of Fire Stations 54 and 55 would ensure that SRFD facilities are adequate to serve the anticipated buildout. Additionally, the SRFD determined that existing equipment and staffing levels would be adequate to accommodate growth anticipated under General Plan 2040 aside from the need for additional ambulance vehicles to meet an increase in emergency medical services demand.

Fire Prevention Bureau/Vegetation Management Division. The Fire Prevention Bureau ensures public safety through the issuance of Fire Permits for the following activities: construction permits, operational permits, and State-mandated inspections. The Vegetation Management Divisions provide public education and complete inspections for defensible space, home hardening, and offers free curbside chipper services.[11]

Marin Household Hazardous Waste Facility. The SRFD jointly operates the Marin Household Hazardous Waste Facility with Marin County Hazardous & Solid Waste Management Joint Powers Authority and the Marin Recycling & Resource Recovery Association. The SRFD holds the County of Marin (County) permit for the facility and is responsible for managing waste generated at the facility. This facility provides residents and businesses in Marin County with a safe and convenient option for hazardous waste collection, recycling, and disposal. The facility also provides education to the public on the importance of responsible disposal of toxic materials and the resulting benefits to health, environment, and finances.[12]

4.13.1.3 Schools

The City of San Rafael is served by two school districts, including San Rafael City Schools (SRCS) and the Miller Creek School District (MCSD). There are also a number of private schools located within San Rafael.[13]

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10 San Rafael Firefighter's Association, IAFF Local 1775. n.d. Find Your Fire Stations. Website: https://www.sanrafaelfirefighters.net/about-us/find-your-fire-stations/ (accessed January 17, 2022).

11 City of San Rafael Fire Department. n.d. Fire Prevention & Inspection. Website: https://www.cityofsanrafael.org/fire-prevention-inspection/ (accessed January 17, 2022).

12 City of San Rafael Fire Department. n.d. Household Hazardous Waste. Website: https://www.cityofsanrafael.org/hazardous-waste-disposal/ (accessed January 17, 2022).

13 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.

Public Schools. The SRCS operates six active K-5 elementary schools, one K-8 school, one middle school, and three high schools. The MCSD operates three active K-5 elementary schools and one middle school. Students in the MCSD school district typically matriculate to Terra Linda High School, which is operated by SRCS; however, the SRCS is an open-enrollment district and students may choose to attend San Rafael High School. The project site falls within the current boundaries of the MCSD and, although intra-district transfers are permitted, most of the student population within the project area would attend the nearest MCSD schools, specifically Vallecito Elementary School and Miller Creek Middle School, as well as the SRCS-operated Terra Linda High School. Enrollment for all schools in SRCS and MCSD is shown in Tables 4.13.A and 4.13.B, respectively. Total enrollment for both districts in Academic Year (AY) 2020-2021, the school year for which the most recent data are available, was 8,729 students.

Table 4.13.A: San Rafael City Schools Enrollment, Academic Year 2019-2020

School	Grade Range	Enrollment[1]	Capacity[2]
Elementary Schools			
Bahia Vista	K – 5	580	578
San Pedro	K – 5	507	552
Coleman	K – 5	370	426
Sun Valley	K – 5	461	552
Glenwood	K – 5	304	476
Laurel Dell	K – 5	280	226
Elementary School Enrollment Total		**2,502**	**2,810**
K-8 Schools			
Venetia Valley K-8	K – 8	683	857
K-8 School Enrollment Total		**683**	**857**
Middle Schools			
Davidson Middle	6 – 8	1,079	1,400
Middle School Enrollment Total		**1,079**	**1,400**
High Schools			
Madrone High	9 – 12	121	60
San Rafael High	9 – 12	1,287	1,152
Terra Linda High	9 – 12	1,200	1,032
High School Enrollment Total		**2,608**	**2,244**

Source: Compiled by LSA (2023).
[1] National Center for Education Statistics: https://nces.ed.gov/
[2] City of San Rafael. 2020. *General Plan 2040 Community Services Report*. February.

Table 4.13.B: Miller Creek School District Enrollment, Academic Year 2020-21

School	Grade Range	Enrollment[1]	Capacity[2]
Elementary Schools			
Lucas Valley	K – 5	336	426
Vallecito	K – 5	408	512
Mary E. Silveira	K – 5	418	500
Elementary School Enrollment Total		**1,162**	**1,438**
Middle Schools			
Miller Creek	6 – 8	692	809
Middle School Enrollment Total		**692**	**809**

Source: Compiled by LSA (2023).
[1] Miller Creek Scholl District (2021).
[2] City of San Rafael. 2020. *General Plan 2040 Community Services Report*. February.

Private Schools. In addition to the 11 schools operated by SRCS and 4 schools operated by MCSD, there are also many private schools within San Rafael, including: The Marin School, Brandeis Marin, Caulbridge School, Marin Waldorf School, Mark Day School, GATE Academy, Marin Academy, Montessori De Terra Linda, Saint Isabella School, and Saint Raphael School. The total enrollment of K-12 private schools was 1,800 students in 2019.[14]

Higher Education. Dominican University of California is located in San Rafael and has a student enrollment of 1,800 undergraduate and graduate students.[15] The University is an independent institution that offers more than 60 majors, minors, and concentrations.

4.13.1.4 Parks and Recreation

Public open space is the single largest land use in San Rafael and constitutes approximately 40 percent of the city's land area. Park service providers that operate facilities within and near San Rafael include the City of San Rafael Library and Recreation Department, County of Marin Open Space District, the California Department of Parks and Recreation, the Marinwood Community Services District, SRCS, and MCSD. Public park services are supplemented by private facilities such as swim and racquet clubs, the Young Men's Christian Association (YMCA), the Osher Marin Jewish Community Center (Osher JCC), a private golf course, and community-run pools and play areas.

Public recreation opportunities include both parks with active and passive recreation facilities and managed open space. Open space refers to spaces managed for resource conservation, hazard reduction, and scenic value, while parks refer to land that has been improved in such a way to support active recreation. Typical park improvements include sports fields, playgrounds, picnic areas, tennis courts, running tracks, recreation centers, and basketball courts. Larger parks support

[14] City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.
[15] Dominican University of California. n.d. About. Website: https://www.dominican.edu/about (accessed January 17, 2022).

programmed services such as classes, swim and tennis lessons, activities for children and seniors, and league sports.

The City offers a number of recreation facilities, including Albert Park, Pickleweed Park, and Terra Linda Recreation Area. These facilities include public swimming pools, athletic fields and courts, community centers, playgrounds, and picnic areas. There are 42 improved parks and facility sites of various sizes and uses within San Rafael that are owned and operated by the City and County, totaling approximately 270 acres. A detailed list and map of all parks in San Rafael is provided in the Parks and Recreation Existing Conditions Report[16] prepared for the San Rafael General Plan 2040. In addition, there are approximately 95 acres of improved open space on public school properties within the City Planning Area. There are approximately 2,570 acres of unimproved open space within the incorporated City of San Rafael and an additional 3,801.5 acres within unincorporated areas in the San Rafael Planning Area.[17]

A standard ratio of adequate parkland acreage to population has been established within California and consists of 3 to 5 acres of improved open space per 1,000 residents. School open space is typically included in this calculation at a smaller percentage than the total acreage because access to schools is limited and not available for public use when school is in session. When counting school open space at 50 percent, the total improved parkland acreage in the San Rafael Planning Area totals 314 acres. Considering there are 73,300 residents within the City's Sphere of Influence,[18] there are currently 4.28 acres of improved parkland per 1,000 residents. The types of parks and open spaces serving the city are defined in the General Plan and are further described below.

- **Region-Serving Parks:** Region-serving parks draw visitors from throughout Marin County and the San Francisco Bay Area (Bay Area) and offer unique amenities. There are three region-serving parks in San Rafael: McInnis Park and Golf Center (County of Marin), McNears Beach (County of Marin), and China Camp State Park (State of California). Most of the acreage in these parks is counted as "open space" but each park also includes active recreational areas that serve a regional market.

- **Community Parks:** Community parks primarily serve residents from San Rafael and attract users from multiple neighborhoods. They are typically 10 acres or larger and include a variety of facilities such as recreation centers, swimming pools, tennis courts, restrooms, and multi-use athletic fields. There are three community parks in the city limits (Albert Park, Pickleweed Park,

16 City of San Rafael. 2019. San Rafael General Plan 2040 Background Report, *Parks and Recreation Existing Conditions.* December. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

17 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.

18 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January. As described on page 4.15-37 of the San Rafael General Plan 2040 Draft EIR, calculations of parkland and residents typically count parkland within a city's Planning Area (as opposed to the city limits), provided they are publicly accessible for community and neighborhood recreation. Therefore, the population used for parkland ratios also considers the City's Planning Area (in this case the Sphere of Influence). As such, the population for parkland ratios is higher than the citywide population identified in other sections of this EIR.

and Terra Linda Recreation Area) and one in the unincorporated area (Marinwood Park). The service area radius for a community park is approximately 1 mile, and the service area population is 10,000 to 20,000 residents.[19]

- **Neighborhood Parks:** Neighborhood parks serve a more limited geographic area than community parks. They are within walking distance of many users, with a service area radius of 0.5 mile and a service area population of 2,000 to 5,000 residents. Neighborhood parks are typically between 1 and 10 acres in size and include a range of facilities (e.g., softball fields, playgrounds and tot lots, lawn areas, picnic areas, and basketball courts). Examples include Santa Margarita Park and Sun Valley Park.

- **Pocket Parks:** Pocket parks are less than 1 acre in size and draw from a smaller service area than neighborhood parks (e.g., a 0.25-mile radius). Facilities in these parks are usually limited to children's play structures, lawn areas, and places to sit or enjoy nature. Examples include Riviera Park in Peacock Gap and Oliver Hartzel Park on Golden Hinde Boulevard. A few pocket parks have no facilities and were designed as ornamental open spaces along major roads.

- **Special Use Parks:** Special-use parks include parks that serve a unique purpose or activity. These include shoreline trails (such as Starkweather Park along the Bay), the "Field of Dogs" County Dog Park, and the historic homes at Boyd Park and the Falkirk Mansion. These parks play an important role in meeting community-wide cultural and recreational needs or showcasing special community features.

- **Public School Facilities:** Public school facilities include open spaces that are owned and operated by SRCS and MCSD. Although there may be limitations on access, school campuses complement City-operated facilities by providing additional sports fields, hard court areas, and playgrounds.

The parks closest to the project area include Oliver Hartzell Park (approximately 0.35 mile south of the project site), Freitas Park (approximately 0.42 mile west), Terra Linda Garden (approximately 0.45 mile south), Los Ranchitos Park (approximately 0.75 mile southeast), and Lagoon Park (0.77 mile east). Oliver Hartzell Park is an approximate 0.54-acre pocket park with a playground and grassy areas. Freitas Park is an approximately 2.69-acre community park with sports fields, picnic areas, tennis courts, playgrounds, and the San Rafael Community Center. Los Ranchitos Park is an approximate 3-acre neighborhood park with a playground, walking path, grassy areas, a basketball court, and a handball court. Terra Linda Garden is a 1-acre community garden with garden plots available for rent for an annual fee. Lagoon Park is a 10-acre, County-maintained park that is located at the Civic Center campus and includes a dog-friendly walking path, a lagoon, fishing, grassy areas, a playground, and picnic tables.

[19] Terra Linda Recreation Area is counted as a Community Park because it includes a recreation center, swimming pool, and other community-serving facilities, and because of its long-standing role as a community gathering place for North San Rafael. However, at 2.9 acres, the park falls short of the acreage requirement for a Community Park.

4.13.1.5 Libraries

San Rafael's public library system is operated by the City's Library and Recreation Department. The main library branch is located adjacent to City Hall in the Downtown area. There are two satellite branches: the Pickleweed Branch located at the Albert Boro Community Center in eastern San Rafael, and the Northgate Mall Branch located within the main mall building on the project site. The libraries are managed by the City's Library and Recreation Department, which is also responsible for recreation programming, childcare, and arts services.

Existing library facilities in San Rafael total approximately 20,000 square feet. The original Downtown Library opened in 1909 as a 5,160-square-foot facility, and later expanded to the current 14,800 square feet by 1976. The Pickleweed Branch occupies 2,185 square feet, which primarily serves residents of the Canal neighborhood in eastern San Rafael. The Northgate Mall Branch was established in 2018 as a "pop-up" facility that occupies 3,000 square feet. A 2017 assessment of library conditions concluded that that Northgate Mall branch currently meets the needs of the northern San Rafael communities, but that both the main branch and Pickleweed Branch are deficient in meeting the needs of San Rafael and adjacent neighborhoods.[20]

The City's Municipal General Fund supports library services within San Rafael. Additionally, a library special parcel Tax Measure was instituted in 2010 and extended in 2017 to supplement library services. The parcel tax, which is currently set at $59 per year, is intended to be used to maintain library hours, equipment, materials, and services for children, teens, and adults.

4.13.1.6 Regulatory Setting

State Regulations. Development associated with the project would be required to comply with the California Building Code, California Fire Code, Senate Bill (SB) 50, the Mitigation Fee Act, and the Quimby Act, all of which are described below.

California Building Code. The State of California provides a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations (CCR). The CBC is based on the 1997 Uniform Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local, City, and County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire-resistant standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California Fire Code. The California Fire Code incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in CCR Title 24, Part 9. The California

[20] City of San Rafael. 2020. *Community Services Background Report.* February. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

Fire Code is revised and published every 3 years by the California Building Standards Commission.

Senate Bill 50. SB 50 limits the power of cities and counties to require mitigation of school facility impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding, and whether the school district meets certain additional criteria involving bonding capacity, year-round school schedule, and the percentage of moveable classrooms in use.

Mitigation Fee Act. The Mitigation Fee Act requires any local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied.

Quimby Act. The Quimby Act of 1975 authorizes cities and counties to pass ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act sets a standard park-space-to-population ratio of up to 3 acres of park space per 1,000 persons. Cities with a ratio higher than 3 acres per 1,000 persons can set a standard of up to 5 acres per 1,000 persons for new development. The calculation of a city's park-space-to-population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland.

Local Regulations. Development associated with the proposed project would be required to comply with the General Plan and the San Rafael Municipal Code, described below.

San Rafael General Plan 2040. The following General Plan goals, policies, and actions relevant to public services would apply to the proposed project:

Goal PROS-1: Quality Parks for All to Enjoy. Sustain high quality parks that meet the recreational needs of all those who live and work in San Rafael

Policy PROS-1.2: Per Capita Acreage Standard. Maintain a citywide standard of 4.0 acres of improved park and recreation land per 1,000 residents.

Program PROS-1.2C: Exemptions. to reduce further increases in housing costs, exempt accessory dwelling units and affordable housing units from park in-lieu and dedication requirements. Consider eliminating the existing exemption for market-rate rental housing or adopting a modified fee schedule which considers factors such as unit size and total project size.

Policy PROS-1.11: Urban Parks and Plazas. Encourage the creation of small gathering places open to the public in Downtown San Rafael and other business districts, including plazas, green spaces, activated alleys, and similar features

Program PROS-1.11A: Design for All Users. Engage park users, businesses, residents, and social service providers in the design and management of urban parks to safely accommodate all users, provide universal access, and minimize conflicts

Program PROS-1.11B: Activating Public Space. Work with cafes, restaurants, and other businesses to activate and maintain urban parks and plazas. This can provide 'eyes on the space,' create a sense of ownership, and facilitate economic vitality by providing space for outdoor dining and vending.

Policy PROS-1.13: Recreational Facilities in Development Projects. Encourage, and where appropriate require, the construction of on-site recreational facilities in multi-family, mixed use, and office projects to supplement the facilities available in City parks.

Policy PROS-1.14: Commercial Recreation. Encourage private sector development of complementary recreational facilities to serve community needs, such as commercial recreation and athletic field facilities, swim clubs, tennis clubs, marinas, and gyms and health clubs.

Goal CSI-3: Exceptional Public Safety Services. Provide and maintain exceptional fire, public safety, and paramedic services.

Policy CSI-3.2: Mitigating Developmental Impacts. Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public health and safety, fire prevention, and emergency access and response times meet current industry standards.

Program CSI-3.2A: Crime Prevention through Environmental Design. Design new public and private development to achieve "eyes on the street" including site planning, lighting, landscaping, and architectural design features that reduce the potential for crime.

Program CSI-3.2B: Emergency Response Time. Use the development review process to identify appropriate measures to reduce fire hazards and ensure emergency response capacity that is consistent with National Fire Protection Association standards.

4.13.2 Impacts and Mitigation Measures

The following section provides a discussion of impacts related to public services and recreation that could result from implementation of the proposed project. The section begins with the criteria of significance, establishing the thresholds to determine whether an impact is significant. The latter part of this section describes the impacts associated with implementation of the project and recommends mitigation measures, if required.

In the context of this section, it is important to note that consistent with *City of Hayward v. Trustees of California State University (2015) 242 Cal.App.4th 833*, significant impacts under the California Environmental Quality Act (CEQA) consist of adverse changes in any of the physical conditions within the area of a project, and potential impacts on public safety services that are not an environmental

impact that CEQA requires a project sponsor to mitigate. Specifically, the obligation to provide adequate fire and emergency medical services is the responsibility of the City.[21] Thus, the need for additional staff to provide fire or police protection services, absent physical effects associated with the construction of new facilities required for the provision of such services, would not be considered an environmental impact that CEQA requires an individual project proponent to mitigate.

4.13.2.1 Significance Criteria

Implementation of the project would result in a significant impact related to public services and recreation if it would:

Threshold 4.13.1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: fire protection; police protection; schools; parks; or, other public facilities;

Threshold 4.13.2: Result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

Threshold 4.13.3: Include recreational facilities or require the construction or expansion of recreational facilities that would have an adverse physical effect on the environment.

4.13.2.2 Project Impacts

The following section discusses potential impacts related to public services and recreation associated with development of the proposed project, including construction and implementation of Phase 1 (which would result in the creation of 922 residential units and a reduction of 756 jobs [2025 Master Plan]) and Phase 2 (which would result in an additional 500 residential units and a reduction of 813 jobs).[22] Overall, the proposed project would result in the introduction of 1,422 residential units and approximately 3,541 new residents to the project site. The proposed project would reduce the number of jobs on the site by 1,569 compared to full occupancy of the mall.

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21 "The protection of the public safety is the first responsibility of local government and local officials have an obligation to give priority to the provision of adequate public safety services." (Cal. Const., art. XIII, § 35, subd. (a)(2)

22 Although this analysis discusses the potential impacts of Phase 1 and Phase 2 development as projected to occur in the years 2025 and 2040, respectively, it is acknowledged that potential development could be accelerated or slowed, depending on market conditions. Therefore, to be conservative, this analysis considers the impact of project operations at full buildout as a singular phase.

Threshold 4.13.1: Provision of Public Services. The following section includes a discussion of impacts related to fire protection, police protection, schools, parks, and other public facilities.

Fire Protection. Impacts on fire protection services are considered significant if an increase in population or building area would result in inadequate response times or other performance objectives for fire protection and/or increased demand for services that would require construction of new fire protection facilities. The following analyzes project-related impacts to fire protection services that could occur with implementation of the proposed project during both construction and operation.

Construction associated with the proposed project could increase the potential for accidental on-site fires from the operation of construction equipment, the use of flammable construction materials, and sparking during the removal of existing on-site vegetation. As required by the California Occupational Safety and Health Administration (Cal/OSHA) and Fire and Building Code requirements, the construction contractor would be required to carefully store flammable materials in appropriate containers during project construction, use construction equipment with spark arrestors, and immediately and completely clean up spills of flammable materials when they occur. In addition, the construction contractor and construction personnel would be trained in emergency response, and fire suppression equipment specific to the construction site would be available and maintained on site for the duration of the construction period. Adherence to existing laws would ensure that the proposed project would not have a significant construction impact related to fire protection service from the SRFD. As such, construction-related impacts to fire protection would be minimized and the provision of and/or need for new or physically altered governmental facilities (the construction of which could cause significant environmental impacts) would not be required.

As discussed in Section 4.2, Population and Housing, the proposed project would be consistent with the development assumed for the project site in the General Plan, the General Plan EIR, and Housing Element. The General Plan EIR determined that the addition of the City's Public Safety Center, the recent reconstruction of Fire Station 52, the construction of Fire Station 57, and the planned rehabilitation of Fire Stations 54 and 55 would ensure that SRFD facilities are adequate to serve the anticipated buildout of the General Plan. Buildout of the General Plan is projected to occur over a 20-year horizon through 2040. Because potential future development under the General Plan would occur in existing urban areas serviced by the SRFD, and because buildout of the General Plan would occur over time and not all at once, the SRFD would be expected to be able to maintain service ratios and response times despite the growth. As noted previously, the SRFD also determined that existing equipment and staffing levels would be adequate to accommodate growth under buildout of General Plan 2040. The proposed project would be consistent with the amount of residential development assumed for the project site in the General Plan, and therefore would not result in any new or more substantial population growth than was previously planned for by the SRFD. In addition, as described above, the proposed project would result in an overall reduction in the number of jobs on the project site compared to full occupancy of the mall.

Although the SRFD did not identify the need for new staffing as part of the General Plan buildout, the SRFD did identify a need for additional ambulances. In addition, as stated above,

the SRFD is currently staffed at 1.16 firefighters per 1,000 residents, which is below the NFPA standard of approximately 1.54 to 1.81 firefighters per 1,000 persons.[23] Staffing levels are one of many factors considered in the SFRD's ability to meet its response time goals and utilizing its existing facilities. To be consistent with the minimum NFPA standard, the proposed project would result in the need for three additional firefighters for Phase 1 (2,258 new residents) and two new firefighters for Phase 2 (1,283 residents). Fire department staffing and equipment are reviewed through an annual budgeting process during which citywide priorities are established and service levels monitored, allowing adjustments where needed. Any added personnel would be funded through the City's General Fund. Revenue and taxes generated by the project would contribute to the City's General Fund for purposes such as funding added personnel and new equipment. The addition of new staff and equipment (i.e., ambulances) would not result in the need for new facilities, and the addition of new staff would ensure that the SFRD continues to meet established response time goals. Therefore, because the proposed project would not result in any development beyond that which was already considered in the General Plan and General Plan EIR, and because the proposed project would not require the provision of or need for new or physically altered facilities, the construction of which could result in adverse environmental effects, to continue to serve the project site, this impact would be **less than significant**.

Police Protection. Impacts on police protection services are considered significant if an increase in population would result in inadequate response times or other performance objectives for police protection and/or increased demand for services that would require construction of new police protection facilities. The following analyzes project-related impacts to police protection services that could occur with implementation of the proposed project.

As previously discussed, in 2021, the SRPD responded to 47,829 calls for service. While reducing the amount of commercial space on the site would reduce the number of retailers, employees, and visitors to the site and therefore likely decrease the number of calls for service associated with this type of use, the proposed project would also result in the introduction of 1,422 residential units and 3,541 new residents to the project site. Overall, the project would increase the population on the site compared to current conditions, including the nighttime population, and would therefore result in an increase in demand for police services in the project area and a corresponding increase in the number of calls for service. However, as discussed in Section 4.2, Population and Housing, the proposed project would be consistent with the development assumed for the project site in the General Plan, General Plan EIR, and Housing Element.

Additionally, as stated above, the SRPD is currently staffed at 1.08 officers per 1,000 residents, which is within the industry standard target of 1 to 1.5 officers per 1,000 residents. To maintain this level of staffing after completion of Phase 1 of the proposed project, which would result in approximately 2,258 new residents, SRPD would need to hire two new officers by 2025. Phase 2 would result in an additional approximately 1,283 residents, which would require SRPD to hire one new officer by 2040 to maintain the service ratio. Police services and staffing ratios are reviewed through an annual budgeting process during which citywide priorities are established

[23] This standard is for firefighting purposes only and does not take into account paramedic transport agencies such as SRFD that have far higher call volumes that are emergency medical service (EMS) related.

and service levels monitored, allowing adjustments where needed. Any added personnel would be funded through the City's General Fund. Revenue and taxes generated by the project would contribute to the City's General Fund for such purposes as funding added personnel. Additional officers needed to meet SRPD's desired staffing level would be accommodated by existing facilities and established response time goals would continue to be met.

Furthermore, as described in Chapter 3.0, Project Description, the proposed project would include a police substation on the project site for use by the SRPD. The substation would not be regularly staffed, but would be used as a satellite office for officers to use for paperwork and other office duties while they are in the field instead of having to return to police headquarters. Therefore, inclusion of the substation would lower responses times for the project site and the surrounding area.[24] Lastly, the proposed project would replace vacant commercial spaces with new residential uses and new and renovated commercial uses, which would increase the daytime and nighttime population on the project site, therefore increasing activity on the project site. An increase in activity on the project site would result in more "eyes on the street" providing informal surveillance and thus reducing the opportunity for crime. Therefore, because the proposed project would not result in any development beyond that which was already considered in the General Plan and General Plan EIR and because the proposed project would not require the provision of or need for new or physically altered facilities, the construction of which could result in adverse environmental effects, to continue to serve the project site, this impact would be **less than significant.**

Schools. The proposed project would introduce up to 1,422 new residential units, which would include 147 affordable units (all of which would be constructed in Phase 1). According to the MCSD, the proposed project would be estimated to generate one student for every 8.5 residential units, and one student for every 3.5 affordable units.[25,26] Therefore, according to the MCSD, the proposed project would be estimated to generate approximately 91 students from market rate units and 42 students from affordable units in Phase 1, for a total of 133 new students. In Phase 2, the proposed project would be estimated to generate 58 students from market rate units and 142 students from affordable units, for a total of 200 students. At buildout, the MCSD estimates a total of 333 elementary and middle school students would be generated.[27]

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24 San Rafael Police Department. 2022. *Crime Prevention Through Environmental Design Site Review, Northgate Town Square Project Redevelopment Plan.* September 23.

25 Miller Creek Elementary School District. 2022. *Re: Development Impacts in Our Community*. Written communication with Merlone Geier Partners and the City of San Rafael. March 21.

26 MCSD's student generation rate is specific to the proposed project and is based on a "survey of other recently constructed multi-family housing." Given that these survey data were not available for review, SRCS student generation rates are used in the EIR analysis, but the MCSD rates are provided for informational purposes.

27 The student generation estimate provided by MCSD does not differentiate between elementary and middle school students.

The SRCS high school student generation rate for multi-family housing is 0.1108 student per unit. Therefore, the proposed project would generate 102 high school students in Phase 1 and 55 high school students in Phase 2, for a total of 157 high school students at buildout.

Students living on the project site would attend Vallecito Elementary School, Miller Creek Middle School,[28] and typically Terra Linda High School.[29] Based on the capacity status of the schools serving the project identified in Table 4.13.C, enrollment within both the MCSD and SRCS would exceed capacity with development of the proposed project; therefore, the MCSD and SRCS would need to either expand their existing facilities or construct new schools. Students may also be re-directed to other "non-home" schools within the districts as enrollment at the nearest schools to the site exceeds capacity.

While implementation of the proposed project would generate new students, possibly requiring the expansion of school facilities, such development would be subject to the Mitigation Fee Act. The payment of such fees is deemed to fully mitigate the impacts of new development on school facilities, per California Government Code Section 65995. Furthermore, as discussed in Section 4.2, Population and Housing, the proposed project would be consistent with the development assumed for the project site in the General Plan, General Plan EIR, and Housing Element. Additionally, if new school construction or expanded school facilities become necessary, such projects would be subject to separate permitting and CEQA review in order to identify and mitigate potential environmental impacts. Therefore, impacts related to schools would be **less than significant**.

Parks. As discussed above in Section 4.13.1.4, the total improved parkland acreage in the San Rafael Planning Area totals 314 acres when counting school open space at 50 percent. Considering there are 73,300 residents within the City's Sphere of Influence, there are currently 4.28 acres of improved parkland per 1,000 residents.[30] The proposed project would increase the City's population by up to 3,541 persons,[31] which would decrease the parkland-to-resident ratio to 4.09 acres of improved parkland per 1,000 residents.[32] This ratio would remain within the citywide standard of 4.0 acres of improved park and recreation land per 1,000 residents as established by Policy PROS-1.2: Per Capita Acreage Standard of the San Rafael General Plan 2040. Therefore, additional parkland would not be required to accommodate the new development to maintain the City's desired parkland-to-resident ratio, and the provision of new or physically altered governmental facilities (the construction of which could cause significant

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28 Miller Creek Elementary School District. 2023. Enrollment. Website: https://www.millercreeksd.org/departments/enrollment/index (accessed August 2023).

29 The San Rafael High School District is an open enrollment district, which means that any student who lives within San Rafael may choose to attend either San Rafael High School or Terra Linda High School.

30 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft Environmental Impact Report*. January.

31 1,422 residential units x 2.49 persons per household (average household size as detailed in Section 4.2, Population and Housing) = 3,541 persons

32 73,300 residents + 3,541 = 76,841.
314 acres of parkland ÷ 76,841 = 0.00408 *1,000 = 4.08 acres per 1,000 residents in the Sphere of Influence.

environmental impacts) in order to maintain acceptable performance objectives would not be required. Impacts would be **less than significant**.

Other Public Facilities. This analysis focuses on libraries as well as other public facilities (i.e., City Town Hall and City Departments) that have been developed to accommodate the buildout population of San Rafael as well as the employment force in the city. As described previously, the City provides library services to San Rafael residents and employees through three branches: the Downtown Library at 1100 E Street (approximately 1.9 miles southeast of the project site), the Pickleweed Library at 50 Canal Street (approximately 3.3 miles southeast of the project site), and the Northgate Library at 5800 Northgate Drive (located within the existing mall on the project site).

Development of the proposed project would increase demand for other public services, including libraries, community centers, and public healthcare facilities. However, upon consultation with the City's Library and Recreation Director, no concerns were expressed regarding the potential increase in use of existing library facilities.[33] Additionally, the project sponsor would be required to pay a Development Impact Fee of $0.12 per square foot of commercial space and $127.50 per bedroom for residential uses to cover the cost of the new development's impact upon public facilities and services in San Rafael. This program would ensure that any impact to public facilities that could occur from the proposed project would be offset by impact fees. Any future construction of new or expansion of existing public facilities would be subject to project-level environmental review and site-specific mitigation as appropriate in order to ensure that significant environmental impacts are avoided or mitigated at the time such development actions are proposed to or by the City.

The proposed project would also include approximately 5,000 square feet of library space to replace the existing 3,000-square-foot library within Northgate Mall. Construction and operation of the proposed open space and recreational facilities have been evaluated throughout this EIR under the appropriate resource sections (e.g., air quality and biological resources) and is included in the analysis of environmental impacts of the proposed project in this Environmental Impact Report (EIR). Pursuant to buildout of the proposed project, potentially adverse impacts to the environment that may result in impacts to libraries and other public facilities would be less than significant upon the implementation of the General Plan's goals, policies, and actions and the existing federal, State, and local regulations. Therefore, development of the proposed project would result in a **less than significant** impact relating to new or expanded libraries and other public facilities.

Threshold 4.13.2: Parks and Recreational Facility Use. Development of the proposed project could increase the use of parks within the vicinity of the project site, including Oliver Hartzell Park, Los Ranchitos Park, Terra Linda Garden, and Lagoon Park. The proposed project is anticipated to increase San Rafael's population by up to 3,541 persons,[34] which is a 5.7 percent increase from the

[33] City of San Rafael. September 23, 2022. Catherine Quffa, Library and Recreation Director. Personal communication with Tricia Stevens, City of San Rafael Contract Planner.

[34] 1,422 residential units x 2.49 persons per household (as detailed in Section 4.2, Population and Housing) = 3,541 persons

existing population of the city of 61,271 persons and an increase of 4.8 percent in the population within the City's Sphere of Influence. The project-generated 3,541 new residents may use nearby recreational facilities; however, as discussed above, with implementation of the proposed project, a ratio of 4.09 acres of parkland per 1,000 residents would be maintained within the City's Sphere of Influence.

In addition, as detailed in Chapter 3.0, Project Description, on-site open space would include: (a) courtyards and roof decks for each of the residential buildings; (b) outdoor amenity spaces that would be open to the public and would include a bike hub/fix it station, a shipping container café with associated outdoor dining tables, fire features, lounge seating, and a flexible turf area; and (c) a Town Square that would be open to the public and would include a large flexible lawn space, a dog park, children's nature play features, a water feature, a flexible stage, fire features, lounge seating, and game tables. The approximately 48,075-square-foot Town Square would be constructed in Phase 1 of the proposed project, which would include a total of 295,659 square feet of useable open space. Phase 2 of the proposed project would include 81,750 additional square feet of useable open space, for a total of approximately 377,409 square feet.

The proposed on-site recreation and open space facilities are intended to serve the majority of new residents and the availability of recreational and open space uses on site would likely lessen the usage of existing parks in the vicinity of the project site because these amenities would be conveniently accessed by existing residents in the project vicinity. In addition, pursuant to Chapter 15.09 of the City's Subdivision Ordinance, the project sponsor would be required to pay a parkland dedication fee of $1,967.98 per dwelling unit available for purchase.[35] This fee is used for acquisition and improvement of parkland for the additional population generated by new development. This program would ensure that any impact to parkland that could occur from the proposed project would be offset by impact fees. Therefore, the proposed project would not result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, and impacts would be **less than significant**.

Threshold 4.13.3: Construction or Expansion of Recreational Facilities. As discussed above, the proposed project would not require additional parkland to serve the new development to maintain the City's desired parkland-to-resident ratio and would not result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, the proposed project would not require the construction or expansion of existing recreational facilities.

As discussed above, the proposed project would include construction of on-site open space and recreational facilities. Construction and operation of the proposed open space and recreational facilities have been evaluated throughout this EIR under the appropriate resource sections (e.g., air quality and biological resources). Potentially adverse impacts to the environment that may result from the creation of open space and recreational facilities pursuant to buildout of the proposed project would be less than significant upon implementation of the General Plan's goals, policies, and

[35] City of San Rafael. 2016. *Development Impact Fees.* November 19. Website: https://www.cityofsanrafael.org/documents/development-fees/ (accessed March 9, 2023).

actions and existing federal, State, and local regulations. Therefore, development of the proposed project would result in a **less than significant** impact relating to new or expanded park and recreational facilities.

4.13.2.3 Cumulative Impacts

The cumulative development of residential and commercial uses in San Rafael will proportionally increase the demand for public services. According to the General Plan EIR, cumulative development within San Rafael is anticipated to result in 4,460 new residential units, 8,910 new residents, and 4,115 new employees between 2020 and 2040. As noted previously, the proposed project would be consistent with this cumulative development because it would be consistent with the type and intensity of development assumed for the project site in the General Plan and General Plan EIR.

A significant cumulative impact would occur if cumulative development required the provision of new or expanded public facilities to maintain acceptable service ratios, the construction of which would cause a significant environmental impact. Because the proposed project is consistent with the cumulative citywide development analyzed in the General Plan EIR, cumulative impacts would be **less than significant**.

4.14 UTILITIES AND SERVICE SYSTEMS

This section describes the utility systems (water, wastewater, solid waste, energy, and telecommunications) serving the project site and identifies the potential impacts to utility services and infrastructure that could result from implementation of the proposed project. Standard conditions of approval and/or mitigation measures to reduce or avoid potentially significant utility system impacts are identified, where appropriate. Impacts to the stormwater system are also more fully discussed in Section 4.7, Hydrology and Water Quality, of this Environmental Impact Report (EIR).

4.14.1 Setting

This section addresses the following utilities: (a) water supply, treatment, and distribution; (b) wastewater collection, treatment, and disposal; (c) solid waste; (d) energy; and (e) telecommunications.

4.14.1.1 Water Service, System and Supply

The following discussion provides background information on the sources of water, water treatment facilities, and water distribution system in the project area.

Water Supply. Potable water that is suitable for human consumption is provided to the project area by a publicly-owned and managed water system, administered by Marin Water, formerly known as the Marin Municipal Water District (MMWD). Marin Water serves more than 191,000 people in a 147-square-mile area[1] within eastern Marin County south of Novato. Twenty-seven (27) percent of the customers served by Marin Water are located in San Rafael.[2,3]

Marin Water's primary water supply is local surface water. The Marin Water water supply system consists of a network of 7 reservoirs with a total storage capacity of 25.9 billion gallons, 3 water treatment plants, 97 pump stations, 130 water storage tanks, and 908 miles of pipeline that collect, transmit, treat, and distribute water to Marin County customers.[4] Water is sourced locally, primarily from reservoirs on Mt. Tamalpais (75 percent of the water supply) and in west Marin. The estimated amount of water available from these surface sources is approximately 142,000 acre-feet per year (AFY), 75 percent of which originates from rainfall.[5] Marin Water also has an agreement with the Sonoma County Water Agency, effective through June 2025 with a renewal provision extending it through 2040, to import up to 14,300 AFY, primarily from the Russian River. Other water sources used by the Sonoma County Water Agency include surface diversions from Lake Mendocino, Lake Sonoma, and groundwater from the Santa Rosa Plain Subbasin of the Santa Rosa Valley Basin, although groundwater is used primarily as a drought period supply, or when the Russian River

1 Marin Water. 2021. *2020 Urban Water Management Plan.* May.
2 Marin Water. n.d. *Mission and History.* Website: https://www.marinwater.org/mission-and-history (accessed January 17, 2022).
3 City of San Rafael. 2021. *San Rafael General Plan 2040.*
4 Marin Water. *2019 Annual Water Quality Report.*
5 Marin Water. n.d. *Water Quality*. Website: https://www.marinwater.org/water-quality (accessed January 17, 2022).

supplies are otherwise constrained.[6] Marin Water's normal year water supply and projected demand through 2045 is show in Table 4.14.A.[7] As shown in Table 4.14.A, the Marin Water water demand is, and will remain, significantly lower than its normal year water supply. Table 4.14.A also shows available water supplies for a single dry year through 2045. Similar to the normal year supply, water demand would remain well below the single dry year water supply through 2045.

As shown in Table 4.14.A, under multiple dry years from 2025 through 2045 there is also no shortfall in the water supply for each consecutive 5-year period.[8] However, as shown in Table 4.14.A, under extreme drought conditions, which is the "worst-case" supply scenario in which total available supply is reduced to below 14,000 AFY by 2025, maximum shortfalls of up to 65 percent are projected, beginning with a 7.5 percent shortfall in the third year, then a 36 percent shortfall in the fourth year, followed by up to a 65 percent shortfall in the fifth year.[9]

The water system includes pipelines ranging in size from 0.75-inch-diameter pipes that connect to customers' water meters to 42-inch-diameter transmission mains that carry source water to the treatment plants. From 2016–2020, 54 percent of Marin Water's provided water was associated with residential use, 10 percent with commercial use, 5.5 percent with landscape, and 5.3 percent with institutional/governmental uses. Marin Water also supplies non-potable water, primarily for outdoor irrigation to commercial customers, which makes up about 3.7 percent of total water use within the District. Historical potable water use at the project site ranged from 17 to 32 AFY between 2017 and 2021, and historical recycled water use ranged from 9.7 to 17 AFY.[10]

Water Treatment Facilities. There are three water treatment plants operated by Marin Water that treat approximately 20.4 million gallons of water per day and have a combined design capacity to treat up to 71 million gallons per day (mgd).[11] These include the Bon Tempe Treatment Plant near Ross, the San Geronimo Treatment Plant in Woodacre, and the Ignacio Treatment Facility in Novato. In addition, there are five wastewater treatment plants within Marin Water's service area that collectively treat approximately 17,200 AFY of wastewater (refer to additional discussion in Section 4.14.1.2, below). Marin Water produces its own recycled water from effluent provided by the Las Gallinas Valley Sanitary District (LGVSD). Water treatment operations include aeration of surface water stored in reservoirs, removal of suspended matter in clarifiers, removal of microscopic particles in deep bed multi-media filters, inactivation of bacteria and pathogens by disinfectants, treatment for corrosion control, and fluoridation.[12]

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6 Marin Water. 2022. *Water Supply Assessment for Northgate Town Square.* November.
7 Ibid.
8 The Urban Water Management Plan requires that a multiple dry year drought scenario be presented for 5 consecutive years, although Water Supply Assessment rules only require a 3-year scenario.
9 Ibid.
10 Ibid.
11 Marin Water. 2021. *2020 Urban Water Management Plan.* May.
12 Ibid.

Table 4.14.A: Marin Water Supplies, Demand, and Surplus (Shortfalls) – 2025 to 2045

Years	Normal Year			Single Dry Year			Multiple Dry Years			Extreme Drought Years		
	Water Supply (AFY)	Total Water Demand (AFY)	Surplus (Shortfall) (AF)	Water Supply (AFY)	Total Water Demand (AFY)	Surplus (Shortfall) (AF)	Water Supply (AFY)	Total Water Demand (AFY)	Surplus (Shortfall) (AF)	Water Supply (AFY)	Total Water Demand (AFY)	Surplus (Shortfall) (AF)
2025												
Year 1	83,840	37,269	**46,571**	51,211	37,269	**13,942**	78,635	37,269	**41,366**	62,778	37,269	**25,509**
Year 2	–	–	–	–	–	–	83,400	37,269	**46,131**	46,161	37,269	**8,892**
Year 3	–	–	–	–	–	–	85,509	37,269	**48,240**	34,614	37,269	**(2,655)**
Year 4	–	–	–	–	–	–	71,779	37,269	**34,510**	23,956	37,269	**(13,313)**
Year 5	–	–	–	–	–	–	68,520	37,269	**31,251**	13,060	37,269	**(24,209)**
2030												
Year 1	84,093	37,296	**46,797**	51,213	37,296	**13,917**	78,636	37,296	**41,340**	13,060	37,296	**(24,236)**
Year 2	–	–	–	–	–	–	83,389	37,296	**46,093**	13,060	37,296	**(24,236)**
Year 3	–	–	–	–	–	–	85,524	37,296	**48,228**	13,060	37,296	**(24,236)**
Year 4	–	–	–	–	–	–	71,771	37,296	**34,475**	13,060	37,296	**(24,236)**
Year 5	–	–	–	–	–	–	68,508	37,296	**31,212**	13,060	37,296	**(24,236)**
2035												
Year 1	83,825	37,225	**46,600**	51,209	37,225	**13,984**	78,634	37,225	**41,409**	13,060	37,225	**(24,165)**
Year 2	–	–	–	–	–	–	83,416	37,225	**46,191**	13,060	37,225	**(24,165)**
Year 3	–	–	–	–	–	–	85,493	37,225	**48,268**	13,060	37,225	**(24,165)**
Year 4	–	–	–	–	–	–	71,802	37,225	**34,577**	13,060	37,225	**(24,165)**
Year 5	–	–	–	–	–	–	68,545	37,225	**31,320**	13,060	37,225	**(24,165)**
2040												
Year 1	83,858	37,301	**46,557**	51,213	37,301	**13,912**	78,636	37,301	**41,335**	13,060	37,301	**(24,241)**
Year 2	–	–	–	–	–	–	83,388	37,301	**46,087**	13,060	37,301	**(24,241)**
Year 3	–	–	–	–	–	–	85,527	37,301	**48,226**	13,060	37,301	**(24,241)**
Year 4	–	–	–	–	–	–	71,770	37,301	**34,469**	13,060	37,301	**(24,241)**
Year 5	–	–	–	–	–	–	68,506	37,301	**31,205**	13,060	37,301	**(24,241)**
2045												
Year 1	83,926	37,458	**46,468**	51,223	37,458	**13,765**	78,641	37,548	**41,093**	13,060	37,548	**(24,488)**
Year 2	–	–	–	–	–	–	83,336	37,548	**45,788**	13,060	37,548	**(24,488)**
Year 3	–	–	–	–	–	–	85,604	37,548	**48,056**	13,060	37,548	**(24,488)**
Year 4	–	–	–	–	–	–	71,701	37,548	**34,153**	13,060	37,548	**(24,488)**
Year 5	–	–	–	–	–	–	68,402	37,548	**30,854**	13,060	37,548	**(24,488)**

Source: *Water Supply Assessment for Northgate Town Square* (Marin Water 2022).
AF = acre-feet
AFY = acre-feet per year

Distribution System. Treated water is distributed through a network of 886 miles of water mains, 94 pump stations, and 127 treated water storage tanks with a total capacity of 74.9 million gallons. In addition, Marin Water operates 27 miles of reclaimed water pipeline that is capable of delivering 1.9 million gallons of treated wastewater for irrigation and other non-potable purposes.[13]

The project site draws potable water from connections to existing 8-inch-diameter water mains in Las Gallinas Avenue, Los Ranchitos Road, and Northgate Drive. Connections to the existing 8-inch-diameter water mains are made at the northeast corner of the site in Las Gallinas Avenue, on the east side of the project site near the entrance opposite Merrydale Road and at the south end of the site near the intersection of Northgate Drive and El Faison Drive. In addition, there are two water main connections to an existing water main in Northgate Drive along the west boundary of the site near the Kohl's building. There is also a 21-inch-diameter water main along the eastern boundary of the project site in Las Gallinas Avenue and Los Ranchitos Road, but the project site does not appear to be connected to this line, nor is a future connection proposed for the project site. The potable water connections from the existing 8-inch-diameter mains in the public streets surrounding the project site provide water to an interconnected on-site water distribution system that supplies water for the building meters, building fire suppression systems, hydrants, and irrigation throughout the site.

There are separate recycled water mains in Las Gallinas Avenue to the north of the project site, in Los Ranchitos Road to the east of the project site, and in Northgate Drive to the south of the project site. There is no existing recycled water main in Northgate Drive to the west of the project site. There are existing connections to the recycled water main to the east of the project site. There are no known required, planned, or future upgrade projects within the vicinity of the project site that would impact the project site, and Marin Water has not indicated any concerns about the ability of the water delivery or treatment system to serve the project site.

Water Demand. In 2015, water demand on Marin Water's system was 37,547 AFY, including both potable and raw water. By 2045, Marin Water projects that water demand will increase to 37,458 AFY, including both potable and raw water, based on population and employment growth projections from the 2018 Association of Bay Area Governments Plan Bay Area Projections 2040. The projected water demand in 2045 would be approximately 45 percent of the available supply in 2045 during a normal water year (83,926 AFY), 73 percent of the available supply during a single dry year (51,223 AFY), and 55 percent of the available supply during multiple dry years (68,402 AFY in the fifth year of a 5-year drought).[14] Therefore, the projected water demand through 2045 would be within the system's capacity, even during periods of multiple dry years.[15] Under extreme drought

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13 Marin Water. 2021. *2020 Urban Water Management Plan.* May.

14 As mentioned in Section 6.9 of the 2020 Urban Water Management Plan (2020 UWMP), projected supplies are based on modeling performed as part of the 2020 UWMP update. It is not uncommon for projected supplies to be higher during multiple-year droughts as compared to single-year droughts. The guidance from the Department of Water Resources for projected dry year supplies are to use the lowest available water supply for single dry years and the driest 5-year period in the district's historical record for multiple dry years (see Section 7.2 of the 2020 UWMP for more detail). Given this, it is possible for the single dry year to be lower than the multiple dry year supply values.

15 Marin Water. 2022. *Water Supply Assessment for Northgate Town Square.* November.

conditions, the potable and raw water supply would be reduced to 13,060 AFY, and the demand would exceed the supply by 24,398 AFY.

The largest proportion of water demand within the Marin Water service area is from the single-family residential sector, which represented approximately 39 percent of the demand in the 2017–2021 period. The remainder of the demand is split between environmental releases from the Kent Lake and Soulajule Reservoir (29 percent), the multi-family residential sector (8.7 percent), losses (7.2 percent), commercial (7 percent), industrial/governmental (3.8 percent), dedicated landscape (3.7 percent), other potable (1 percent), and non-potable demand (0.6 percent).

Marin Water is also pursuing additional water sources to supplement the available water supply in the future in times of drought. These include the following: (a) an Intertie Project that would consist of the construction of an 8-mile pipeline across the Richmond-San Rafael Bridge that would carry water purchased from third parties; (b) a potential desalination facility; and (c) a "Winter Water" project in which Marin Water would obtain excess water from the Russian River that is above the minimum in stream flow requirements.[16] The proposed Intertie Project is undergoing the California Environmental Quality Act (CEQA) environmental review process, a desalination facility is being investigated as a future supplemental water supply option, and Marin Water is currently working with Sonoma Water to explore the feasibility of capturing and using winter water as drinking water during periods of drought.[17,18,19]

Other efforts that Marin Water is making to assist in water conservation efforts include: (a) offering free non-potable recycled water for irrigation and other outdoor uses, a variety of rebates, and free water-efficient fixtures and water-saving kits; (b) providing free outdoor water use consultations with conservation and gardening tips for home gardens; and (c) imposing penalties for water use above certain amounts based on a customer's tier, seasonal restrictions on outdoor irrigation, and restrictions on the filling of swimming pools.[20]

Marin Water has a Water Shortage Contingency Plan[21] (WSCP) that defines water shortage levels and identifies corresponding response actions and procedures for reducing demand for water during mild to severe droughts or other water shortage conditions. The WSCP includes the stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that Marin Water has in place the necessary resources and management

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16 Marin Water. n.d. *Water Supply Projects.* Website: https://www.marinwater.org/WaterSupplyProjects (accessed January 17, 2022).

17 Marin Water. n.d. *Intertie Project.* Website: https://www.marinwater.org/Intertie (accessed August 4, 2023).

18 Marin Water. n.d. *Desalination.* Website: https://www.marinwater.org/desalination (accessed August 4, 2023).

19 Marin Water. n.d. *Winter Water from Sonoma County Water Agency.* Website: https://www.marinwater.org/SonomaWaterProject#:~:text=Overview,of%20water%20received%20from%20Sonoma (accessed August 4, 2023).

20 Marin Water. n.d. *Your Water*. Website: https://www.marinwater.org/your-water (accessed January 17, 2022).

21 Marin Water. 2023. *Water Shortage Contingency Plan.* February.

responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The WSCP also includes procedures to conduct an annual assessment of water supply and demand in order to determine whether water shortage conditions are likely to exist in the forthcoming year, and to proactively begin the process of implementing WSCP stages of action, as appropriate. Marin Water is also currently preparing a Strategic Water Supply Assessment, which will identify ways in which its water supply portfolio can be augmented to serve all users in an extreme drought scenario and will introduce new measures to augment supply to meet its customers' water needs.[22]

4.14.1.2 Wastewater (Sanitary Sewer) System

Sanitary sewer service is provided to the project area by the LGVSD. This section describes the LGVSD's wastewater collection, treatment, and disposal.

Wastewater Collection. The LGVSD collection system consists of 105 miles of gravity sewer pipelines, 6.7 miles of force mains/pressure sewers, and 28 pump stations. The LGVSD collects and treats wastewater for approximately 32,000 residents and businesses in North San Rafael and neighboring parts of unincorporated Marin County. The service area spans roughly 20 square miles. All wastewater collected by the LGVSD is conveyed to the LGVSD treatment and recycling facilities, which are located on over 400 acres on San Pablo Bay.[23,24,25]

The project site has three existing points of connection to the existing public sewer system maintained by the LGVSD. Two points of connection are in manholes located in Las Gallinas Avenue at the northern boundary of the site, and the third connection is at a manhole in Los Ranchitos Road at the southeast corner of the site. The sewer pipes within the project site are 6 to 8 inches in diameter. The existing sewer main in Las Gallinas Avenue is 8 inches in diameter and conveys sewer flows northerly to a 12-inch-diameter gravity sewer main that terminates northeasterly of the project site at the John Duckett sewer pump station. The John Duckett sewer pump station pumps sewer flows through a force main to the LGVSD wastewater treatment plant. The existing sewer main in Los Ranchitos Road is an 8-inch-diameter main that conveys sewer flows northerly toward Merrydale Road then easterly and southerly to the San Rafael Meadows pump station. The San Rafael Meadows pump station pumps sewer flows east across United States Route 101 (US-101) into a gravity and force main system that eventually terminates at the LGVSD wastewater treatment plant.

Wastewater Treatment. The LGVSD Wastewater Treatment Plant (WWTP) was constructed in 1955 and expanded in 1958, 1972, and 1984. The WWTP has the capacity to treat 2.92 mgd. From November through April, the treated wastewater is released to Miller Creek, which leads to San Pablo Bay. From May through October, effluent is reused to irrigate pasture land, is stored in ponds to accelerate evaporation, and is either later discharged to Miller Creek or taken to Marin Water for

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22 Marin Water. 2022. *Water Supply Assessment for Northgate Town Square.* November.

23 City of San Rafael. 2021a. *San Rafael General Plan 2040.*

24 Las Gallinas Valley Sanitary District (LGVSD). n.d. *Our Service Area.* Website: http://www.lgvsd.org/about-us/our-service-area/ (accessed January 17, 2022).

25 Las Gallinas Valley Sanitary District (LGVSD). n.d. *About Us.* Website: https://www.lgvsd.org/about-us/ (accessed January 17, 2022).

further treatment and distribution for landscape irrigation. The LGVSD WWTP has a dry weather capacity of 8 mgd and a wet weather capacity of 18 mgd. The LGVSD WWTP treats an average flow of 2.36 mgd, and the peak wet weather flow is approximately 22 to 24 mgd. Additional flows beyond the treatment capacity are diverted around the secondary treatment units and blended with secondary-treated effluent, all of which is then dechlorinated prior to discharge.[26]

4.14.1.3 Storm Drainage System

The City of San Rafael (City) Department of Public Works (DPW) owns and maintains the storm drain system that is located throughout San Rafael. The storm drain system comprises 20 miles of corrugated metal pipes, 84 miles of concrete pipe, and 12 miles of plastic pipe. It has 3,800 drain inlets, 20 major headwalls, and 745 smaller headwalls. The DPW also maintains approximately 35 miles of open ditches and culverts and operates 12 stormwater pump stations. Stormwater pipelines in San Rafael range from 4 to 48 inches in diameter.[27]

The existing stormwater from the project site either infiltrates through the surface soils within the landscaped areas of the project site, or runs off the impervious surfaces into the adjacent streets where it collects in the San Rafael storm drainage system. The storm drainage system is a combination of private and public systems. The public systems lie within storm drain easements and intercept runoff from surrounding, off-site areas and from private connections within the project site.

The pipe systems are sloped similarly to the ground surface, and runoff ultimately flows downstream from west to east. However, after intercepting runoff from the highest areas of the project site, near the middle of the western boundary along Northgate Drive, the storm drain system is split. Runoff from a majority of the buildings and the northern half of the site flows north to Las Gallinas Avenue, then eastward to the public system in Merrydale Road. Runoff from the southern half of the site flows south to Northgate Drive, then north along Los Ranchitos Road until it is also intercepted by the public storm drain system in Merrydale Road. The storm drain pipe size is 48 inches and is approximately 13.5 feet deep where site runoff is intercepted in Merrydale Road, near the intersection of Las Gallinas Avenue and Los Ranchitos Road. After being intercepted by the storm drain pipe in Merrydale Road, runoff continues eastward, crossing US-101 and then enters storm drain channels on the east side of US-101. The storm drain channels on the east side of US-101 receive and convey storm water runoff to South Fork Gallinas Creek and then to San Pablo Bay.

4.14.1.4 Solid Waste

The Marin Hazardous and Solid Waste Management Joint Powers Authority (JPA), now known as Zero Waste Marin, consists of member agencies that collectively implement programs to comply with Assembly Bill (AB) 939 requirements and divert from landfills 50 percent of all the solid waste that is generated. Zero Waste Marin, which includes 11 cities and towns as well as unincorporated areas in Marin County, has the goal of 94 percent waste diversion from landfills by 2025. As the

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26 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR for the City of San Rafael.* January 7.

27 Ibid.

regional agency, Zero Waste Marin reports diversion progress to the California Department of Resources Recycling and Recovery (CalRecycle) on a countywide basis. Zero Waste Marin's disposal rate in 2018 was 5.2 pounds per day (lbs/day) of waste per resident and 11.8 lbs/day per employee, which is well below the CalRecycle targets of 7.6 lbs/day per resident and 17.3 lbs/day per employee.[28]

Marin Sanitary Service oversees garbage, recycling, and compost collection as well as street sweeping services within San Rafael and nearby unincorporated areas. Marin Sanitary Service currently services more than 33,000 residential and commercial accounts.[29]

Residential and commercial recyclable and waste materials are processed at the Marin Sanitary Service Transfer Station, Marin Resource Recovery Center, Marin Recycling Center, and Marin Household Hazardous Waste Facility. Approximately 3,000 tons of recyclables are processed each month at the Marin Recovery Center and Marin Recycling Center. The Marin Household Hazardous Waste Facility is located adjacent to the Marin Recycling Center and accepts paint, household cleaning products, automotive products, and other materials that would be hazardous if disposed in a landfill.[30,31]

Refuse that is not recyclable or hazardous is transported to the Marin Sanitary Service Transfer Station, which has a maximum daily permitted throughput of 2,640 tons.[32] Waste is then transferred to one of several landfills. Approximately 54 percent of landfill waste from San Rafael goes to the Redwood Landfill, located north of Novato. Redwood Landfill is a 420-acre site with 222.5 acres dedicated to waste disposal, which has a maximum daily throughput of 2,300 tons and a remaining capacity of 26,000,000 cubic yards.[33] About 41 percent is transported to the Potrero Hills Landfill near Suisun City, which has a maximum daily permitted throughput of 4,330 tons and a remaining capacity of 13,872,000 cubic yards.[34] The remaining 5 percent goes to landfills around the State. The Redwood Landfill is expected to close in 2024 and the Potrero Hills landfill (13.8 million tons remaining capacity) is expected to be operational through 2048.

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28 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR for the City of San Rafael*. January 7.

29 Marin Sanitary Service. n.d. *About Marin Sanitary Service*. Website: https://marinsanitaryservice.com/support/about-us/ (accessed January 17, 2022).

30 City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR for the City of San Rafael*. January 7.

31 Marin Sanitary Service. n.d. *About Marin Sanitary Service*. Website: https://marinsanitaryservice.com/support/about-us/ (accessed January 17, 2022)

32 California Department of Resources Recycling and Recovery (CalRecycle). n.d. *SWIS Facility/Site Activity Details: Marin Sanitary Service Transfer Station (21-AA-0005)*. Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3059?siteID=1731 (accessed January 17, 2022).

33 California Department of Resources Recycling and Recovery (CalRecycle). n.d. *SWIS Facility/Site Activity Details: Redwood Landfill (21-AA-0001)*. Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3054?siteID=1727 (accessed January 17, 2022).

34 California Department of Resources Recycling and Recovery (CalRecycle). n.d. *SWIS Facility/Site Activity Details: Potrero Hills Landfill (48-AA-0075)*. Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1194?siteID=3591 (accessed January 17, 2022).

Other landfills serving Zero Waste Marin include Keller Canyon Landfill (63 million tons remaining capacity), Monterey Peninsula Landfill (48 million tons remaining capacity), and Recology Hay Road Landfill (30 million tons remaining capacity). Although the Redwood Landfill is scheduled to close in 2024 and the Keller Canyon Landfill is scheduled to close in 2030, the other three landfills have a combined capacity of 91.8 million tons and will be open to accept waste from 2048 to 2107, and the latest 5-year review of the Marin County Integrated Waste Management Plan prepared in March 2018 indicates that Marin County has adequate disposal capacity (i.e., equal to or greater than 15 years). Furthermore, Zero Waste Marin has set a goal of 94 percent diversion from landfills by 2025, which would greatly reduce the need for landfill disposal.[35]

4.14.1.5 Energy and Telecommunications

The following describes energy and telecommunications services within the project area. All of the energy and telecommunications lines that serve the project site are currently underground. There are no aboveground lines that serve the project site.

Energy. Marin Clean Energy (MCE) provides electrical service to the project area using infrastructure owned and operated by the Pacific Gas and Electric Company (PG&E). Natural gas service is currently provided to the project site by PG&E. PG&E charges connection and user fees for all new development in addition to sliding rates for electrical and natural gas service based on use. Electrical services are currently available at the project site. Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, details requirements to achieve the minimum energy efficiency standards of the State of California. The standards regulate energy consumed by new residential and non-residential building construction for heating, cooling, ventilation, water heating, and lighting. The local building permit process verifies and enforces compliance with these standards.

Electric and natural gas service is provided to the project site through a combination of joint trenches that include both services or individual lines, all of which are located underground. The joint trench is generally located along the eastern boundary of the project site within Northgate Drive, with individual electrical and gas lines branching off from the joint trench and running through the project site to connect to transformers and smaller gas lines. The lines are separated within Las Gallinas Avenue and Los Ranchitos Road, including a 16-inch-diameter gas main along the western border of the project site.

Telecommunications. Multiple telecommunications providers, which include telephone, cable, and internet services, serve San Rafael. The City regulates service providers in accordance with federal law. Service providers are privately owned and operated, and recover the costs of operation, maintenance, and capital improvement through connection and user fees collected from all

[35] City of San Rafael. 2021. *San Rafael General Plan 2040 & Downtown Precise Plan Draft EIR for the City of San Rafael*. January 7.

customers. These services are currently available at the project site either through connections within existing joint trenches or overhead lines or individual overhead or underground lines.

The California Public Utilities Commission (CPUC) regulates California's telecommunications industry and requires that local telecommunications service providers anticipate and serve new growth. To meet this requirement, local providers continually upgrade their facilities, technology, and infrastructure to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in San Rafael.

4.14.1.6 Regulatory Framework

The following section describes the federal, State, and local regulatory framework related to water service and supply, solid waste management, and other utilities.

Federal Regulations. The following describes federal regulations concerning utilities, including the Safe Drinking Water Act, National Pollutant Discharge Elimination System (NPDES), and the Energy Policy Act.

Safe Drinking Water Act. The Safe Drinking Water Act (SDWA) of 1974 gave the United States Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The EPA was required to establish primary regulations for the control of contaminants that affected public health and secondary regulations for compounds that affect the taste, odor, and aesthetics of drinking water. Under the provisions of the SDWA, the California Department of Health Services (DHS) has the primary enforcement responsibility. Title 22 of the California Administrative Code establishes DHS authority, and stipulates State drinking water quality and monitoring standards.

National Pollutant Discharge Elimination System. Treated wastewater is closely regulated for health and environmental concerns and is included in the NPDES program. The City of San Rafael has been designated as a small Municipal Separate Storm Sewer System (MS4) and is responsible for implementing the requirements of the Phase II Program statewide general permit, State Water Board Order No. 2013-0001 DWQ, adopted February 5, 2013. The permit provides a uniform standard for wastewater and stormwater discharges for the counties and agencies designated as small MS4s. The City is mandated to comply with the NPDES Permit by State and federal laws, statutes, and regulations.

Energy Policy Act of 1992. The Federal Energy Regulatory Commission (FERC) regulates the transmission and sale of electricity in interstate commerce (including interstate gas pipelines that serve California), licensing of hydroelectric projects, and oversight of related environmental matters. As part of the license application process, environmental analysis pursuant to the National Environment Policy Act (NEPA) must be conducted. The FERC acts under the legal authority of the Federal Power Act of 1935, the Public Utility Regulatory Policies, and the Energy Act of 1992, in addition to several other federal acts. The Energy Act of 1992 addresses energy efficiency, energy conservation and energy management, natural gas imports and exports, and alternative fuels (including as used in motor vehicles). It amended parts of the Federal Power Act of 1935.

California State Regulations. The following describes State regulations concerning utilities, including Senate Bill (SB) 610 and SB 221, the Integrated Waste Management Act, the Solid Waste Reuse and Recycling Act, and the California Green Building Standards Code (CALGreen Code).

Senate Bills 610 and 221. SB 610, codified as Sections 10910–10915 of the California Public Resources Code (PRC), requires local water providers to conduct a Water Supply Assessment (WSA) for projects proposing over 500 housing units, 250,000 square feet of commercial office space (or more than 1,000 employees), a shopping center or business establishment with over 500,000 square feet (or more than 1,000 employees), or equivalent usage. Issuance of a WSA determination by the local water supplier for a proposed project verifies that the supplier has previously considered a proposed project in its Urban Water Management Plan (UWMP) and has adequate capacity to serve a project in addition to its existing service commitments, or alternatively, measures that would be required to adequately serve the proposed project. SB 221 establishes consultation and analysis requirements related to water supply planning for residential subdivisions including more than 500 dwelling units. Written verification by the water supplier that sufficient water is available for the project is required before construction begins.

Integrated Waste Management Act. In 1989, the California Legislature enacted the California Integrated Waste Management Act (AB 939), which requires the diversion of waste materials from landfills to preserve landfill capacity and natural resources. Cities and counties in California were required to divert 25 percent of solid waste by 1995, and 50 percent of solid waste by 2000. AB 939 further requires every city and county to prepare two documents demonstrating how the mandated rates of diversion will be achieved. The Source Reduction and Recycling Element must describe the chief source of the jurisdiction's waste, the existing diversion programs, and current rates of waste diversion and new or expanded diversion programs. The Household Hazardous Waste Element must describe each jurisdiction's responsibility in ensuring that household hazardous wastes are not mixed with non-hazardous solid wastes and subsequently deposited at a landfill.

Solid Waste Reuse and Recycling Access Act. The Solid Waste Reuse and Recycling Access Act requires areas in development projects to be set aside for collecting and loading recyclable materials. The Act required CalRecycle to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own to govern adequate areas in development projects for collection and loading of recyclable materials.

California Green Building Standards Code. The CALGreen Code became effective for all projects beginning after January 1, 2011. Section 4.408, Construction Waste Reduction Disposal and Recycling, of the CALGreen Code mandates that in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The CALGreen Code requires applicants to submit a Waste Management Plan (WMP) for on-site sorting of construction debris to the City of San Rafael. The plan must:

- Identify the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
- Specify if materials will be sorted on site or mixed for transportation to a diversion facility.
- Identify the diversion facility where the collected material will be taken.
- Identify construction methods employed to reduce the amount of waste generated.
- Specify that the amount of materials diverted shall be calculated by weight or volume, but not by both.

Local Regulations. The following describes local regulation concerning utilities, including the General Plan and the Construction and Demolition Recycling Regulations.

San Rafael General Plan 2040. The General Plan contains the following goals, policies, and actions concerning utilities.

Goal LU-1: Well-Managed Growth and Change. Grow and change in a way that serves community needs, protects the environment, improves fiscal stability, and enhances the quality of life.

Policy LU-1.2: Development Timing. For health, safety, and general welfare reasons, new development should only occur when adequate infrastructure is available, consistent with the following findings:

- The project is consistent adopted Vehicle Miles Traveled (VMT) standards, as well as the requirements for Level of Service (LOS) specified in the Mobility Element.
- Planned circulation improvements necessary to meet City standards for the project have funding commitments and completed environmental review.
- Water, sanitary sewer, storm sewer, and other infrastructure improvements needed to serve the proposed development have been evaluated and confirmed to be in place or to be available to serve the development by the time it is constructed.
- The project has incorporated design and construction measures to adequately mitigate exposure to hazards, including flooding, sea level rise, and wildfire.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

Policy C-3.8: Water Conservation. Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.

Program C-3.8A: Water Conservation Programs. Work with Marin Municipal Water District and other organizations to promote water conservation programs and incentives and ensure compliance with state and MMWD regulations, including the provisions of the Urban Water Management Plan.

Program C-3.8C: Reclaimed Water Use. Support the extension of recycled water distribution infrastructure by Las Gallinas Valley Sanitary and MMWD, along with programs to make the use of recycled water more feasible.

Program C-3.8D: Graywater and Rainwater. Encourage the installation of graywater and rainwater collection systems. Explore revisions to building codes that would facilitate such projects where obstacles currently exist.

Policy C-3.9: Water-Efficient Landscaping. Encourage-and where appropriate require-the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.

Goal C-4: Sustainable Energy Management. Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.

Policy C-4.1: Renewable Energy. Support increased use of renewable energy and remove obstacles to its use.

Program C-4.1C: Regulatory Barriers. Continue efforts to remove regulatory barriers and provide creative incentives for solar energy installations, such as rooftop solar systems and parking lot canopies. The installation of renewable energy systems that are consistent with the Climate Change Action Plan should be encouraged and accelerated.

Program C-4.1D: Reducing Natural Gas Use. Pending further financial analysis and community input, implement electrification of building systems and appliances in new buildings and those that currently use natural gas. This should be achieved by requiring new or replacement furnaces and appliances to be electric and utilize fossil free energy.

Policy C-4.2: Energy Conservation. Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.

Program C-4.2B: Green Building Standards. Implement State green building and energy efficiency standards for remodeling projects and new construction. Consider additional measures to incentivize green building practices, low carbon concrete, and sustainable design.

Program C-4.2C: Energy Efficiency Incentives. Provide financial incentives, technical assistance, streamlined permitting processes, and partnerships to encourage energy-efficiency upgrades in new and existing buildings. Typical improvements include the use of energy-efficient windows, lighting, and appliances, induction and convection cooking, insulation of roofs and exterior walls, higher-efficiency heating and air conditioning (including electrical heat pump systems), and other projects that lower electricity and natural gas consumption.

Program C-4.2E: Cool Roofs and Pavement. Encourage the use of materials that minimize heat gain on outdoor surfaces such as parking lots, roadways, roofs and sidewalks.

Policy C-4.5: Resource Efficiency in Site Development. Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.

Program C-4.5A: Solar Site Planning. Use the development review process to:

- Encourage opportunities for passive solar building design and the use of photo-voltaic materials and devices
- Review proposed site design for energy efficiency, such as shading of parking lots and summertime shading of south-facing windows

Policy C-4.5: Resource Efficiency in Site Development. Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe, and resilient infrastructure and utility services.

Policy CSI-4.2: Adequacy of City Infrastructure and Services. As part of the development review process, require applicants to demonstrate that their projects can be adequately served by the City's infrastructure. All new infrastructure shall be planned and designed to meet the engineering and safety standards of the City as well as various local service and utility providers.

Program CSI-4.2B: Engineering Standards. Require new development to comply with subdivision standards in the San Rafael Municipal Code, as well as relevant Marin County and utility district engineering standards. Where feasible, encourage development to reach beyond current standards and collaborate with the community to innovate and define new best practices.

Policy CSI-4.4: Sustainable Design. Plan, design, and operate infrastructure to minimize non-renewable energy and resource consumption, improve environmental quality, promote social equity, and reduce greenhouse gas emissions. An evaluation of costs and benefits must be a factor in all improvements. This includes the potential costs of inaction and potential for "avoided costs" particularly with respect to climate change.

Program CSI-4.4A: Public Space and Infrastructure. Seek opportunities to improve environmental quality in the design of streets, infrastructure, and public spaces.

Program CSI-4.4B: Reducing Impervious Surfaces. Pursue porous pavement, rain catchment areas, and similar elements that reduce runoff.

Policy CSI-4.8: Potable Water Supply and Delivery. Work with Marin Municipal Water District (MMWD) to meet projected water demand, encourage water conservation, and ensure the reliability and safety of the water supply and distribution system.

Policy CSI-4.9: Wastewater Facilities. Ensure that wastewater collection, treatment, and disposal infrastructure is regularly maintained and meets projected needs. Improvements should be programmed to meet state and federal standards, respond to sea level rise and seismic hazards, repair and replace aging or leaking pipes, and protect environmental quality.

Policy CSI-4.16: Telecommunication Improvements. Ensure that residents, schools, businesses, and organizations have access to reliable, modern, and cost-effective telecommunications. A variety of network options, including fiber optics and wireless, should be encouraged and expanded throughout the city.

Policy CSI-4.17: Reducing Landfilled Waste Disposal. Reduce landfilled waste disposal and related greenhouse gas emissions by reducing material consumption; requiring curbside collection and composting of organic materials; increasing recycling, re-use, and resource recovery; and encouraging the use of recyclable goods and materials.

Program CSI-4.17C: Construction and Demolition Waste. Continue to implement programs requiring recycling of construction and demolition debris. Encourage the reuse of recycled building materials in future projects.

Policy CSI-5.6: Public-Private Partnerships. Explore public-private partnerships as a way to develop community facilities or achieve other community benefits (for example, public parking, affordable housing, pedestrian paths, and childcare in new development projects.

Construction and Demolition Recycling Regulations. The CALGreen Code requires that a minimum of 65 percent of waste generated from most construction, remodeling, and demolition projects be diverted by deconstruction or reuse of materials. These materials may be hauled to a Zero Waste Marin-Certified Facility for recycling, or a site-specific Construction Waste Management Plan may be developed that details how construction and demolition debris will be source separated, reused, recycled, or otherwise diverted from a landfill.

4.14.2 Impacts and Mitigation Measures

The following describes the project's potential impacts on utilities and service systems, consisting of water, wastewater, stormwater, solid waste, and electrical systems. This section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. Where necessary, impacts of phasing are discussed under separate sections for Phase 1 and 2. Impacts would be the same under the development of Phases 1 and 2 where they are not differentiated.

4.14.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to utilities and service systems if it would:

Threshold 4.14.1: Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural

gas, or telecommunications facilities, the construction of which could cause significant environmental effects;

Threshold 4.14.2: Exceed the City of San Rafael's currently available water supplies and result in insufficient water supplies to serve the proposed project in addition to existing and planned future development within San Rafael during normal, dry, and multiple dry years over the next 20 years, including buildout of the project;

Threshold 4.14.3: Result in insufficient wastewater treatment capacity to serve the project and reasonably foreseeable development over the next 20 years, including buildout of the project;

Threshold 4.14.4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

Threshold 4.14.5: Conflict with federal, State, and local management and reduction statutes and regulations related to solid waste, including:

- The California Integrated Waste Management Act,
- SB 1374, Model Construction and Demolition Diversion Ordinance,
- AB 1826, Mandatory Commercial Organics Recycling,
- SB 1016, Per Capita Disposal and Goal Measurement,
- San Rafael General Plan Sustainability and Conservation Elements, and
- San Rafael Municipal Code, Chapters 9.19 and 12.235.

4.14.2.2 Project Impacts

The following section discussed potential impacts related to utilities and service systems associated with development of the proposed project.

Threshold 4.14.1: Utility Infrastructure. The following section describes potential impacts that could occur with the construction, relocation, or improvement of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities infrastructure that would be required to serve the proposed project.

Water. Water service on the project site is provided by 8-inch-diameter water mains within Northgate Drive, Los Ranchitos Road, and Las Gallinas Avenue. Additionally, 8-inch-diameter water lines also run through the project site to serve the existing buildings. The proposed project would include new 8-inch-diameter water mains on the project site that would connect to existing mains within the project site, Northgate Drive, and Las Gallinas Avenue. All water infrastructure improvements, including new connections, would be required to be constructed

in compliance with the applicable regulations in Title 11 of the Marin Water Code.[36] Title 11 includes requirements governing the application for water service, installation of new service connections, cross-connections, water main extensions, and fire taps.

The three Marin Water water treatment plants have a total capacity of 71 mgd, which equates to approximately 79,530 AFY. This substantially exceeds the anticipated water demand for the Marin Water service area as shown in Table 4.14.A. Therefore, no new water facilities or expansion of existing facilities would be required, and this impact would be **less than significant.**

Wastewater. Wastewater at the project site is currently divided between the Terra Linda trunk sewer to the north (discharging into the John Duckett Pump Station) and the Merrywood trunk sewer to the south (discharging to the San Rafael Meadows and Civic Center Pump Stations). The existing flow rate from the project site is approximately 0.03 mgd. The LGVSD sewer design standards typically require using 400 gallons per day per capita and the national average occupancy for multi-family apartments is 2.6 occupants per unit. Therefore, it is estimated that full buildout of the proposed project would generate 1.47 mgd of sewer flow, an increase of approximately 1.44 mgd compared to existing conditions.

Flows from a portion of the project site are discharged along Las Gallinas Avenue/Los Ranchitos Road to the San Rafael Meadows Pump Station followed by the Civic Center Pump Station. The San Rafael Meadows Pump Station has a capacity of 1.3 mgd and the Civic Center Pump Station has a capacity of 2.3 mgd. The remaining flows from the project site are discharged to the John Duckett Pump Station, which has a capacity of 10.7 mgd. Therefore, there appears to be sufficient capacity at the John Duckett Pump Station to accommodate the proposed project through 2040. However, based on the model result for the Terra Linda Trunk Sewer, there is not sufficient capacity in the sewer between the project site and the John Duckett Pump Station to accommodate flows from the project site. The estimated available capacity in the 12-inch-diameter sewer line downstream of the project site is 1.3 mgd, which is insufficient to accommodate the full flow from the project site of 1.47 mgd in 2040. This is a **potentially significant** impact.

Impact UTL-1 The proposed project would generate wastewater that would exceed the capacity of the existing sewer infrastructure that serves the project site. (S)

The existing 12-inch-diameter sewer line could accommodate approximately 384 units, approximately 27 percent of full buildout, with no modifications. However, this is not sufficient to accommodate implementation of Phase 1 of the proposed project, which includes development of up to 922 residential units. To address the capacity deficiency in this portion of the Terra Linda Trunk Sewer and allow for additional development, the 12-inch-diameter sewer line would need to be up-sized. Therefore, implementation of Mitigation Measure UTL-1 would be required.

[36] Marin Water. 2023. Marin, California Municipal Water District Code, Title 11, Water Service Rules and Regulations. May.

Mitigation Measure UTL-1 Prior to the issuance of a certificate of occupancy for any of the residential units on the project site, the existing 12-inch-diameter Terra Linda Trunk Sewer line downstream of the project site shall be upsized to 15 inches in diameter in coordination with the Las Gallinas Valley Sanitation District. (LTS)

Model results indicate that increasing the pipe size to a 15-inch diameter would reduce projected surcharging to within allowable limits. The new 15-inch-diameter line is anticipated to have a capacity of 2.55 mgd. The proposed project would account for approximately 58 percent of the capacity of the new sewer line. Therefore, with implementation of Mitigation Measure UTL-1, this impact would be **less than significant with mitigation.** Installation of this line would occur within existing developed rights-of-way and within existing utility trenches. The new line would replace an existing line within the same location; therefore, implementation of this improvement would not result in secondary effects or off-site impacts that are not addressed in this EIR.

Stormwater. As described in Section 4.7, Hydrology and Water Quality, the proposed project would replace more than 5,000 square feet of impervious surfaces and therefore would be required to implement post-construction stormwater management and treatment measures to reduce pollutant loads in runoff in accordance with Section E.12 of the Small MS4 Permit. The project must prepare a Stormwater Control Plan that describes how runoff would be routed to Low Impact Development (LID) stormwater treatment facilities that are sized and designed using either volumetric or flow-based criteria specified in the Small MS4 Permit, and the Stormwater Control Plan must be approved by the City.

As discussed in Section 4.7, Hydrology and Water Quality, Mitigation Measure HYD-3 would require hydraulic modeling to confirm that stormwater from the project site would not result in on-site flooding or contribute to off-site flooding. If the evaluation demonstrates that the 100-year storm event could result in on-site flooding above the minimum of 1 foot of freeboard from the finished floor elevations on the project site or that runoff from the project site could contribute to increased flooding in off-site areas (including roadways), the project shall incorporate additional stormwater retention systems (e.g., swales, retention ponds, or cisterns with metered outlets) and/or additional stormwater conveyance systems into the project design. Mitigation Measure HYD-3 would ensure that stormwater runoff would be addressed through on-site control measures and that runoff from the site would not result in adverse environmental effects related to flooding. The construction and operation of such additional facilities, if required, would not result in additional environmental effects beyond those described in this EIR; therefore, this impact would be **less than significant**.

Electricity, Gas, Telecommunications. Development of the proposed project would take place in a location that currently has electricity, gas, telephone, cable, and internet services, and these services would continue to be provided to the project site to serve the proposed development. As such, the proposed project would have a **less than significant impact** on electricity, gas, telecommunications, cable, and internet services.

Threshold 4.14.2: Water Supply. The proposed project would include construction of 1,422 residential units and 217,520 net new square feet of commercial space on the project site as described in Chapter 3.0, Project Description. The proposed project meets the definition of a "project" as defined by SB 610 and SB 221; therefore, a WSA was prepared by Marin Water as the water supplier to the project site.[37] (The WSA is included in Appendix K of this EIR.) The WSA was approved by the Marin Water Board of Supervisors on December 13, 2022. As previously noted, the proposed project would include 922 residential units in Phase 1 (2025), and an additional 500 units in Phase 2, as well as new commercial and landscaping space. The projected demand for potable and raw water associated with the proposed project is 167 AFY in 2025 through 2035 with the buildout of Phase 1, with an increase to 228 AFY in 2040 through 2045 with the buildout of Phase 2. The projected demand for recycled water associated with the proposed project is 34 AFY in 2025 through 2035 with the buildout of Phase 1, with an increase to 51 AFY in 2040 through 2045 with the buildout of Phase 2. The proposed project was not included in the 2020 UWMP because it was prepared prior to the 2040 General Plan. However, the WSA completed for the proposed project includes the water demand associated with the proposed project in its analysis of Marin Water's projected supply and demand and potential shortfalls as further discussed below.

Table 6 of the WSA shows Marin Water's projected demand, with the inclusion of the proposed project, and the total available normal year supply through 2045. As shown in Table 6 of the WSA, the planned future potable and raw water supply of 83,926 AFY within Marin Water's service area for normal hydrologic years is expected to meet all projected demands, inclusive of the proposed project, which are estimated to be 37,686 AFY by 2045. As shown in Table 7 of the WSA, during single dry years, the annual potable and raw water supply within the Marin Water service area under this scenario will be reduced to 51,223 AFY by 2045. Despite this reduction, Marin Water's potable and raw demand inclusive of the proposed project will be met by the single dry year supply. Table 8 of the WSA shows that during multiple dry years, Marin Water's 2020 UWMP estimates that an annual potable and raw supply within Marin Water's service area will be reduced to 78,635 AFY in 2025 during the first year of a drought, and down to 68,402 AFY in 2045 during the fifth year of a drought. Notwithstanding these supply reductions and considering the proposed project demands, no supply shortfalls are projected for Marin Water in the multiple dry year scenario.

It should be noted that the dry year and multiple dry year scenarios are based on historical water supply patterns, which may or may not be representative of future conditions due to climate change. To account for potential future conditions, an additional "worst case" scenario was evaluated in the UWMP and is considered. If the "worst-case" supply scenario is realized, in which total available supply (purchases from the Sonoma County Water Agency [SCWA], local surface water, and recycled water) is reduced to below 14,000 AFY by 2025, shortfalls of up to 65 percent are projected (see Table 4.14.A, above, and Table 9 of the WSA). As shown in the multiple dry year extreme drought scenario in Table 4.14.A above and Table 9 of the WSA, there are no supply shortfalls anticipated in 2025 for the first and second years of extreme drought. However, by the third year of extreme drought, a 7.5 percent shortfall is expected, by the fourth year of extreme drought a 36 percent shortfall is expected, and by the fifth year of extreme drought a 65 percent shortfall is expected. However, as shown in Table 9 of the WSA, these shortfalls are not materially

[37] Marin Water. 2022. *Water Supply Assessment for Northgate Town Square*. November.

different from the shortfalls that would be experienced without the project according to the adopted and District-approved UWMP, which were within half a percentage point of the shortfalls listed above.

To address these shortfalls in an extreme drought scenario, Marin Water plans to enact its WSCP, which includes Mandatory Staged Restrictions of Water Use. The WSCP systematically identifies ways in which Marin Water can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages and address water demand reductions over 50 percent. Marin Water is also currently preparing a Strategic Water Supply Assessment, which will identify ways in which its water supply portfolio can be augmented to serve all users in such an extreme drought scenario.

Marin Water's projected recycled water demand inclusive of the proposed project is approximately 801 AFY by 2045. Because there is excess capacity in the recycled water system, for the normal, single dry, and multiple dry year hydrologic conditions, the currently projected recycled water supply of 750 AFY will be able to increase by 51 AFY to meet Marin Water's demands; therefore, no recycled water supply shortfall is anticipated. As shown in Table 9 of the WSA, and similar to the other hydrologic year conditions mentioned above, the projected recycled water supply is currently estimated to be 750 AFY in the extreme drought scenario by 2045, and the projected Marin Water demand inclusive of the project is estimated to be 801 AFY. Because there is excess capacity in the recycled water system, the recycled water supply will be able to increase by 51 AFY; therefore, no recycled water supply shortfall is anticipated.

The proposed project would represent an increase in water demand within the anticipated supply range for San Rafael. However, this increase would be incremental and would not lead to insufficient water supplies in existing entitlements and resources or require new or expanded entitlements. No new water entitlements would be required to serve the proposed project. Therefore, the project would result in a **less than significant impact** on potable and recycled water supply.

Threshold 4.14.3: Wastewater Treatment Capacity. As described under Threshold 4.14.1, the wastewater pump stations that serve the project site would have adequate capacity to serve the project. In addition, with implementation of Mitigation Measure UTL-1, the wastewater pipes that serve the project site would also have adequate capacity. The LGVSD WWTP has a dry weather capacity of 8 mgd and a wet weather capacity of 18 mgd, and currently treats an average flow of 2.36 mgd. As described under Threshold 4.14.1, the proposed project would generate 1.47 mgd of wastewater, an increase of 1.44 mgd compared to existing conditions. Therefore, with implementation of the proposed project, the LGVSD would be estimated to have an average flow of 3.83 mgd, which is well below the dry weather capacity of 8 mgd. Therefore, this impact would be **less than significant with mitigation**.

Threshold 4.14.4: Solid Waste Generation. The project would be served by landfills with the capacity to handle solid waste generated by the operational phases of the proposed project. As required by AB 939, the California Integrated Waste Management Act, a minimum of 50 percent of the San Rafael's waste must be recycled. General Plan Program CSI-4.17A requires construction contractors to take their construction and demolition debris to a facility that processes construction

and demolition materials for recycling. Most of these facilities yield recycling rates in excess of 80 percent. The typical remaining refuse sent to the landfill is 10 to 15 percent of the debris. This would not substantially decrease the available capacity at the Redwood or Potrero Hills Landfills.

As discussed in Section 4.2, Population and Housing, the proposed project would result in 3,541 new residents and 621 employees (1,569 fewer employees on the site compared to existing conditions). Based on Zero Waste Marin's disposal rates, residential uses would generate approximately 18,413 lbs/day of solid waste, and commercial uses (employees) would generate 7,328 lbs/day, for a total of 25,740 lbs/day, or approximately 12.87 tons per day (tpd). The Redwood Landfill has a maximum permitted throughput of 2,300 tpd and Potrero Hills Landfill has a maximum permitted throughput of 4,330 tpd. The proposed project would represent approximately 0.6 and 0.3 percent of the total daily permitted throughput, respectively. The amount of solid waste generated by operation of the proposed project would not exceed the landfill capacity. In addition, Zero Waste Marin has a goal diversion rate from landfills of 94 percent by 2025, which would reduce the project's solid waste disposal volume. To be conservative, this analysis does not assume any increase in the current diversion rate of 66 percent. Therefore, the landfills that serve the project site would have adequate capacity, and this impact would be **less than significant.**

Threshold 4.14.5: Solid Waste Regulations. As discussed above, Zero Waste Marin, which serves the project site, complies with State requirements to reduce the volume of solid waste through recycling and organic waste diversion. Its per capita disposal rates of 5.2 lbs/day per resident and 11.8 lbs/day per employee are well below the CalRecycle targets of 7.6 lbs/day per resident and 17.3 lbs/day per employee. In addition, the proposed project would be required to comply with the CALGreen Code, which requires that at least 65 percent of non-hazardous construction and demolition waste from non-residential construction operations be recycled and/or salvaged for reuse (Section 4.408 of the 2022 CALGreen Code). Therefore, the proposed project would comply with the California Integrated Waste Management Act, SB 1016, and SB 1374 as a minimum of 65 percent of construction and demolition waste would be diverted from landfills and the project would comply with the San Rafael Municipal Code Chapter 12.235 as it would be required to comply with the CALGreen Code. The proposed project would also comply with AB 341 by providing recycling for both commercial and multi-family residential uses and AB 1826 by providing composting and recycling.

The San Rafael General Plan includes Policy CSI-4.17: Waste Reduction, requires the reduction of landfilled waste disposal and related greenhouse gas (GHG) emissions by reducing material consumption, requiring curbside collection and composting of organic materials, increasing recycling re-use and resource recovery, and encouraging the use of recyclable goods and materials. Chapter 9.19 of the San Rafael Municipal Code, Refuse and Recycled Materials Collections and Disposal, intends to prevent public health hazards and/or nuisance by regulating the accumulation, collection, and disposal of solid waste, including but not limited to garbage, rubbish, waste matter, yard waste, recyclable materials, and refuse. As discussed above, the proposed project would recycle at least 65 percent of non-hazardous construction and demolition waste and would provide recycling and composting for future commercial and multi-family residential uses. Therefore, the proposed project would comply with the applicable solid waste regulations, and this impact would be **less than significant.**

4.14.2.3 Cumulative Impacts

A significant impact would occur if demands of cumulative development assumed under buildout of the General Plan exceeds the supply or capacity of existing utility and service systems or results in the construction of new or expansion of existing public utility facilities. As previously discussed under Threshold 4.14.1, all water infrastructure improvements, including new connections required for cumulative development, would be required to be constructed in compliance with the applicable regulations in Title 11 of the Marin Water Code. Additionally, the three Marin Water water treatment plants (Bon Tempe, San Geronimo, and Ignacio) have a total capacity of 71 mgd, which equates to approximately 79,530 AFY. Additionally, as shown in Table 6 of the WSA, the planned future potable and raw water supply of 83,926 AFY within the Marin Water service area for normal hydrologic years is expected to meet all projected demands, inclusive of the proposed project, which are estimated to be 37,686 AFY by 2045. The WSA takes into account buildout of the 2040 General Plan, as well as the proposed project, and therefore indicates that cumulative development would not result in the need for new or upgraded water supply infrastructure. As with the proposed project, developments on all other projects in San Rafael would be required to pay fees to support the water and wastewater system improvements necessary to serve their individual demands. With payment of such fees and tax assessments, the project's contribution to public services impacts is not cumulatively considerable. Further, because the payment of such fees is required for the cumulative development projects, cumulative impacts would not be significant.

As described under Threshold 4.14.2 above, the WSA determined that Marin Water would have sufficient water supplies to serve the proposed project and projected development for normal years through 2040. Marin Water would experience shortfalls during a multi-year extreme drought. These shortfalls would not be materially different with implementation of the proposed project. In the event of a multi-year extreme drought, Marin Water would implement the WSCP, which would require reduction mandatory measures for all users, including the proposed project. Implementation of the proposed project would not prohibit implementation of the WSCP, nor would it, in combination with future cumulative development, require additional entitlements to be secured in the event of a multi-year extreme drought. Additionally, future cumulative projects would be required to undergo future environmental review through the CEQA process and account for sufficient water supplies to serve them. Therefore, cumulative impacts related to water supply would not be significant.

As discussed in Section 4.2, Population and Housing, it is estimated that the City's 2040 population would be 68,710 and employment would be 48,650. Zero Waste Marin's disposal rate in 2018 was 5.2 lbs/day of waste per resident and 11.8 lbs/day per employee. Therefore, cumulative development within San Rafael could generate up to 357,292 pounds (178 tons) of residential waste and 574,070 pounds (287 tons) of commercial waste, for a total of 931,362 lbs/day (465 tpd). Remaining permitted capacity at the receiving landfills totals 91.8 million tons. Cumulative solid waste generated citywide in 2040 represents approximately 3.13 percent of permitted capacity at

receiving landfills.[38] Therefore, the cumulative contribution of solid waste from San Rafael would not have a cumulatively significant effect on landfill capacity.

Based on the information in this section and for the reasons summarized above, development of the proposed project would not contribute to any significant adverse cumulative utility impacts when considered together with other cumulative development, and this impact would be **less than significant**.

[38] 465 tons per day x 365 days = 169,725 tons per year x 17 years = 2.88 million tons cumulative solid waste citywide through 2040. This calculation assumes existing generation rates. Future decreases in per capita waste generation would proportionally reduce 2040 solid waste totals.

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4.15 ENERGY

This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency. An Energy Analysis[1] was prepared for the proposed project. This report was utilized in the analysis provided in this section, and is provided as Appendix L in this Environmental Impact Report (EIR). Additionally, the Energy Analysis was peer reviewed.[2] The energy use analysis in this section is based on information from the California Emissions Estimator Model (CalEEMod) Version 2022.1, as included in Appendix A of the Energy Analysis.

4.15.1 Setting

The following discussion provides an overview of existing energy usage on site.

4.15.1.1 Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).

According to the most recent data available, in 2021, California's electricity was generated primarily by natural gas (37.9 percent), renewable sources (33.6percent), large hydroelectric (9.2 percent), nuclear (9.3 percent), coal (3.0 percent), and other unspecified sources. Total electric generation in California in 2021 was 277,764 gigawatt-hours (GWh), up 2 percent from the 2020 total generation of 272,576 GWh.[3]

The City of San Rafael receives its electricity from the Pacific Gas and Electric Company (PG&E). The project site is within the service territory of PG&E and MCE Community Choice Energy. According to the California Energy Commission (CEC), total electricity consumption in the PG&E service area in 2021 was 78,588 gigawatt-hours (GWh) or 78,587,869,096 kilowatt-hours (kWh).[4] Of this total, Marin County consumed 1,347 GWh or 1,347,566,471 kWh.[5]

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1 Dudek. 2023. *Northgate Town Square Project Energy Analysis.* August.

2 LSA Associates, Inc. 2023. *Peer Review of the Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report and Energy Analysis Memorandum.* March.

3 California Energy Commission (CEC). 2022a. 2021 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation (accessed August 2023).

4 California Energy Commission (CEC). 2022. Electricity Consumption by Entity. Website: http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed August 2023).

5 California Energy Commission (CEC). 2022. Electricity Consumption by County. Website: http://www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed August 2023).

4.15.1.2 Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend on out-of-state imports for nearly 90 percent of its natural gas supply.[6]

PG&E is the natural gas service provider for San Rafael. According to the CEC, total natural gas consumption in the PG&E service area in 2021 was 4,467 million therms (4,467,074,766 therms).[7] Total natural gas consumption in Marin County in 2021 was 67.9 million therms.[8]

4.15.1.3 Petroleum/Transportation Energy

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and sport utility vehicles [SUVs]) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020.[9] Federal and State fuel economy standards require the continued increase of fuel efficiency in passenger and commercial fleets. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline consumed by light-duty cars, pickup trucks, and SUVs. According to the most recent data available, total gasoline consumption in California was 319,514 thousand barrels or 1,613.5 trillion British thermal units (BTU) in 2021.[10] Of the total gasoline

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6 California Energy Commission (CEC). 2021c. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california (accessed August 2023).

7 California Energy Commission (CEC). 2022a. Gas Consumption by Entity. Website: http://www.ecdms.energy.ca.gov/gasbyutil.aspx (accessed August 2023).

8 California Energy Commission (CEC). 2022b. Gas Consumption by County. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed August 2023).

9 United States Department of Transportation (DOT). Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles. Website: https://www.bts.gov/content/average-fuel-efficiency-us-light-duty-vehicles (accessed August 2023).

10 A British thermal unit is defined as the amount of heat required to raise the temperature of 1 pound of water by 1°F.

consumption, 302,881 thousand barrels or 1,529.5 trillion BTU were consumed for transportation.[11] Based on fuel consumption obtained from EMFAC2021, approximately 11.17 million gallons of diesel and approximately 106.6 million gallons of gasoline will be consumed from vehicle trips in Marin County in 2023.

4.15.1.4 Regulatory Framework

Federal and State agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation (DOT), the United States Department of Energy (DOE), and the United States Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. On the State level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy.

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.

The CEC is the State's primary energy policy and planning agency. The CEC forecasts future energy needs, promotes energy efficiency, supports energy research, develops renewable energy resources, and plans for/directs the State response to energy emergencies. The applicable federal, State, regional, and local regulatory framework is discussed below.

4.15.1.5 Federal Regulations

National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) Standards. On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025 and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

4.15.1.6 State Regulations

Assembly Bill 1575, Warren-Alquist Act. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs, license power plants of 50 megawatts (MW) or larger, develop energy technologies and renewable energy

[11] United States Energy Information Administration (EIA). 2021. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2021. Website: eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed August 2023).

resources, plan for and direct State responses to energy emergencies, and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require EIRs to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and efficient use of energy and the means of achieving this goal, including (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting. In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an Integrated Energy Policy Report every 2 years and an update every other year. The most recently adopted report includes the *2023 Integrated Energy Policy Report.*[12] The *Integrated Energy Policy Report* covers a broad range of topics, including decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast. The *Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs.

Renewable Portfolio Standard. SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the

[12] California Energy Commission (CEC). 2023. *2023 Integrated Energy Policy Report*. California Energy Commission. Docket Number: 23-IEPR-01.

requirement to 60 percent by 2030 and required that all the State's electricity come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019.[13]

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Non-Residential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code took effect on January 1, 2011. The CALGreen Code is updated on a regular basis, with the most recent update consisting of the 2022 CALGreen Code standards that became effective January 1, 2023. The CALGreen Code established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. As further discussed in the Regional Regulations section below, the City has also adopted reach codes which go beyond the State code requirements for certain building requirements.

California Energy Efficiency Strategic Plan. On September 18, 2008, the CPUC adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California. The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The plan also reiterates the following four specific programmatic goals known as the "Big Bold Energy Efficiency Strategies" that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.[14]
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofitted to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

Plan Bay Area 2050. Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan (RTP). In the San Francisco Bay Area (Bay Area), the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). Plan Bay Area 2050 connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific

[13] California Public Utilities Commission (CPUC). 2019. Renewables Portfolio Standard (RPS) Program. Website: https://www.cpuc.ca.gov/rps (accessed August 2023).

[14] Achievement of this goal was determined not yet to be feasible in time for the 2019 Building Energy Efficiency Standards (effective 2020), but State regulators continue to take steps toward this goal.

actions for the MTC, ABAG, and partner organizations to take over the next 5 years to make headway on each of the 35 strategies.

4.15.1.7 Local Regulations

City of San Rafael General Plan 2040. Policies pertaining to energy are addressed in multiple chapters of the General Plan.[15] The Conservation and Climate Change Element, Land Use Element, and Mobility Element include policies regarding energy that focus on non-renewable resources, electricity, gas and petroleum products, and emphasize the various regulations and technologies that apply to energy conservation. The following policies are applicable to the proposed project:

> **Policy LU-1.3: Land Use and Climate Change.** Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the GHG emissions associated with motor vehicle trips and support the City's climate action goals.
>
> **Policy C-3.4: Green Streets.** Design streets and infrastructure so they are more compatible with the natural environment, mitigate urban heat island effects, and have fewer negative impacts on air and water quality, flooding, climate, and natural habitat.
>
> **Policy C-3.8: Water Conservation.** Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.
>
> **Policy C-3.9: Water-Efficient Landscaping.** Encourage—and where appropriate require—the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.
>
> **Policy C-4.1: Renewable Energy.** Support increased use of renewable energy and remove obstacles to its use.
>
> **Policy C-4.2: Energy Conservation.** Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.
>
> **Policy C-4.3: Managing Energy Demand.** Reduce peak demands on the electric power grid through development of local sources, use of battery storage, deployment of "smart" energy and grid systems that use technology to manage energy more efficiently, and public education.
>
> **Policy C-4.4: Sustainable Building Materials.** Encourage the use of building materials that reduce environmental impacts and the consumption of nonrenewable resources.

City of San Rafael Climate Change Action Plan. In 2006, the City of San Rafael (City) was one of the early signatories to the United States Conference of Mayors Climate Protection Agreement, committing the City to working towards meeting the goals of the Kyoto Protocol. The City Council

[15] City of San Rafael. 2021. *General Plan 2040.* August. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

adopted San Rafael's first San Rafael Climate Change Action Plan (CCAP) on April 20, 2009, which was developed by a 14-member Green Ribbon Committee along with volunteer subject matter experts. It set goals of a 25 percent reduction of GHGs by 2020, and an ambitious 80 percent reduction by 2050 to meet targets set by the State of California.

As of 2019, the City met the State target of 15 percent reduction of GHGs as well as a local 25 percent stretch goal. In the meantime, the State issued new interim targets for 2030 (i.e., 40 percent reduction of GHGs below 1990 levels). In 2017, the City convened a 20-member Climate Action Working Group to revise the CCAP toward these new 2030 targets. The result is the Climate Change Action Plan 2030 (CCAP 2030),[16] which was approved by the City Council on May 20, 2019. CCAP 2030 includes a variety of regulatory, incentive-based, and voluntary strategies that are expected to reduce emissions from both existing and new development in San Rafael.

City of San Rafael Municipal Code. In December 2022, the San Rafael City Council approved a reach code ordinance, codified as Chapter 12.245.020, Amendments, of the City's Municipal Code. The amendments prohibit new fuel gas and oil piping in new construction unless for use in emergency electrical generation when required by the code, commercial kitchens for preparing food, commercial laundries for laundry, or in an approved industrial process. Furthermore, at the discretion of the building official, the building official may approve fuel gas in new construction or expand fuel gas in existing construction when replacing with electric has been demonstrated to be technically infeasible or has a disproportionate cost to the project, thereby causing an insurmountable hardship.

Furthermore, the updated code requires the installation of electric vehicle infrastructure greater than the State code requirements. For single-family homes and duplexes, the City's code requires new construction to have the capacity, wiring, and equipment so that it would be easy for a homeowner to install the charger of their choice. For multifamily dwellings, it requires 100 percent of parking spaces attributed to tenants to be equipped with low-power Level 2 charger infrastructure with receptacles for charging at lower speeds, providing the flexibility to more easily add the charging equipment in the future. A total of 15 percent of those spaces are required to have a Level 2 charger installed. For non-residential new construction, the City's code matches the State's Tier 1 requirements, which require 35 percent of parking spaces to be EV Ready with low-Level 2 infrastructure, 10 percent EV Capable (meaning only the conduit installed), and 10 percent installed fully with Level 2 chargers.

4.15.2 Impacts and Mitigation Measures

This section analyzes the potential of the proposed project to result in impacts related to energy. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

[16] City of San Rafael. 2019. *Climate Change Action Plan 2030.* May. Website: https://www.cityofsanrafael.org/climate-change-action-plan/ (accessed August 2023).

4.15.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to energy if it would:

Threshold 4.15.1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

Threshold 4.15.2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

4.15.2.2 Project Impacts

This section analyzes potential project-specific impacts related to energy use.

Threshold 4.15.1: Energy Use. The proposed project includes a development plan that includes a mix of commercial and residential land uses. Implementation of the proposed project would increase the demand for energy through day-to-day operations and fuel consumption associated with project construction. However, the existing uses at the proposed project site also currently demand energy. The one-time construction energy demand and the operational net change in energy demand are evaluated below.

Construction. Project construction would require energy resources primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators.

Electricity. The electricity demand at any given time would vary throughout the proposed project construction period based on the construction activities being performed and would cease upon completion of construction. When not in use, electric equipment would be powered off to avoid unnecessary energy consumption. The electricity used for construction activities would be temporary and minimal, would be within the supply and infrastructure service capabilities of PG&E and MCE, and it would not require additional local or regional capacity. Therefore, because energy use during construction would be temporary and would not be wasteful or inefficient, impacts would be **less than significant**.

Natural Gas. Natural gas is not anticipated to be required during proposed project construction because construction of new buildings and facilities typically does not consume natural gas. Peak energy demand specifically applies to electricity. Because natural gas and petroleum are liquid, these energy resources do not have the same constraints as electricity supply. Nonetheless, if any natural gas is needed, it would be sufficiently served by the existing supply from PG&E and would not require additional local or regional capacity. Any minor amounts of natural gas that may be consumed as a result of construction would be

temporary and negligible and would not have an adverse effect; therefore, this impact would be **less than significant**.[17]

Petroleum. Off-road equipment used during construction of the proposed project would primarily rely on diesel fuel, as would vendor trucks involved in delivery of materials to the individual parcels, haul trucks exporting demolition material, and haul trucks importing or exporting soil, tree debris, and other materials to and from the proposed project site. In addition, construction workers would travel to and from the proposed project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel in gasoline-powered light-duty vehicles.

The estimated diesel fuel usage from construction equipment, haul trucks, and vendor trucks and the estimated gasoline fuel usage from worker vehicles are shown in Table 4.15.A. Attachment A in Appendix L lists the assumed equipment usage and vehicle trips.

Table 4.15.A: Total Proposed Project Construction Petroleum Demand

Energy Type	Total Energy Consumption (gallons)
Diesel Fuel	364,313
Gasoline	139,482

Source: *Northgate Town Square Project Energy Analysis* (Dudek 2023).

Construction associated with the development under Phase 1 is estimated to consume a total of approximately 90,961 gallons of gasoline and 231,885 gallons of diesel. Under Phase 2, construction is estimated to consume a total of approximately 48,521 gallons of gasoline and 132,428 gallons of diesel. In total, proposed project construction fuel consumption would total approximately 139,482 gallons of gasoline and 364,313 gallons of diesel.

Notably, the proposed project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation, as recently amended effective October 1, 2023: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets; (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits); (5) requires phase-out of the oldest and dirtiest engines starting January 1, 2024; (6) requires procurement and use of renewable diesel (R99 or R100) starting January 1, 2024, with limited exceptions; and (7) requires contracting entities to obtain valid

[17] While no natural gas is anticipated to be used during construction because construction equipment is typically diesel fueled, the possibility of natural gas use is acknowledged in the event a natural gas-fueled piece of equipment is used. However, as noted previously, all equipment was assumed to be diesel fueled in CalEEMod.

Certificates of Reported Compliance for all listed contractors and subcontractors for contract work where vehicles subject to the Off-Road Regulation will operate. The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements.

Overall, the proposed project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy efficient than at comparable construction sites in the region or State. Therefore, because energy use during construction would be temporary and would not be wasteful or inefficient, impacts would be **less than significant**.

Operation. Energy use consumed by the project as proposed during operation would be associated with commercial natural gas use, commercial and residential electricity consumption, and fuel used for commercial and residential vehicle trips associated with the project. Mitigation Measure GHG-1, as further discussed in Section 4.11, Greenhouse Gas Emissions, would prohibit the use of natural gas fire pits as part of the proposed project, but natural gas would still be utilized as a part of the operation of proposed commercial kitchens. Energy consumption was estimated in the Energy Analysis for the project using default energy intensities by land use type in CalEEMod (for calculations, see Attachment A of Appendix L).

Electricity. Project operation would require electricity for multiple purposes including, but not limited to, building heating, ventilation, and air conditioning (HVAC), lighting, appliances, and electronics. Additionally, the supply, conveyance, treatment, distribution and disposal of water and wastewater would indirectly result in electricity usage. CalEEMod was used to estimate the project's electricity uses (see Attachment A of Appendix L for calculations). Default electricity solar generation rates in CalEEMod were used based on the proposed land use and climate zone. Notably, the proposed project's residential development would be all electric to support the City's goals, including the City's CCAP, and natural gas usage would be prohibited in the residential development, as well as in the commercial developments with the exception of being allowed for use in commercial kitchens. The proposed project would meet the EV charging requirements of CalGreen Tier 2 standards. Additionally, renewable power generation would be incorporated into the project site via solar panels that would be located on top of residential buildings and the existing parking structure, and would provide power to the common areas of the proposed project.

CCR Title 24 serves to enhance and regulate California's building standards. The project would meet the 2022 California Building Energy Efficiency Standards (24 CCR, Part 6) at a minimum. The project's operational energy emissions assumed the default assumptions in CalEEMod Version 2022.1.1.16, which is based on the 2019 consumption estimates from the CEC's 2018-2030 Uncalibrated Commercial Sector Forecast (Commercial Forecast), and the energy use from residential land uses is based on the 2019 Residential Appliance Saturation Survey (RASS). According to these estimates, the buildout of Phase 1 would consume approximately 11,946,526 kWh per year (kWh/yr) during operation, and buildout of Phase 2 would consume an additional 110,781 kWh/yr for a project total of approximately 12,057,307 kWh/yr. Under

existing baseline conditions, approximately 9,213,642 kWh are consumed per year. As such, upon project implementation, electricity demand at the project site would increase by 2,732,884 kWh/yr with buildout of Phase 1 and 2,843,665 kWh/yr after buildout of Phase 2. However, as noted in the Energy Analysis, the energy use estimates are based on existing buildings and residences and are not representative of those constructed in compliance with energy efficiency requirements of the latest Title 24 Building Energy Efficiency Standards. Per Appendix D, Technical Source Documentation for Emissions Calculations, of the CalEEMod Version 2022.1 User Guide, "the default energy consumption estimates provided in CalEEMod based on the Commercial Forecast and RASS are very conservative, overestimating expected energy use compared to what would be expected for new buildings subject to the latest Energy Code with more stringent energy efficiency measures."

Furthermore, the energy demand calculations included in the Energy Analysis do not take into account all of the proposed energy-saving project design features that would result in exceedances of the code requirements, including the implementation of the City's reach codes and sustainability measures such as implementing energy-efficient lighting. As such, the operational electricity use of the proposed project would likely be more efficient than what is estimated through this analysis, and would potentially be lower than the calculations presented above. The proposed project would comply with the 2022 CALGreen Code mandatory standards, and the reach codes adopted by the City which go beyond the State code requirements. Proposed new development would be constructed using energy-efficient modern building materials and construction practices, and the proposed project also would use new modern appliances and equipment in accordance with the Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608). As detailed in Section 4.11, Greenhouse Gas Emissions, the City's CCAP 2030 includes a checklist of requirements for building sustainability measures, including energy efficiency measures, which the proposed project would comply with.

PG&E and MCE Community Choice Energy are the private utilities that would supply the proposed project's electricity services. In 2021, a total of 50 percent of PG&E's delivered electricity came from renewable sources, including solar, wind, geothermal, small hydroelectric, and various forms of bioenergy. PG&E reached California's 2020 renewable energy goal in 2017 and is positioned to meet the State's 60 percent by 2030 renewable energy mandate set forth in SB 100. In addition, PG&E plans to continue to provide reliable service to its customers and upgrade its distribution systems as necessary to meet future demand. MCE Community Choice Energy provides renewable energy at competitive prices, and would be an option for future tenants to enroll in at the proposed project site.

In summary, although electricity consumption would increase at the proposed project site due to project buildout, the proposed project would support the City's goals, including all electric development . Building sustainability features, in compliance with CCR Title 24 and the City's CCAP 2030 requirements, would ensure that the proposed project buildings are energy efficient. Electricity supplied by PG&E and MCE Community Choice Energy would provide electricity from renewable energy sources in compliance with State goals mandated in SB 100. Expected energy consumption during proposed project operations would be consistent with, or less than, typical usage rates for residential and commercial uses.

Additionally, through the implementation of the proposed project, there would be a net decrease in commercial land use square footage, thus leading to a reduction of energy usage. For these reasons, electricity consumption of the proposed project would not be considered inefficient, wasteful, or unnecessary, and impacts would be **less than significant**.

Natural Gas. As previously discussed, City regulations would prohibit the installation of natural gas infrastructure in all residential buildings included as part of the proposed project, and all the residential buildings would be all-electric. An electric fuel source would be provided for space heating, water heating, cooking, and clothes drying.

As proposed, the commercial uses would include natural gas use for cooking as a part of restaurant operations. Under existing baseline conditions, it is estimated that approximately 9,063,757 thousand British thermal units (kBTU) are consumed on site per year. As proposed, buildout of Phase 1 would result in consumption of approximately 3,976,405 kBTU of natural gas per year, while buildout of Phase 2 would result in consumption of approximately 5,964,608 kBTU per year (Appendix I, Attachment A). As such, upon project implementation, natural gas demand at the proposed project site would decrease by 5,087,351 kBTU per year with buildout of Phase 1 and would decrease by 3,099,149 kBTU per year with buildout of Phase 2. Because there would be a decrease in natural gas consumption compared to existing conditions, the natural gas consumption of the project, as proposed, would not be considered inefficient or wasteful, and impacts would be **less than significant**

In addition, implementation of Mitigation Measure GHG-1 would require that the proposed project prohibit the inclusion of natural gas fire pits as part of the project design. This would further reduce projected natural gas consumption for the project.

Petroleum. During operations, the majority of fuel consumption resulting from the proposed project would involve the use of motor vehicles traveling to and from the proposed project site, as well as fuels used for alternative modes of transportation that may be used by residents, employees, visitors, and guests of the proposed project.

Petroleum fuel consumption associated with motor vehicles traveling to and from the proposed project site is a function of the operational VMT. Based on the calculations included in the Energy Analysis, the annual VMT attributable to buildout of Phase 1 is expected to be 51,428,573, and the operations of the proposed project in Phase 1 would result in the consumption of an estimated 1,890,974 gallons of gasoline per year and 83,284 gallons of diesel per year from vehicles traveling to and from the proposed project site, or 1,974,258 gallons of petroleum per year. Phase 2 buildout is expected to result in total project VMT of 35,761,945 per year, resulting in an estimated 1,312,788 gallons of gasoline per year and 56,183 gallons of diesel per year from vehicles traveling to and from the proposed project site, or 1,368,971 gallons of petroleum per year.

Under existing baseline conditions at the proposed project site, the existing shopping center is estimated to result in 57,944,797 VMT per year. An estimated 2,225,708 gallons of gasoline and 89,797 gallons of diesel are consumed per year under existing conditions from vehicles

traveling to and from the proposed project site, or 2,315,505 gallons of petroleum per year. As such, total buildout of the proposed project, as expected to occur by year 2040, would lead to a decrease in petroleum consumption of 912,920 gallons of gasoline per year and 33,614 gallons of diesel per year, or 946,534 gallons of total petroleum per year, due to the decreased number of vehicles traveling to and from the proposed project site.

Over the lifetime of the proposed project, the fuel efficiency of the vehicles being used by the residents, visitors, employees, and guests of the proposed project is expected to increase, plus an increased use of all-electric vehicles. As such, the amount of gasoline consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As discussed above, there are numerous regulations in place that require and encourage increased fuel efficiency. For example, the CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and ZEVs in California. Additionally, in response to SB 375, the CARB has adopted the goal of reducing per capita GHG emissions from 2005 levels by 10 percent by the year 2020 and 19 percent by the year 2035 for light-duty passenger vehicles in the MTC and ABAG planning area. This reduction would occur by reducing VMT through the integration of land use planning and transportation. As such, operation of the proposed project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

An important reason that the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy is that it would bring multifamily housing to a site that is both a Priority Development Area under Plan Bay Area 2050 and—except for its northwesternmost corner—a Transit Priority Area. The proposed project site is a designated Priority Development Area and Transit Priority Area because it is well served by passenger rail and bus services. Therefore, it is expected that residents, visitors, guests, and employees may use transit or non-vehicular modes of transportation to travel to and from the proposed project site. The Marin Transit system serves the project location and operates several routes with transit stops adjacent to the proposed project site, which provides local and regional public transit within the proposed project area, including one bus stop that directly serves the proposed project site. The proposed project area is also served by the Sonoma–Marin Area Rail Transit (SMART) rail system, with a train station located at 3801 Civic Center Drive, which is within 0.5 mile of the proposed project site to the east. Furthermore, use of transit and non-vehicular modes of transportation is anticipated to increase over time as local and regional plans and policies facilitating increased use and development of transit and non-vehicular transportation modes are implemented. Section 4.11, Greenhouse Gas Emissions, summarizes some of these plans and policies, including Plan Bay Area 2050, which was adopted by MTC and ABAG in October 2021.

Additionally, project-specific sustainable design features would include EV charging electric infrastructure consistent with State and local requirements as identified at the time of plan check submittal. Such features include on-site bicycle storage and preferential parking for low-emission/fuel-efficient vehicles and carpools/vanpools for residents, visitors, guests, and employees. The proposed project design would also allow for pedestrian circulation in

the proposed project site by employing design features that improve the landscape and streetscape, making the area more pedestrian friendly. Increased EV use would reduce petroleum use and increase electricity use; however, unlike petroleum, electricity is a cleaner and potentially renewable energy source.

In summary, implementation of the proposed project would result in a decrease in petroleum use during operation compared to existing baseline conditions. Additionally, the proposed project would include a variety of features that are expected to reduce the number of vehicles traveling to and from the site during operation. When viewed on a regional scale, the proposed project is an urban infill project located within a large population center that serves an existing demand for a mix of commercial and residential land uses. When compared with new development projects sited on previously undeveloped land and away from population centers, infill projects are generally expected to involve fewer VMT during operation. Given these considerations, the petroleum consumption associated with the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Renewable Energy Potential. As included in the Energy Analysis and as part of the proposed project's design process, the project applicant considered how the proposed project could increase its reliance on renewable energy sources to meet its energy demand. Renewable energy sources that were considered for their potential to be used to power the proposed project and that would be consistent with the CEC's definition of eligible renewables include biomass, geothermal, solar, wind, and small hydroelectric facilities.

As a result of this analysis, the proposed project includes solar power, which would be provided by solar panels installed on top of all residential buildings and the existing parking structures, while the retail buildings would be solar ready. Battery storage would be provided in the apartment-style residential buildings. As solar power technology improves in the future and regulations require additional solar, it is reasonable to assume that additional solar power may be provided to the proposed project site. In addition, the proposed project does not preclude installation of additional battery storage in the future.

Summary. As explained above, the proposed project would use renewable energy on site as determined to be feasible and would not result in wasteful, inefficient, or unnecessary consumption of energy resources (including electricity, natural gas, or petroleum) during construction or operation. Impacts would be less than significant.

Threshold 4.15.2: Conflict with a State or Local Plan. The proposed project would be subject to and would comply with, at a minimum, the 2022 California Building Energy Efficiency Standards (i.e., CCR Title 24, Part 6). Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 11 of Title 24 sets forth voluntary and mandatory energy measures that are applicable to the project under the CALGreen Code, and the City has adopted reach codes that go beyond the State's mandatory measures. As discussed above, the proposed project would result in an increased demand for electricity during operation and a temporary demand for petroleum during construction; however, compared to existing conditions, the proposed project would result in

decreased demand for natural gas and petroleum during operation under both the Phase 1 and full project buildout under Phase 2. In addition, the proposed project would support the City's goals, including the City's CCAP 2030, because the residential development would be 100 percent electric, and the commercial developments would also preclude the use of natural gas, except in commercial kitchens. The proposed project would also be consistent with the strategies of the City's CCAP 2030 by including solar power that is generated on site, EV charging stations, bicycle amenities, site connectivity, and a connection to the SMART Marin Civic Center station. Additionally, the proposed project would meet or exceed CALGreen Code Tier 2 Voluntary Standards for EV charging. As such, the proposed project would meet and exceed the applicable requirements for energy efficiency.

Furthermore, the City joined MCE, a Community Choice Aggregate that residents can opt into in order to ensure that electricity usage would come from renewable resources (e.g., water, wind, and solar). Customers have three electricity options to choose from: MCE Light Green, which is 61 percent renewable energy; MCE Deep Green, which is 100 percent renewable energy (50 percent from wind and 50 percent from solar); and MCE Local Sol, which is 100 percent renewable energy (100 percent from solar). Understanding the diverse needs of the community, projects can change the service by selecting one of MCE's options. Under each option, the proposed project would include renewable energy as part of the power content mix and would be consistent with the City's renewable energy commitment.

Because the proposed project would comply with and exceed the existing energy standards and regulations, the proposed project would result in a **less than significant** impact associated with the potential to conflict with energy standards and regulations.

4.15.2.3 Cumulative Impacts

The proposed project would have a significant effect on the environment if it, in combination with other projects, would contribute to a significant cumulative impact related to energy.

Development of cumulative projects within the PG&E service area, which encompasses 70,000 square miles, would result in a substantial increase in electricity and natural gas demand as well as an increase in the consumption of fuel for vehicles. Although the proposed project would result in a net increase in demand for electricity, implementation of the proposed project would not result in the construction of new electric or natural gas infrastructure beyond what has already been assumed and will be included in PG&E's regional forecasts.

Cumulative projects that could exacerbate the proposed project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. However, cumulative projects would be required by the City's Department of Building Inspection to conform to current federal, State, and local energy conservation standards, including the California Energy Code Building Energy Efficiency Standards (CCR Title 24, Part 6), the CALGreen Code (CCR Title 24, Part 11), and SB 743. As a result, the proposed project, in combination with other reasonably foreseeable projects, would not cause a wasteful use of energy or other non-renewable natural resources. In addition, the proposed project would not conflict with State or local plans for renewable energy or energy efficiency. Therefore, the energy demand and use associated with the proposed project and cumulative projects would not substantially contribute to a cumulative impact on existing or

proposed energy supplies or resources, and cumulative impacts on energy resources would be **less than significant**.

5.0 ALTERNATIVES

In accordance with the California Environmental Quality Act (CEQA) and Section 15126.6 of the *State CEQA Guidelines*, an Environmental Impact Report (EIR) must describe a reasonable range of alternatives to the project, or to the location of the project, that could attain most of the project's basic objectives, while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. An EIR does not need to consider every conceivable alternative to a project, rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

As an EIR identifies ways to mitigate or avoid significant effects that a project may have on the environment, the discussion of alternatives should focus on alternatives to the project or its location that are capable of avoiding or substantially lessening significant effects of the project. The EIR needs to include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project, the significant effects of the alternative should be discussed, but in less detail than the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative" or which are infeasible.

As described in more detail in Chapter 3.0, Project Description, the proposed project would involve redevelopment of the existing mall through demolition, renovation, and new construction with a mix of commercial and residential land uses. The proposed project would be developed in two phases. Phase 1 (also referred to as the 2025 Master Plan) would generally include the demolition of the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building, and construction of approximately 44,380 square feet of new commercial space and up to 922 residential units. Phase 2 (also referred to as the 2040 Vision Plan) would generally include the demolition of the 254,015-square-foot Macy's building and 79,051-square-foot Kohl's building, and the construction of up to 55,440 square feet of new commercial space and up to 500 additional residential units.

At full buildout, the project would include a total of up to approximately 217,520 square feet of commercial space and up to 1,422 residential units in six areas of the project site (1,746,936 square feet of residential area), 147 of which would be affordable units. A total of 648,807 square feet of existing building space would be demolished, and the total commercial area would be reduced by a total of 548,987 square feet. Building heights across the project site would vary, with a maximum of approximately 78 feet. The first phase of the proposed project would include the construction of a Town Square near the center of the project site. Additional common open space and landscaped areas would be provided in both the first and second phases. New internal roadways would be built within the project site that would provide access to each of the new buildings and surface parking lots.

Discretionary actions by the City of San Rafael (City) that would be necessary for development of the proposed project include environmental review, rezoning, an Environmental and Design Review Permit, a Development Agreement, a tentative subdivision map, and a Master Sign Program. The project sponsor is also requesting to use the density bonus to modify the development standards for height on the project site.

As provided by the project sponsor, the objectives of the proposed project are to:

- Implement the San Rafael General Plan 2040 vision for mixed use, transit-oriented development, and high-density housing on the project site;
- Implement the City's and regional agencies' designation of the project site as a Priority Development Area (i.e., a place with convenient public transit service that is prioritized by local government for housing, jobs, and services);
- Redevelop the existing mall facility into a town center with a relevant mix of commercial and retail offerings to support the local economy and provide tax revenues and employment opportunities;
- Create new housing offerings to meet the needs of families of varying sizes and reduce the recognized regional and local deficit of housing;
- Create a town center/urban village through a combination of retail, dining, and residential uses within a pedestrian-oriented urban core; and
- Provide new outdoor amenities and open spaces, main street improvements, and recreational opportunities interconnected by pedestrian links throughout the project.

The potential environmental effects of implementing the proposed project are analyzed in Chapter 4.0, Setting, Impacts, and Mitigation Measures. Table 5.A, located at the end of this chapter, summarizes the impacts of the proposed project. The proposed project has been described and analyzed in the previous chapter of this EIR, with an emphasis on evaluating significant impacts resulting from the project and identifying mitigation measures to avoid or reduce these impacts to a less than significant level.

The three alternatives to the proposed project that are discussed and evaluated in this chapter are the following:

- **No Project Alternative:** Under the No Project Alternative, the project site would continue to be occupied by the existing Northgate Mall. The existing mall includes the main mall building, which is a total of approximately 633,783 square feet in size, and consists of five sections: (1) Mall Shops East, (2) Mall Shops West, (3) Century Theatre, (4) RH Outlet, and (5) Macy's. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure containing approximately 476 parking spaces, and a vacant retail building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building. A total of approximately 2,190 people could be employed on

the project site at full occupancy, though this would continue to fluctuate based on market conditions.

- **Reduced Development Alternative:** Under the Reduced Development Alternative, only Phase 1 (also referred to as the 2025 Master Plan) of the proposed project would be implemented. Phase 1 would consist of the demolition of the two vacant retail buildings (Sears Auto Center and Sears Seasonal) totaling 28,500 square feet on the southern portion of the project site. Phase 1 of the proposed project also would include demolition of the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building. A total of 44,380 square feet of new commercial space would also be constructed, resulting in a total of 501,941 square feet of commercial space. Phase 1 would include the construction of a total of 922 residential units within three apartment-style residential buildings (containing 822 units) and 15 townhome buildings (containing 100 units), all located on a fourth parcel, resulting in a residential population of 2,295. At least 10.4 percent of the 922 dwelling units constructed would be below market rate units set aside for low-income households (minimum of 96 dwelling units). It is estimated that Phase 1 would result in a reduction in employees from approximately 2,190 to 1,434.

- **Reduced Residential Alternative:** Under the Reduced Residential Alternative, the total number of residential units would decrease by 63 units compared to the proposed project, for a total of 1,359 units at buildout and a resulting residential population of 3,384. The reduction in the number of units would occur during implementation of Phase 1, with development of 859 residential units. Specifically, Residential 1 would be developed with 33 townhomes units (63 fewer units and a different unit mix than the apartments proposed by the project), Residential 2 would be developed with 100 townhome units, Residential 3 would be developed with 280 apartment units, and Residential 4 would be developed with 446 apartment units. With the exception of the reduction in residential unit count and mix, all other elements of the Phase 1 2025 Master Plan and Phase 2 2040 Vision Plan proposed by the project would occur. At full buildout, the Reduced Residential Alternative would include a total of up to approximately 217,520 square feet of commercial space and up to 1,359 residential units, including 136 below market rate units set aside for low-income households. The below market rate units would be constructed throughout the project site and in compliance with Section 14.16.030 of the San Rafael Municipal Code.

These alternatives represent a reasonable range of potential alternatives to the proposed project in light of the objective of avoiding or reducing the severity of significant and unavoidable impacts and/or impacts identified as less than significant with mitigation, as discussed in Chapter 4.0 of this EIR. A few other potential alternatives were also considered, as discussed later in this chapter; however, none of these alternatives would substantially reduce or avoid the environmental impacts of the proposed project and/or would not meet many of the basic project objectives and were therefore ultimately not selected for further analysis.

The purpose of this discussion of alternatives to the proposed project is to enable decision-makers and the public to evaluate the project by considering how alternatives to the project as proposed might reduce or avoid the project's impacts on the physical environment. The analysis in this

chapter provides a qualitative evaluation of the environmental impacts that could be associated with each alternative and compares those potential impacts to those identified for the proposed project as described in Chapter 4.0, Setting, Impacts, and Mitigation Measures of this EIR. The analysis focuses on the topics addressed in Chapter 4.0. Topics not addressed in Chapter 4.0 but that were determined to have no impacts or less than significant impacts in Chapter 6.0, Other CEQA Considerations, include: agricultural and forestry resources, biological resources, mineral resources, and wildfire. These topics are not further addressed in this chapter.

5.1 NO PROJECT ALTERNATIVE

The following provides a description of the No Project Alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the No Project Alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the No Project Alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the proposed project.

5.1.1 Principal Characteristics

The No Project Alternative assumes that the proposed project would not be developed and that the project site would generally remain in its current condition. The project site would continue to be occupied by the Northgate Mall, including the main mall building, surrounding surface parking, and standalone buildings and structures. The existing mall is generally oriented on a north-south axis, with the main building located in the center of the project site surrounded by surface parking and standalone buildings and structures. The main mall building, which is a total of approximately 633,783 square feet in size, consists of five sections: (1) Mall Shops East, (2) Mall Shops West, (3) Century Theatre, (4) RH Outlet,[1] and (5) Macy's. West of the main building is a Kohl's department store, which also includes a small attached unoccupied retail space, a two-level parking structure containing approximately 476 parking spaces, and a vacant retail building. A Rite Aid, HomeGoods, and an additional vacant retail building are located east of the main building. An approximately 200-square-foot substation for the San Rafael Police Department (SRPD) is also currently located within the main mall building. All of these existing uses and facilities would continue to operate at the site, although occupancy would likely continue to fluctuate based on market demands.

5.1.2 Analysis of the No Project Alternative

The potential impacts associated with the No Project Alternative are described below. As discussed, the No Project Alternative would avoid all of the construction-related impacts of the proposed project. Full occupancy of the Northgate Mall with commercial uses would result in more vehicle trips compared to operation of the proposed project, with resulting air pollutant and greenhouse gas (GHG) emissions. No mitigation measures would be required for the No Project Alternative. The No Project Alternative would not achieve any of the objectives of the proposed project.

[1] The RH Outlet building was formerly known as the Sears anchor; certain project application materials refer to the building this way.

5.1.2.1 Land Use and Planning

Implementation of the No Project alternative would result in the continuation of existing conditions on the project site. Therefore, like the proposed project, the No Project alternative would not result in the physical division of an established community. Unlike the proposed project, the No Project alternative would fail to implement provisions of the City's General Plan 2040 and Plan Bay Area 2050 calling for mixed uses on the project site. These are plans, policies, and ordinances adopted for the purposes of avoiding or mitigating an environmental effect, but continuation of existing conditions would not represent a legal conflict with those plans and policies for purposes of CEQA. Therefore, the No Project alternative would have a **less than significant** impact related to land use and planning.

5.1.2.2 Population and Housing

Implementation of the No Project Alternative would result in the continuation of existing conditions on the project site. Therefore, the No Project Alternative would not result in substantial direct or indirect population growth beyond that planned for the city, county, or region, and would not result in the displacement of housing or people necessitating the construction elsewhere. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to population and housing. However, it should be noted that implementation of the No Project Alternative would not result in any of the housing benefits provided by the proposed project because the existing conditions at the site would not contribute to the needed and planned for supply of housing in San Rafael, including affordable housing.

5.1.2.3 Visual Resources

Implementation of the No Project Alternative would not result in any demolition activities or new construction on the project site, and therefore would not introduce any new buildings or structures that could have substantial adverse effects on scenic vistas or resources within view of a scenic highway, conflict with applicable regulations governing scenic quality, or create any new light or glare, or cast new shadows onto public open spaces. Therefore, compared to the less than significant impacts of the proposed project, there would be **no impact** related to aesthetics.

5.1.2.4 Cultural Resources

Implementation of the No Project Alternative would not result in any demolition or ground-disturbance activities or include any new construction. Similar to the proposed project, the No Project alternative would not cause a substantial adverse change in the significance of a historical resources or disturb any human remains and these less than significant project impacts would result in no impact under the No Project alternative. In addition, since there would be no ground disturbance, implementation Mitigation Measures CUL-1a through CUL-1c, which are required for the proposed project, would not be required to reduce potentially significant impacts to archaeological resources during the construction period to a less than significant level. Therefore, compared to the less than significant impacts of the proposed project, the No Project alternative would have **no impact** related to cultural resources.

5.1.2.5 Tribal Cultural Resources

Implementation of the No Project alternative would not result in any ground disturbance and would result in the continuation of existing conditions on the project site. Therefore, since there would be no ground disturbance, implementation Mitigation Measures TCR-1a through TCR-1b, which are required for the proposed project, would not be required to reduce potentially significant impacts to tribal cultural resources during the construction period a less than significant level. the No Project alternative would not disturb damage, or degrade any tribal cultural resources. Therefore, compared to the less than significant impacts of the proposed project, the No Project alternative would have **no impact** related to tribal cultural resources.

5.1.2.6 Geology and Soils

Implementation of the No Project Alternative would not result in any demolition or ground-disturbance activities or include any new construction. Therefore, the No Project alternative would not result in any impacts associated with fault rupture or other seismic events. Since there would be no ground disturbance or new construction, implementation of Mitigation Measures GEO-1 and GEO-2, which are required for the proposed project, would not be required to reduce potentially significant impacts related to expansive soils and unstable soils subject to subsidence, settlement, or differential settlement to a less than significant level. In addition, because no ground disturbance would occur, implementation of the No Project Alternative would not potentially destroy or substantially damage a unique paleontological resource or geologic feature, and proposed project Mitigation Measure GEO-3 would also not be required. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to geology and soils. However, it should also be noted that implementation of the No Project alternative would not result in the redevelopment of the site and construction of buildings that would meet the most recently adopted California Building Code seismic standards because the mall has not been renovated since 2008.[2]

5.1.2.7 Hydrology and Water Quality

Implementation of the No Project Alternative would not result in any ground-disturbance activities, changes to impervious surface conditions, or new construction on the project site. Therefore, the No Project Alternative would not result in any impacts associated with construction period water quality standards, and implementation of Mitigation Measure HYD-1, which is required for the proposed project, would not be required to reduce potentially significant construction-period impacts related to dewatering activities and the potential for groundwater contaminants to enter the project site to a less than significant level. Similarly, Mitigation Measure HYD-2 would not be required to ensure that interference with the sustainable management of groundwater in the Santa Rosa Plain Subbasin does not occur and Mitigation Measure HYD-3 would not be required to ensure that the capacity of proposed stormwater infrastructure is not exceeded, resulting in potential on- and off-site flooding. The less than significant project impacts related to operation period water

[2] The mall originally opened in 1965. In 1987, the site underwent a major renovation that primarily enclosed the original open-air design and underwent additional renovations in 2008 in which the owner at the time proposed to demolish a portion of the central mall building and make various exterior improvements.

quality standards, alteration of pervious surfaces, erosion and siltation, and potential release of pollutants due to project inundation due to flooding or dam failure also would not occur. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to hydrology and water quality. However, it should also be noted that implementation of the No Project alternative would not result in the reduction of impervious surface and addition of stormwater treatment that the proposed project would provide.

5.1.2.8 Hazards and Hazardous Materials

Implementation of the No Project Alternative would not result in any demolition or ground-disturbance activities or include any new construction. Therefore, the No Project Alternative would not result in any impacts associated with the potential release of contaminants into the environment as a result of demolition and renovation activities and implementation of Mitigation Measure HAZ-1, which is required for the proposed project, would not be required to reduce potentially significant construction-period impacts associated with hazardous building materials to a less than significant level. Similarly, Mitigation Measure HAZ-2 would not be required to control the risk of releasing hazardous materials into the environment during project construction and operation due to existing subsurface soil contamination at the site. In addition, the following would not occur: significant project impacts related to the routine transport, use, disposal, and management of hazardous materials during construction and operation; accidental release of hazardous materials due to spills, leaks, or improper disposal of such materials; hazardous emissions within proximity to schools; listing on databases compiled for the purposes of documenting hazardous materials sites; and aviation hazards. Additionally, no modifications to existing site access or infrastructure would occur, thus no impacts related to emergency evacuation plans would occur. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to hazards and hazardous materials.

5.1.2.9 Transportation

Implementation of the No Project Alternative would not result in any changes to site circulation or access and automobile, transit, bicycle, or pedestrian travel to and from the project site would be the same as the existing condition. Therefore, compared to the less than significant impacts of the proposed project, there would be **no impact** related to conflicts with applicable transportation-related plans, policies and ordinances; vehicle miles traveled (VMT); design hazards; and emergency access. It should also be noted that implementation of the No Project Alternative would not result in the overall reduction of vehicle trips to and from the site, compared to the proposed project. As discussed in Section 4.8, Transportation, the existing mall use generates approximately 24,324 daily vehicle trips to and from the project site, including 565 trips in the AM peak hour and 2,079 trips in the PM peak hour.[3] Implementation of the proposed project would result in a net reduction of 3,585 daily vehicle trips to and from the project site, including 345 fewer trips during the PM peak hour. Implementation of the proposed project would, however, increase the number of AM peak-hour trips by 172 trips.

[3] W-Trans. 2023. *Transportation Impact Study for the Northgate Town Square Project*. February 14.

5.1.2.10 Air Quality

Implementation of the No Project Alternative would not result in any demolition or ground-disturbance activities or include any new construction. Therefore, the No Project Alternative would not result in any impacts associated with construction period emissions (including fugitive dust and ozone precursors) and implementation of Mitigation Measures AIR-2 and AIR-3, which are required for the proposed project (Mitigation Measure AIR-3 is required for Phase 1 only), would not be required to reduce potentially significant construction-period impacts to a less than significant level. Similarly, Mitigation Measure AIR-4 would not be required to reduce the exposure of sensitive receptors to substantial pollutant concentrations during the construction period. Also compared to the less than significant project impacts related to operation period emissions, including criteria air pollutants, exposure of sensitive receptors to pollutant concentrations and other emissions such as odors, and associated conflicts with the Clean Air Plan, there would be **no impact** under the No Project Alternative. It should also be noted, similar to the discussion above in Section 5.1.2.9, mobile source emissions would be reduced with the proposed project, compared to existing conditions; therefore, these emission reductions would not be realized under the No Project Alternative.

5.1.2.11 Greenhouse Gas Emissions

Implementation of the No Project Alternative would not result in any demolition activities or include any new construction. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would not result in any impacts associated with construction period GHG emissions. Operation-period emissions associated with the proposed project also would not occur, and there would be no conflict with the Bay Area Air Quality Management District's (BAAQMD) GHG reduction measures. Specifically, no new construction or uses would be established that would use natural gas; therefore, implementation of Mitigation Measures GHG-1 would not be required, and the significant unavoidable impacts associated with the generation of GHG emissions would not occur. Similarly, conflicts with policies and plans implemented for the purposes of reducing GHG emissions also would not occur. Therefore, compared to the significant and unavoidable impacts of the proposed project, the No Project Alternative would have **no impact** related to GHG emissions. However, it should be noted that the use of natural gas and associated GHG emissions would be lower with the proposed project than with the No Project Alternative, which would retain all existing retail/restaurant square footage with existing natural gas connections that are used for space heating as well as commercial kitchens.

In addition, it should be noted that implementation of the No Project Alternative would also not result in the reduction of operational GHG emissions provided by the proposed project due to the reduction in daily vehicle trips to and from the project site. As discussed in Section 4.8, Transportation, implementation of the proposed project would result in a net reduction of 3,585 daily vehicle trips to and from the project site. This reduction in daily vehicle trips would decrease the amount of GHGs emitted during operational vehicle trips to and from the project site and reduce the GHG emissions associated with uses at the project site.

5.1.2.12 Noise

Implementation of the No Project Alternative would not result in any construction activities on the site or introduction of a new mix of uses to the site, including noise-sensitive residential uses.

Therefore, compared to the less than significant impacts of the proposed project, there would be no impact related to exposure of off-site sensitive receptors to operation-period noise or increases in roadway traffic noise in excess of established standards during project operation. Similar to the proposed project, there also would be no impact related to aircraft-related noise. Given that there would be no construction activities on the site, short-term increases in ambient noise levels would not occur and implementation of Mitigation Measure NOI-1, requiring the installation of construction-period sound barriers, would not be required to reduce exposure of noise sensitive land uses to construction noise. Because no new sensitive receptors would be introduced to the site, the significant and unavoidable impact to on-site residential land uses would not occur and Mitigation Measure NOI-2 would not be required. Compared to the less than significant and significant and unavoidable impacts of the proposed project, the No Project Alternative would have **no impact** related to noise.

5.1.2.13 Public Services and Recreation

Implementation of the No Project Alternative would result in the continuation of existing conditions on the project site. Therefore, the No Project Alternative would not result in the need for additional fire or police staffing or services, or the need for any new or physically altered governmental facilities, including parks and recreational facilities. Compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to public services and recreation.

5.1.2.14 Utilities and Service Systems

Implementation of the No Project Alternative would result in the continuation of existing conditions on the project site. Therefore, the No Project Alternative would not require the relocation or construction of any new utilities or new or expanded entitlements including increased demand for water supply, and would not result in the generation of any wastewater or solid waste. New wastewater infrastructure would not be required, and implementation of Mitigation Measure UTL-1 would not be necessary. Compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to utilities and service systems.

5.1.2.15 Energy

Implementation of the No Project Alternative would not result in any demolition activities or include any new construction. As a result, this alternative would not result in any environmental impacts associated with the wasteful, inefficient, or unnecessary consumption of energy resources. Similarly, the No Project Alternative would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, compared to the less than significant impacts of the proposed project, the No Project Alternative would have **no impact** related to energy.

However, it should be noted that implementation of the No Project Alternative would not result in the reduction of operational energy use provided by the proposed project due to the reduction in daily vehicle trips to and from the project site. As discussed in Section 4.8, Transportation, implementation of the proposed project would result in a net reduction of 3,585 daily vehicle trips to and from the project site. This reduction in daily vehicle trips would decrease the amount of vehicle fuel used during operational vehicle trips to and from the project site and reduce the overall

energy use associated with transportation to and from the project site. In addition, the No Project Alternative would not replace any of the mall's existing buildings with new buildings constructed to current energy conservation codes and using electricity rather than natural gas for space heating, as would the proposed project.

5.2 Reduced Development Alternative

The following provides a description of the Reduced Development Alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the Reduced Development Alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the Reduced Development Alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the proposed project.

5.2.1 Principal Characteristics

The Reduced Development Alternative would result in redevelopment of the project site with implementation of Phase 1 of the proposed project only. As described in Chapter 3.0, Project Description, Phase 1 would implement the 2025 Master Plan and would generally include the demolition of the Sears Auto Center and Sears Seasonal building (28,500 square feet of commercial space) and the RH Outlet building, the HomeGoods building, and Mall Shops East, which is approximately 144,432 square feet of the main building. Phase 1 would include the construction of approximately 44,380 square feet of new commercial space. Overall, Phase 1 would result in a reduction in gross leasable area on the project site from approximately 766,507 square feet to 501,941 square feet. Therefore, it is estimated that Phase 1 would result in a reduction in employees from approximately 2,190 to 1,434.

Under this alternative, Phase 1 of the project would include the construction of a total of 922 residential units within three apartment-style residential buildings (containing 822 units), each on their own parcel, and 15 townhome buildings (containing 100 townhome units), all located on a fourth parcel. At least 10.4 percent of the 922 dwelling units constructed would be below market rate units set aside for low-income households (minimum of 96 dwelling units). Conservatively assuming the citywide average of 2.49 residents per dwelling unit, the residential population would be approximately 2,296 residents.

Phase 1 would provide approximately 601,227 square feet of open space, which would consist of approximately 295,659 square feet of useable open space and approximately 305,568 square feet of landscaped area. Phase 1 would also include the construction of a Town Square near the center of the project site, which would be approximately 48,075 square feet in size and would contain a large flexible lawn space, dog park, children's nature play features, water feature, flexible stage, fire features, lounge seating, and game tables.

In addition to the parking structures and private parking garages provided for each of the residential buildings, Phase 1 would also include nine surface parking lots throughout the project site. In total, Phase 1 would provide approximately 3,490 parking spaces, 1,587 of which would be reserved for use by residents and guests of the residential buildings, and the remaining 1,903 would be for commercial use.

Internal roadways that provide access to the project site (i.e., adjacent to Merrydale Road, Thorndale Drive) would generally remain the same. Internal roadways providing access to the surface parking lots and between the buildings would be reconfigured. New pedestrian and bicycle paths would be provided throughout the project site, and a multi-modal path would be provided along the Las Gallinas Avenue frontage.

Overall, construction of Phase 1 is anticipated to last approximately 19 to 32 months, and is anticipated to be fully operational and occupied by 2026. A total of approximately 62,416 cubic yards of soil would be excavated from the site, approximately 39,738 cubic yards of which would be used on the project site and approximately 22,677 cubic yards of which would be exported. Phase 1 would include the demolition of approximately 308,946 square feet of building space and approximately 15.66 acres of asphalt. A total of approximately 26,048 tons of demolition waste would be generated in Phase 1, of which 7,189 tons of demolished building material would be reused on site while 18,859 tons would be exported off site.

5.2.2 Analysis of the Reduced Development Alternative

The potential impacts associated with the Reduced Development Alternative are described below. As discussed, the Reduced Development Alternative would slightly reduce the less than significant impacts related to air quality, energy, and noise for the proposed project due to the reduced construction and operation intensity, and would avoid the noise impact on Phase 1 residents from Phase 2 construction, but would not eliminate any of the required construction-period mitigation measures. The Reduced Development Alternative would also slightly decrease impacts associated with GHG emissions and heating, ventilation, and air conditioning (HVAC) operational noise on project residents, but would not reduce those impacts to less than significant levels. In addition, the Reduced Development Alternative would meet all of the identified project objectives detailed in Chapter 3.0, Project Description, although to a lesser extent due to the reduction in total number of residential units to be developed.

5.2.2.1 Land Use and Planning

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. Similar to the proposed project, the Reduced Development Alternative would not result in the physical division of an established community because the changes in land use would be confined to the project site. Similar to the proposed project, the site would be rezoned to the Planned Development (PD) district, to allow development of the site and flexibility in site design. At 501,941 square feet of commercial space, the Reduced Development Alternative would have a floor area ratio (FAR) of 0.26, compared to the 0.11 FAR for the proposed project. Similar to the proposed project, the Reduced Development Alternative would include a request to use the density bonus afforded to the proposed project by providing affordable housing to modify the development standards for height on the project site to allow buildings up to 90 feet in height. Similar to the proposed project, the Reduced Development Alternative would also be generally consistent with the land use and planning-related policies outlined in the General Plan, and no adverse physical environmental

effects would result from any policy inconsistencies. Therefore, similar to the proposed project, impacts to land use and planning would be **less than significant**.

5.2.2.2 Population and Housing

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. The Reduced Development Alternative would continue to provide short-term construction jobs, although fewer than the proposed project because construction would only consist of one phase lasting 19 to 32 months. The Reduced Development Alternative's contribution to the number of residential units planned for and anticipated by the City would remain the same in 2025, but would be reduced to 25.4 percent of the population increase[4] by 2040 and 26.6 percent of the households, compared to the proposed project's contribution of 39.2 percent and 41.1 percent, respectively. The Reduced Development Alternative would also generate increased demand for housing from additional nonresidential square footage compared to the proposed project because it would include more commercial space. However, the commercial space would still be reduced compared to existing conditions; therefore, overall demand for housing would still be anticipated to decrease. Similar to the proposed project, the Reduced Development Alternative would result in a reduction in employees on the project site and add to the supply of market rate and affordable housing, and would moderate displacement pressures to some degree by relieving market pressures on existing housing stock, although to a lesser degree than the proposed project because fewer residential units would be developed. Therefore, similar to the proposed project, impacts to population and housing would be **less than significant**.

5.2.2.3 Visual Resources

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with construction of fewer new buildings than the proposed project. Similar to the proposed project, the Reduced Development Alternative would include new buildings on the project site that would extend up to 78 feet in height and up to 90 feet with elevator penthouses and other projections, although there would be fewer buildings compared to the proposed project, which would reduce the overall mass of the project as seen from a distance. These buildings would be in the same locations as Phase 1 of the proposed project, but omitting the Phase 2 buildings would slightly reduce the impact to public views of identified scenic resources. Similar to the proposed project, the Reduced Development Alternative would not be located near any eligible or designated State Scenic Highways and therefore would not impact any scenic resources. Similar to the proposed project, the Reduced Development Alternative would include regulations built into the PD district, would conform with the design review process, and therefore would not conflict with the visual quality-related policies and programs set forth in the San Rafael General Plan. The Reduced Development Alternative would introduce slightly less lighting to the project site compared to the proposed project because it would include fewer residential buildings; therefore, the less than significant impacts related to light and glare would be slightly reduced. Similarly, increased shadows would be slightly reduced due to fewer

[4] Based on the conservative assumption of 2.49 persons per household which, under the Reduced Density Alternative, equates to 2,296 residents.

new buildings on the site. Therefore, similar to the proposed project, impacts to visual resources would be **less than significant**.

5.2.2.4 Cultural Resources

The Reduced Development Alternative would result in redevelopment of the project site but with overall less demolition activity and ground disturbance than the proposed project and reduced new construction. Similar to the proposed project, implementation of this alternative would not result in any impacts to historic architectural resources because none are present on the site. The Reduced Development Alternative would include the same footprint as the proposed project and therefore would result in the same less than significant impacts to the Terra Linda Valley Neighborhood, which does qualify as a historic resource under CEQA, as the proposed project. Similar to the proposed project, the Reduced Development Alternative would have the potential to impact archaeological deposits or resources due to the generally level topography and presence of a drainage to South Fork Creek. Implementation of Mitigation Measures CUL-1a through CUL-1c would be required to reduce construction-period impacts to archaeological resources. Finally, similar to the proposed project, the Reduced Development Alternative would be required to comply with Section 7050.5 of the California Health and Safety Code and Public Resources Code (PRC) Section 5097.98. Therefore, similar to the proposed project, impacts to cultural resources would be **less than significant with mitigation**.

5.2.2.5 Tribal Cultural Resources

The Reduced Development Alternative would result in redevelopment of the project site but with overall less ground disturbance than the proposed project. Similar to the proposed project, the Reduced Development Alternative would have the potential to impact tribal cultural resources because it would be located on the same site and include ground-disturbing activities. Implementation of Mitigation Measures TCR-1a and TCR-1b would be required to reduce construction-period impacts to tribal cultural resources. Therefore, similar to the proposed project, impacts to tribal cultural resources would be **less than significant with mitigation**.

5.2.2.6 Geology and Soils

The Reduced Development Alternative would result in redevelopment of the project site but with overall less demolition activity and ground disturbance than the proposed project and reduced new construction. Similar to the proposed project, the Reduced Development Alternative would not result in any impacts associated with proximity to an Alquist-Priolo Earthquake Fault Zone. The Reduced Development Alternative would be required to be designed and constructed in accordance with the recommendations of the Geotechnical Investigation prepared for the proposed project and the California Building Code (CBC), and therefore would have the same less than significant impacts related to ground shaking. The Reduced Development Alternative would be located on the same site as the proposed project, and therefore would result in the same less than significant impacts related to liquefaction, seismic settlement, lateral spreading, and landslides. However, similar to the proposed project, the Reduced Development Alternative would also be susceptible to impacts from expansive and unstable soils. Implementation of Mitigation Measures GEO-1 and GEO-2 would be required. Additionally, similar to the proposed project, the Reduced Development Alternative could result in impacts to previously undiscovered paleontological resources. Implementation of

Mitigation Measure GEO-3 would be required. Therefore, similar to the proposed project, impacts to geology and soils would be **less than significant with mitigation**.

5.2.2.7 Hydrology and Water Quality

The Reduced Development Alternative would result in redevelopment of the project site but with overall less demolition activity and ground disturbance than the proposed project and reduced new construction. Similar to the proposed project, the Reduced Development Alternative would require dewatering activities and could contribute to the migration of contaminated groundwater to previously uncontaminated areas, and implementation of Mitigation Measure HYD-1 would be required. The Reduced Development Alternative would include new residential uses on the project site and could interfere with sustainable management of groundwater in the Santa Rosa Plain Subbasin due to increased water demand, although the number of residential units would be reduced compared to the proposed project. However, implementation of Mitigation Measure HYD-2 would still be required because Sonoma Water's 2020 Urban Water Management Plan does not assume any residential uses on the project site. Similar to the proposed project, the Reduced Development Alternative would be required to treat stormwater runoff consistent with the General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit), which would ensure less than significant impacts related to erosion and siltation. Finally, the stormwater infrastructure included in the Reduced Development Alternative would be the same as the proposed project and therefore could result in flooding on the project site and surrounding roadways. Therefore, implementation of Mitigation Measure HYD-3 would be required. Therefore, similar to the proposed project, impacts to hydrology and water quality would be **less than significant with mitigation**.

5.2.2.8 Hazards and Hazardous Materials

The Reduced Development Alternative would result in redevelopment of the project site but with overall less demolition activity and ground disturbance than the proposed project and reduced new construction. Therefore, the Reduced Development Alternative would result in the same less than significant impacts related to the routine use of hazardous materials. The Reduced Development Alternative would include demolition of existing buildings; therefore, Mitigation Measure HAZ-1 would be required to reduce potential impacts related to the release of hazardous materials into the environment. The Reduced Development Alternative would be located on the same site as the proposed project and would result in the same potentially significant impacts related to subsurface hazardous materials; therefore, Mitigation Measure HAZ-2 would be required. Similar to the proposed project, the Reduced Development Alternative would not result in any impacts related to hazardous material use or release near schools, sites listed pursuant to Government Code Section 65962.5, or aviation hazards. Finally, the Reduced Development Alternative would slightly reduce the less than significant impacts related to emergency response because it would include fewer residential uses on the project site. Therefore, similar to the proposed project, impacts to hazards and hazardous materials would be **less than significant with mitigation**.

5.2.2.9 Transportation

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units

and more commercial space than full buildout of the proposed project. The Reduced Development Alternative would generate vehicle trips to and from the project site during construction, although fewer than the proposed project because construction would only consist of one phase lasting 19 to 32 months. In addition, the Reduced Development Alternative would generate fewer vehicle trips associated with residential uses because the Reduced Development Alternative would develop fewer residential units than the proposed project. Although the Reduced Development Alternative would retain more commercial space than full buildout of the proposed project, the commercial space would still be reduced compared to existing conditions; therefore, the overall impact associated with vehicle trips to and from the project site would still be anticipated to decrease. Specifically, Phase 1 of the proposed project is expected to generate an average of 20,739 trips per day, including 735 trips during the AM peak hour and 1,734 during the PM peak hour. After deductions are taken into account, the Reduced Development Alternative would be expected to generate a net reduction of 3,585 trips on a daily basis, including adding 172 trips during the AM peak hour and 345 fewer trips during the PM peak hour compared to existing conditions (see Table 4.9.D in Section 4.9, Transportation). Compared to buildout of the proposed project, however, the total number of daily trips (with and without trip deductions) would increase by 4,799 trips. Similarly, AM peak-hour trips would decrease by 5 and PM peak-hour trips would increase by 541 (also refer to Table 4.9.E in Section 4.9, Transportation). Overall, similar to the proposed project, the Reduced Development Alternative would not conflict with applicable transportation-related plans, policies and ordinances, design hazards, and emergency access.

As discussed in Section 4.9, Transportation, Phase 1 of the proposed project is projected to produce 11.0 VMT per capita related to residential land uses under the existing baseline scenario, reducing to 9.0 VMT per capita under the 2040 scenario. Therefore, the residential components of the proposed project would have a less than significant impact on VMT during implementation of Phase 1. In addition, Phase 1 would also be expected to reduce the total retail VMT generated at the project site by approximately 38,350 to 39,600 miles per day as compared to existing conditions. In the year 2040 with buildout of Phase 2, the total retail VMT is projected to be approximately 81,100 miles less per day than existing conditions. Since the redevelopment of retail uses proposed by the project would lead to a reduction in total retail VMT, the project's retail component is considered to have a less than significant impact on VMT. Therefore, similar to the proposed project, the Reduced Development Alternative would result in less than significant VMT impacts.

Implementation of Mitigation Measure TRA-1, ensuring that a minimum of 216 feet of sight distance would be available for drivers at the driveway 280 feet north of Northgate Drive/Thorndale Drive, would be required to reduce impacts associated with transportation hazards. With implementation of Mitigation Measure TRA-1, similar to the proposed project, impacts to transportation would be **less than significant with mitigation**.

5.2.2.10 Air Quality

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. Grading activities would be reduced compared to the proposed project and therefore pollutant and odor concentrations would decrease and, although dust, exhaust, and organic emissions would also be generated related to

construction, this would occur to a lesser extent than the proposed project. However, implementation of Mitigation Measure AIR-2 would still be required to reduce construction-period air quality impacts. The Reduced Development Alternative would also generate reactive organic gases (ROGs) and nitrogen oxides (NO_X) emissions in excess of thresholds established by the BAAQMD during construction of Phase 1 (see Table 4.10.E in Section 4.10, Air Quality), and implementation of Mitigation Measures AIR-3a and AIR-3b would be required to reduce this impact to a less than significant level (see Table 4.10.F in Section 4.10, Air Quality). Note that this impact does not occur with implementation of Phase 2 of the proposed project. Finally, similar to the proposed project, this alternative would result in an increased intensity of uses on the site compared to existing conditions and area source emissions would be increased though to a lesser extent than the proposed project. However, daily operational energy and mobile source emissions would be decreased compared to existing conditions and increased compared to the proposed project due to the increased commercial square footage that would continue to operate under this alternative (see Table 4.10.G in Section 4.10, Air Quality). Overall, impacts related to Clean Air Plan implementation would be slightly increased compared to the proposed project but would also be less than significant. In addition, health risks to on-site Phase 1 resident sensitive receptors would not occur under this alternative because no new construction would occur within the project site after completion of Phase 1; therefore, Mitigation Measure AIR-4 would not be required. Therefore, similar to the proposed project, impacts to air quality would be **less than significant with mitigation**.

5.2.2.11 Greenhouse Gas Emissions

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. Construction activities would be reduced compared to the proposed project because construction would only consist of one phase lasting 19 to 32 months; therefore, associated construction-period GHG emissions would decrease as compared to the proposed project and would remain **less than significant**.

Operation-period emissions associated with the Reduced Development alternative would occur, similar to the proposed project, although compared to existing conditions, mobile source emissions would not be reduced to the same extent as the proposed project. Similar to the proposed project, implementation of Mitigation Measure GHG-1 would be required to ensure that natural gas fire pits are not included in the project design, but for the same reasons as the proposed project, prohibition of natural gas in commercial kitchens would be infeasible; therefore, the Reduced Residential Alternative would conflict with the BAAQMD's thresholds established for the purpose of reducing GHG emissions and would result in the generation of GHG emissions that would have a significant impact on the environment. Therefore, similar to the proposed project, impacts related to GHG emissions would be **significant and unavoidable**.

5.2.2.12 Noise

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. Similar to the proposed project, there also would be no impact related to aircraft-related noise. Although the Reduced Development Alternative would retain more commercial space than full buildout of the proposed

project, the commercial space would still be reduced compared to existing conditions; therefore, the overall impact associated with vehicle trips to and from the project site would still be anticipated to decrease. Overall, as discussed above, vehicle trips to and from the site would still decrease compared to existing conditions, though not to the same extent as the proposed project. Therefore, increases in roadway traffic noise would continue to be less than significant under this alternative, although the reduction would be less than the proposed project. Similarly, exposure of off-site sensitive receptors to construction-period noise would still occur under this alternative because Residential Parcels 2 and 3 would still be constructed within proximity to nearby sensitive land uses and this construction activity would exceed established thresholds (refer to Tables 4.12.G and 4.12.H in Section 4.12, Noise). Therefore, implementation of Mitigation Measure NOI-1, requiring the installation of construction-period sound barriers, would continue to be required to reduce exposure of noise sensitive land uses to construction noise. Note that with elimination of Phase 2, the noise impact on Phase 1 residents of Phase 2 construction is avoided. Similar to the proposed project, because a new mix of land uses and sensitive receptors would be introduced to the site under the Reduced Development Alternative, the significant and unavoidable impact to on-site residential land uses would remain and Mitigation Measure NOI-2 would be required. However, the ability of this measure to achieve a less than significant noise impact cannot be determined. Therefore, similar to the proposed project, impacts related to noise would be **significant and unavoidable**.

5.2.2.13 Public Services and Recreation

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. The Reduced Development Alternative would generate demand for public services and recreation facilities; however, this demand would be less when compared to the proposed project because the Reduced Development Alternative would develop fewer residential units and therefore result in a reduced increase in population on the site compared to the proposed project. Although the Reduced Development Alternative would retain more commercial space than full buildout of the proposed project, the commercial space would still be reduced compared to existing conditions, and therefore overall demand on public services and recreation facilities would still be anticipated to decrease. Therefore, similar to the proposed project, impacts related to public services and recreation would be **less than significant**.

5.2.2.14 Utilities and Service Systems

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. The Reduced Development Alternative would generate demand for utilities and service systems; however, this demand would be less when compared to the proposed project because the Reduced Development Alternative would develop fewer residential units and therefore result in a reduced increase in population on the site compared to the proposed project. Although the Reduced Development Alternative would retain more commercial space than full buildout of the proposed project, the commercial space

would still be reduced compared to existing conditions; therefore, the overall demand on utilities and service systems facilities would still be anticipated to decrease.

Although implementation of the Reduced Development Alternative would decrease the overall demand on utilities and service systems compared to the proposed project, the increase in wastewater generation at the project site would still require that the existing 12-inch-diameter Terra Linda Trunk Sewer line downstream of the project site be upsized to a 15-inch diameter in coordination with the Las Gallinas Valley Sanitation District. According to Section 4.14, Utilities and Service Systems, the existing 12-inch-diameter sewer line could accommodate approximately 384 units with no modifications. However, this is not sufficient to accommodate implementation of Phase 1 of the proposed project, which includes development of up to 922 residential units. To address the capacity deficiency in this portion of the Terra Linda Trunk Sewer and allow for additional development, the 12-inch-diameter sewer line would need to be up-sized. With implementation of Mitigation Measure UTL-1, requiring improvements to the surrounding sewer system infrastructure, impacts related to utilities and service systems would be **less than significant with mitigation**, similar to the proposed project.

5.2.2.15 Energy

The Reduced Development Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units and more commercial space than full buildout of the proposed project. Construction activities would be reduced compared to the proposed project because construction would only consist of one phase lasting 19 to 32 months. Therefore, associated energy usage would decrease as compared to the proposed project. The Reduced Development Alternative would use energy during operation; however, this usage would be less when compared to the proposed project because the Reduced Development alternative would develop fewer residential units. Although the Reduced Development alternative would retain more commercial space than full buildout of the proposed project, the commercial space would still be reduced compared to existing conditions, and therefore overall energy usage would still be anticipated to decrease.

Similar to the proposed project, implementation of the Reduced Development Alternative would use renewable energy on site as determined to be feasible and would not result in wasteful, inefficient, or unnecessary consumption of energy resources, including electricity, natural gas, or petroleum, during construction or operation. In addition, because the Reduced Development Alternative would comply with and exceed the existing energy standards and regulations, similar to the proposed project, implementation would not conflict with energy standards and regulations. Therefore, similar to the proposed project, impacts related to energy would be **less than significant**.

5.3 REDUCED RESIDENTIAL ALTERNATIVE

The following provides a description of the Reduced Residential Alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the Reduced Residential Alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the Reduced

Residential Alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the proposed project.

5.3.1 Principal Characteristics

The Reduced Residential Alternative would result in redevelopment of the project site according to the Phase 1 2025 Master Plan and Phase 2 2040 Vision Plan as described in Chapter 3.0, Project Description, with the exception that the total number of residential units would be reduced from 1,422 to 1,359, with a resulting decrease in residential population from 3,541 to 3,384 based on the conservative General Plan 2040 assumption of 2.49 residents per household. Total residential square footage would be reduced from 1,746,936 square feet to 1,704,762 square feet (a reduction of 41,174 square feet). The reduction in the number of residential units would occur during Phase 1, where the total number of units would be reduced by 63 from 922 units to 859 units. Specifically, Residential 1, at the southwest corner of the site, would be developed with 33 townhomes units at a height of 35 feet, rather than the 96 apartment units in a five-story building proposed by the project. Residential buildings 2, 3, and 4 would include the same number and mix of units as the proposed project, including 100 townhomes, 280 apartments, and 446 apartments, respectively.

Although the Residential 1 parcel would not be developed with an apartment building restricted to low-income households as proposed by the project, this alternative would continue to comply with Section 14.16.030 of the City's Zoning Ordinance for the provision of below market rate units, with up to 10 percent (136) of the units restricted to low-income households. This would be achieved by the inclusion of 86 units of low-income households within the Phase 1 market rate multi-family residential developments and an additional 50 units of low-income households with the Phase 2 market rate multi-family residential developments.

With the reduced number of residential units, the total parking count under this alternative would be reduced to 3,824 spaces as compared to the 3,849 spaces provided by the proposed project. A total of 2,499 parking spaces would be available for residents and guests and 1,325 spaces would be for commercial uses. Total open space would be the same as for the proposed project (705,384 square feet). At buildout, the total commercial area would be the same as the proposed project, at 217,520 square feet. All other components of the proposed project, including on- and off-site circulation, demolition and construction activity, and phasing would be similar to the proposed project.

5.3.2 Analysis of the Reduced Residential Alternative

The potential impacts associated with the Reduced Residential Alternative are described below. As discussed, the Reduced Residential alternative would slightly reduce the less than significant impacts related to air quality, GHG emissions, energy, and noise for the proposed project due to the reduced operational intensity and reduction in vehicle trips associated with fewer residential units, but would not eliminate any of the required construction- or operation-period mitigation measures. In addition, the Reduced Residential Alternative would meet all of the identified project objectives detailed in Chapter 3.0, Project Description, although to a lesser extent due to the reduction in total number of residential units to be developed.

5.3.2.1 Land Use and Planning

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units than full buildout of the proposed project. Similar to the proposed project, the Reduced Residential Alternative would not result in the physical division of an established community because the changes in land use would be confined to the project site. Similar to the proposed project, the site would be rezoned to the PD district to allow development of the site and flexibility in site design. The total residential density of the Reduced Residential Alternative would be 30.36 dwelling units per acre, whereas the proposed project density would be 31.8 units per acre. The commercial FAR would be the same at 0.11. Similar to the proposed project, the Reduced Residential Alternative would include a request to use the density bonus afforded to the proposed project by providing affordable housing to modify the development standards for height on the project site to allow buildings up to 90 feet in height. Similar to the proposed project, the Reduced Residential alternative would also be generally consistent with the land use and planning-related policies outlined in the General Plan, and no adverse physical environmental effects would result from any policy inconsistencies. Therefore, similar to the proposed project, impacts to land use and planning would be **less than significant**.

5.3.2.2 Population and Housing

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units than full buildout of the proposed project. The Reduced Residential Alternative would continue to provide short-term construction jobs similar to the proposed project. However, the total number of residential units at buildout would be reduced from 1,422 to 1,359, or 63 fewer units. The number of units developed during Phase 1 would be reduced from 922 units to 859 units, and the number of units to be developed during Phase 2 would be the same at 500 units. Using the conservative General Plan 2040 calculation of 2.49 residents per household, this alternative would result in a total residential population on the site of 3,384, for a reduction of 157 residents compared to the proposed project's population of 3,541 residents. This also equates to a reduction in the residential population at completion of Phase 1 from 2,295 to 2,138 residents.

The Reduced Residential Alternative's contribution to the number of residential units planned for and anticipated by the City would be reduced in 2025 and through buildout in 2040 through the reduction in the number of residential units compared to the proposed project. Specifically, the Reduced Residential Alternative's contribution to the city's projected population increase in 2025 would be reduced to 39.7 percent of the projected population increase and 150.2 percent of the projected household increase, as compared to the project's contribution of 42.7 percent and 161 percent, respectively. In 2040, the population increase would be reduced to 37.5 percent and the number of households would be reduced to 39.3 percent, compared to the proposed project's contribution of 39.2 percent and 41.1 percent, respectively.

The Reduced Residential Alternative would also generate a similar reduced demand for housing from nonresidential square footage compared to the proposed project because it would include the same amount of commercial space. Similar to the proposed project, the Reduced Residential Alternative would result in a reduction in employees on the project site, add to the supply of market

rate and affordable housing, and would moderate displacement pressures to some degree by relieving market pressures on existing housing stock, although to a lesser degree than the proposed project because fewer residential units would be developed. Therefore, similar to the proposed project, impacts to population and housing would be **less than significant**.

5.3.2.3 Visual Resources

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with construction of fewer residential units than the proposed project. The reduction in units would occur on the Residential 1 parcel at the southwest corner of the site, along Northgate Drive between Thorndale Drive and El Faison Drive, where the proposed five-story (60-foot), 96-unit apartment building for the proposed project would be located. Under this alternative, this parcel would be developed with 33 residential townhome units, up to 35 feet in height. Similar to the proposed project, the Reduced Residential Alternative would include new buildings across the remainder of the project site that would extend up to 78 feet in height and up to 90 feet with elevator penthouses and other projections. Other than the Residential 1 parcel, where overall building heights would be reduced, all other building locations and heights would be the same as the proposed project. With the reduction in building heights and massing at this location, views from the north along Manuel T. Freitas Parkway toward the surrounding hillsides to the south (Viewpoint 2 as described in Section 4.3, Visual Resources, and shown on Figure 4.3-6), would be slightly less obstructed under this alternative as compared to the proposed project. The Residential 1 parcel is not prominently visible in any of the other viewpoints considered in the evaluation of impacts to scenic resources. Therefore, impacts to views of scenic resources would be slightly reduced but similar overall to the less than significant impacts of the proposed project.

Similar to the proposed project, the Reduced Residential Alternative would not be located near any eligible or designated State Scenic Highways, and therefore would not impact any scenic resources. Similar to the proposed project, the Reduced Residential Alternative would include regulations built into the PD district, would conform with the design review process, and therefore would not conflict with the visual quality-related policies and programs set forth in the San Rafael General Plan. The Reduced Residential Alternative would introduce slightly less lighting to the project site compared to the proposed project because it would include lower scale development at the southwest corner of the site; therefore, the less than significant impacts related to light and glare would be slightly reduced. Similarly, increased shadows would be slightly reduced due to the lower buildings heights on the Residential 1 parcel on the site. Therefore, similar to the proposed project, impacts to visual resources would be **less than significant**.

5.3.2.4 Cultural Resources

The Reduced Residential Alternative would result in redevelopment of the project site similar to the proposed project, including the same amount of demolition activity and ground disturbance. Similar to the proposed project, implementation of this alternative would not result in any impacts to historic architectural resources because none are present on the site. The Reduced Residential Alternative would include the same development footprint as the proposed project, and therefore would result in the same less than significant impacts to the Terra Linda Valley Neighborhood (which does qualify as a historic resource under CEQA) as the proposed project. Similar to the proposed

project, the Reduced Residential Alternative would have the potential to impact archaeological deposits and resources due to the generally level topography and presence of a drainage to South Fork Creek. Implementation of Mitigation Measures CUL-1a through CUL-1c would be required to reduce construction-period impacts to archaeological resources. Finally, similar to the proposed project, the Reduced Residential Alternative would be required to comply with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98. Therefore, similar to the proposed project, impacts to cultural resources would be **less than significant with mitigation**.

5.3.2.5 Tribal Cultural Resources

The Reduced Residential Alternative would result in redevelopment of the project site similar to the proposed project, including the same amount of ground disturbance. Similar to the proposed project, the Reduced Residential Alternative would have the potential to impact tribal cultural resources because it would be located on the same site and include ground-disturbing activities. Implementation of Mitigation Measures TCR-1a and TCR-1b would be required to reduce construction-period impacts to tribal cultural resources. Therefore, similar to the proposed project, impacts to tribal cultural resources would be **less than significant with mitigation**.

5.3.2.6 Geology and Soils

The Reduced Residential Alternative would result in redevelopment of the project site similar to the proposed project, including the same amount of demolition activity and ground disturbance, and a similar level of new construction in the same locations. Similar to the proposed project, the Reduced Residential Alternative would not result in any impacts associated with proximity to an Alquist-Priolo Earthquake Fault Zone. The Reduced Residential Alternative would be required to be designed and constructed in accordance with the recommendations of the Geotechnical Investigation prepared for the proposed project and the CBC, and therefore would have the same less than significant impacts related to ground shaking. The Reduced Residential Alternative would be located on the same site as the proposed project, and therefore would result in the same less than significant impacts related to liquefaction, seismic settlement, lateral spreading, and landslides. However, similar to the proposed project, the Reduced Residential Alternative would also be susceptible to impacts from expansive and unstable soils. Implementation of Mitigation Measures GEO-1 and GEO-2 would be required. Additionally, similar to the proposed project, the Reduced Residential Alternative could result in impacts to previously undiscovered paleontological resources. Implementation of Mitigation Measure GEO-3 would be required. Therefore, similar to the proposed project, impacts to geology and soils would be **less than significant with mitigation**.

5.3.2.7 Hydrology and Water Quality

The Reduced Residential Alternative would result in redevelopment of the project site similar to the proposed project, including the same amount of demolition activity and ground disturbance, and a similar level of new construction in the same locations. Similar to the proposed project, the Reduced Residential Alternative would require dewatering activities and could contribute to the migration of contaminated groundwater to previously uncontaminated areas, and implementation of Mitigation Measure HYD-1 would be required. The Reduced Residential Alternative would include new residential uses on the project site and could interfere with sustainable management of groundwater in the Santa Rosa Plain Subbasin due to increased water demand, although the

number of residential units would be reduced compared to the proposed project. However, implementation of Mitigation Measure HYD-2 would still be required because Sonoma Water's 2020 Urban Water Management Plan does not assume any residential uses on the project site. Similar to the proposed project, the Reduced Residential Alternative would be required to treat stormwater runoff consistent with the Small MS4 Permit, which would ensure less than significant impacts related to erosion and siltation. Finally, the stormwater infrastructure included in the Reduced Residential Alternative would be the same as the proposed project, and therefore could result in flooding on the project site and surrounding roadways. Therefore, implementation of Mitigation Measure HYD-3 would be required. Therefore, similar to the proposed project, impacts to hydrology and water quality would be **less than significant with mitigation**.

5.3.2.8 Hazards and Hazardous Materials

The Reduced Residential Alternative would result in redevelopment of the project site similar to the proposed project, including the same amount of demolition activity and ground disturbance, and a similar level of new construction in the same locations. Therefore, the Reduced Residential Alternative would result in the same less than significant impacts related to the routine use of hazardous materials. The Reduced Residential Alternative would include demolition of existing buildings; therefore, Mitigation Measure HAZ-1 would be required to reduce potential impacts related to the release of hazardous materials into the environment. The Reduced Residential Alternative would be located on the same site as the proposed project and would result in the same potentially significant impacts related to subsurface hazardous materials. Therefore, Mitigation Measure HAZ-2 would be required. Similar to the proposed project, the Reduced Residential Alternative would not result in any impacts related to hazardous material use or release near schools, sites listed pursuant to Government Code Section 65962.5, or aviation hazards. Finally, the Reduced Residential Alternative would slightly reduce the less than significant impacts related to emergency response because it would include fewer residential uses on the project site. Therefore, similar to the proposed project, impacts to hazards and hazardous materials would be **less than significant with mitigation**.

5.3.2.9 Transportation

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units than full buildout of the proposed project. The Reduced Residential Alternative would generate vehicle trips to and from the project site during construction, similar to the proposed project. However, the Reduced Residential Alternative would generate fewer vehicle trips associated with residential uses because the Reduced Residential Alternative would develop fewer residential units than the proposed project. The overall commercial square footage would be the same as the proposed project and would be reduced compared to existing conditions.

Due to the different mix of unit types and reduction in total units, trip generation for the Reduced Residential Alternative would be altered compared to the proposed project. Using the same trip generation rates at project buildout as presented in Table 4.9.D in Section 4.9, Transportation, the 125 townhome units would generate 900 daily trips, 60 AM peak-hour trips, and 71 PM peak-hour trips. The 1,234 apartment units would generate 5,602 daily trips, 457 AM peak-hour trips, and 481 PM peak-hour trips. At buildout, the Reduced Residential Alternative would therefore result in

18,243 daily trips, 783 AM peak-hour trips, and 1,564 PM peak-hour trips, not including deductions for internal trip capture or pass-by trips. The proposed project, at buildout, would generate an average of 18,441 trips per day, including 802 during the AM peak hour and 1,583 during the PM peak hour without deductions. With or without the same deductions for internal and pass-by trips, the Reduced Residential Alternative would result in a similar number of vehicle trips as the proposed project, with an overall reduction of 198 daily trips and 19 AM and PM peak-hour trips. Overall, this reduction would be negligible and, similar to the proposed project, the Reduced Residential Alternative would not conflict with applicable transportation-related plans, policies, and ordinances, design hazards, and emergency access.

As discussed in Section 4.9, Transportation, the VMT impacts associated with the proposed project would be below the regional average and would be less than significant. With the reduced residential population on the project site compared to the proposed project, total VMT would slightly decrease compared to the proposed project, and this impact would continue to be less than significant.

Implementation of Mitigation Measure TRA-1, ensuring that a minimum of 216 feet of sight distance would be available for drivers at the driveway 280 feet north of Northgate Drive/Thorndale Drive, would also likely be required to reduce impacts associated with transportation hazards. With implementation of Mitigation Measure TRA-1, similar to the proposed project, impacts to transportation would be **less than significant with mitigation**.

5.3.2.10 Air Quality

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units. However, overall construction activity would be similar. Grading activities would be similar compared to the proposed project; therefore, pollutant and odor concentrations would be similar and dust, exhaust, and organic emissions would also be generated related to construction, similar to the proposed project. Implementation of Mitigation Measure AIR-2 would be required to reduce construction-period air quality impacts. The Reduced Residential Alternative would also generate ROGs and NO_X emissions during Phase 1 construction in excess of thresholds established by the BAAQMD, and implementation of Mitigation Measures AIR-3a and AIR-3b would be required to reduce this impact to a less than significant level. Finally, similar to the proposed project, this alternative would result in an increased intensity of uses on the site compared to existing conditions, and area source emissions would be increased similar to the proposed project. Daily operational energy and mobile source emissions would also be similar to the proposed project, though slightly reduced due to the decrease in the number of vehicle trips. Overall, impacts related to Clean Air Plan implementation would be the same compared to the proposed project and would also be less than significant with implementation of Mitigation Measures AIR-2, AIR-3, and AIR-3b. In addition, health risks to on-site Phase 1 resident sensitive receptors would be the same under this alternative; therefore, Mitigation Measure AIR-4 would be required. Therefore, similar to the proposed project, impacts to air quality would be **less than significant with mitigation**.

5.3.2.11 Greenhouse Gas Emissions

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units. Construction activities would be similar to the proposed project; therefore, associated construction-period GHG emissions would also be similar as compared to the proposed project and would remain less than significant.

Operation-period emissions associated with the proposed project would occur, similar to the proposed project. Similar to the proposed project, implementation of Mitigation Measure GHG-1 would be required to ensure that natural gas fire pits are not included in the project design, and for the same reasons as the proposed project, prohibition of natural gas in commercial kitchens would be infeasible. Therefore, the Reduced Residential Alternative would conflict with the BAAQMD's thresholds established for the purpose of reducing GHG emissions and would result in the generation of GHG emissions that would have a significant impact on the environment. Similar to the proposed project, impacts related to GHG emissions would therefore be **significant and unavoidable**.

5.3.2.12 Noise

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units. Similar to the proposed project, there also would be no impact related to aircraft-related noise. The Reduced Residential Alternative would slightly reduce the number of vehicle trips generated by the proposed project due to the reduction in residential units; therefore, the overall impact associated with vehicle trips to and from the project site would also decrease compared to existing conditions and slightly more so than the proposed project. Increases in roadway traffic noise would therefore continue to be less than significant under this alternative. Similarly, exposure of off-site sensitive receptors to construction-period noise would still occur under this alternative because Residential Parcels 2 and 3 would still be constructed in proximity to nearby sensitive land uses, and this construction activity would exceed established thresholds (refer to Tables 4.12.G and 4.12.H in Section 4.12, Noise). Therefore, implementation of Mitigation Measure NOI-1, requiring the installation of construction-period sound barriers, would continue to be required to reduce exposure of noise sensitive land uses to construction noise. Similar to the proposed project, because a new mix of land uses and sensitive receptors would be introduced to the site under the Reduced Residential Alternative, the impact to on-site residential land uses would remain, although may be slightly reduced due to the decreased building heights, and Mitigation Measure NOI-2 would be required. However, the ability of this measure to achieve a less than significant noise impact cannot be determined. Therefore, similar to the proposed project, impacts related to noise would be **significant and unavoidable**.

5.3.2.13 Public Services and Recreation

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project but with fewer residential units. The Reduced Residential Alternative would generate demand for public services and recreation facilities; however, this demand would be slightly less when compared to the proposed project

because the Reduced Residential Alternative would develop fewer residential units and therefore result in a reduced increase in population on the site compared to the proposed project. Therefore, similar to the proposed project, impacts related to public services and recreation would be **less than significant**.

5.3.2.14 Utilities and Service Systems

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units. The Reduced Residential Alternative would generate demand for utilities and service systems; however, this demand would be less when compared to the proposed project because the Reduced Residential Alternative would develop fewer residential units and therefore result in a reduced increase in population on the site compared to the proposed project.

Although implementation of the Reduced Residential Alternative would decrease overall demand on utilities and service systems compared to the proposed project, the increase in wastewater generation at the project site would still require the existing 12-inch-diameter Terra Linda Trunk Sewer line downstream of the project site be upsized to 15 inches in diameter in coordination with the Las Gallinas Valley Sanitation District. According to Section 4.14, Utilities and Service Systems, the existing 12-inch-diameter sewer line could accommodate approximately 384 units with no modifications. However, this is not sufficient to accommodate implementation of Phase 1 of the Reduced Residential Alternative, which includes development of up to 859 residential units. To address the capacity deficiency in this portion of the Terra Linda Trunk Sewer and allow for additional development, the 12-inch-diameter sewer line would need to be up-sized. With implementation of Mitigation Measure UTL-1, requiring improvements to the surrounding sewer system infrastructure, impacts related to utilities and service systems would be **less than significant with mitigation**, similar to the proposed project.

5.3.2.15 Energy

The Reduced Residential Alternative would result in redevelopment of the project site with commercial and residential uses, similar to the proposed project, but with fewer residential units. Construction activities would be similar to the proposed project. Therefore, associated energy usage would be the same or similar as compared to the proposed project. The Reduced Residential Alternative would use energy during operation; however, this usage would be less when compared to the proposed project because the Reduced Residential Alternative would develop fewer residential units.

Similar to the proposed project, implementation of the Reduced Residential Alternative would use renewable energy on site as determined to be feasible and would not result in wasteful, inefficient, or unnecessary consumption of energy resources, including electricity, natural gas, or petroleum, during construction or operation. In addition, because the Reduced Residential alternative would comply with and exceed the existing energy standards and regulations, similar to the proposed project, implementation would not conflict with energy standards and regulations. Therefore, similar to the proposed project, impacts related to energy would be **less than significant**.

5.4 ALTERNATIVES CONSIDERED BUT NOT SELECTED FOR FURTHER ANALYSIS

During the Notice of Preparation (NOP) comment period, the City received verbal and written suggestions for the identification and evaluation of alternatives to the proposed project (see Appendix A of this EIR). The following provides a description of various potential alternatives that were identified and considered, and the reasons why they were ultimately not selected for further evaluation in this EIR.

- **Off-Site Locations:** An alternative location was not considered for analysis because the project sponsor does not own or would not feasibly otherwise be able to gain control of a suitable vacant site within the region. In addition, an off-site location that could accommodate the density and mix of uses proposed for the site is not available within San Rafael. An alternative location located outside of this area would fail to meet several objectives of the project, including several objectives that relate directly to planned redevelopment of the Northgate Mall site and development of a site that is located within a Priority Development Area. It should also be noted that the project site is an urban infill site with existing infrastructure in close proximity to existing transit. If the proposed project were relocated to a different site that is not as well served by infrastructure and transit, impacts related to transportation, air quality, and GHG emissions (primarily related to VMT) could be greater than those identified in this EIR for the proposed project. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

- **All Residential Use:** An all residential alternative or increased residential alternative with or without additional affordable units or a different mix of housing types with a greater number of bedrooms was considered. The project site has a land use designation of Community Commercial Mixed Use, which allows for 21.8 to 43.6 units per net acre; therefore, at 44.76 acres, the project site could be developed with between 976 and 1,952 residential units under the existing land use and zoning regulations. However, such an alternative would not achieve the desired intent of the Community Commercial Mixed Use designation because the intent is to provide for a mix of uses on the site, including general retail and service uses, restaurants, automobile sales and service uses, hotels and motels, and other commercial activities. Residential projects are also permitted but are not desired as the sole use for the site as identified in the General Plan. Additionally, at 1,952 residential units on the site and no commercial uses, with a similar mix of townhomes (6.4 percent, or 125) and apartment (93.6 percent or 1,827) units as the proposed project, a total of approximately 9,195 daily vehicle trips would be generated, which is below the total number of trips generated by the proposed project; however, since the site would not include a mix of uses in the same location, internal and pass-by reductions would not occur and average trip lengths for project residents would likely increase, which could result in impacts related to VMT that would not occur with the proposed project.

  In addition, a different mix of unit types or increased number of affordable units would not have a material effect on reducing any identified environmental impacts of the project. Furthermore, such an alternative would not meet many of the basic project objectives. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

- **Expanded Town Square:** An alternative that would include a more expansive central green space on the project site with a corresponding reduction in surface parking either through additional parking structures or underground parking was not considered for analysis because such an alternative would not substantially reduce any of the identified impacts of the proposed project and could result in additional impacts related to site circulation and additional excavation and construction activity, resulting in increased air quality, GHG, noise, and energy impacts. Additional impacts related to hazardous materials and hydrology and water quality could also result with the deeper excavations into potentially contaminated soils. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above analysis, the No Project Alternative would have the fewest impacts and would be the environmentally superior alternative. Under CEQA, if the No Project Alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives (*State CEQA Guidelines* Section 15126.6(e)(2)). While the No Project alternative would be environmentally superior in the technical sense in that contribution to the aforementioned impacts would not occur, it would also fail to achieve any of the project's objectives.

As discussed above and shown in Table 5.A below, the Reduced Residential Alternative would slightly reduce some of the potentially significant impacts of the proposed project through reduced construction and operational building intensities, including an overall reduction in the number of vehicle trips generated to and from the site, although none of the significant unavoidable project impacts would be avoided, and all project mitigation measures would still be required. The project objectives would also be largely met, although to a lesser extent than the proposed project, and the Reduced Residential Alternative would provide 63 fewer residential units than the proposed project, slightly reducing its contribution to alleviating the City's household deficit. Due to its slight reductions in some environmental impacts, the Reduced Residential Alternative is considered the environmentally superior alternative.

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
4.1 Land Use and Planning				
Threshold 4.1.1: The proposed project would not eliminate or reduce existing levels of connectivity within San Rafael or other communities.	LTS	NI	~LTS	~LTS
Threshold 4.1.2: The proposed project would not result in a conflict related to the provisions of applicable planning documents, due to the significant impacts identified in the EIR.	LTS	LTS	~LTS	~LTS
4.2 Population and Housing				
Threshold 4.2.1: The proposed project would not induce substantial unplanned population growth, either directly or indirectly.	LTS	NI	<LTS	<LTS
Threshold 4.2.2: The proposed project would not directly or indirectly displace existing housing or people such that construction of replacement housing would be needed elsewhere and in turn result in one or more significant environmental effects.	LTS	NI	>LTS	~LTS
4.3 Visual Resources				
Threshold 4.3.1: The proposed project would not substantially or completely block public views of identified scenic resources.	LTS	NI	<LTS	~LTS
Threshold 4.3.2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.	LTS	NI	~LTS	~LTS
Threshold 4.3.3: The proposed project would not conflict with applicable zoning and other regulations governing scenic quality.	LTS	NI	~LTS	~LTS
Threshold 4.3.4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	NI	<LTS	~LTS
Threshold 4.3.5: The proposed project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly-accessible open spaces.	LTS	NI	<LTS	~LTS
4.4 Cultural Resources				
Threshold 4.4.1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5.	LTS	NI	~LTS	~LTS
Threshold 4.4.2: Project ground disturbance has the potential to unearth significant archaeological deposits or resources, resulting in a potential substantial adverse change on historical resources, as defined in State CEQA Guidelines Section 15064.5 (Impact CUL-1).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.4.3: The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.	LTS	NI	~LTS	~LTS

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
4.5 Tribal Cultural Resources				
Threshold 4.5.1: Project ground disturbance has the potential to disturb, damage, or degrade either a tribal cultural resource, or the contextual setting of such a resource, resulting in a substantial loss of the resource's cultural value as determined in consultation with the Federated Indians of Graton Rancheria (Impact TCR-1).	S LTS/M	NI	~S LTS/M	~S LTS/M
4.6 Geology and Soils				
Threshold 4.6.1: The proposed project would not directly or indirectly cause a substantial risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zones Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	NI	NI	~NI	~NI
Threshold 4.6.2: The proposed project would not directly or indirectly cause a substantial risk of loss, injury, or death involving the construction of new buildings for human occupancy or other infrastructure or structures that would not comply with the most recently adopted California Building Code seismic standards applicable to ground shaking events.	LTS	NI	~LTS	~LTS
Threshold 4.6.3: Proposed and existing improvements could be damaged due to expansive soil conditions (Impact GEO-1).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.6.4: Placement of new loads on the project site, vibration-generating construction activities, and excavation and dewatering activities could result in subsidence, settlement, or differential settlement that could adversely affect the proposed and existing structures and other improvements (Impact GEO-2).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.6.5: The project could directly or indirectly destroy a unique paleontological resource or site (Impact GEO-3).	S LTS/M	NI	~S LTS/M	~S LTS/M
4.7 Hydrology and Water Quality				
Threshold 4.7.1: Project dewatering could result in the migration of potential off-site groundwater contamination towards the project site (Impact HYD-1).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.7.2: The increase in water supply demand due to the project could potentially interfere with sustainable management of groundwater in the Santa Rosa Plain Subbasin (Impact HYD-2).	S LTS/M	NI	~S LTS/M	~S LTS/M

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
Threshold 4.7.3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in manner which would result in substantial erosion or siltation on- or off-site.	LTS	NI	~LTS	~LTS
Threshold 4.7.4: The 100-year storm runoff from the project site could exceed the capacity of proposed stormwater infrastructure and result in flooding on the project site and surrounding roadways (Impact HYD-3).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.7.5: The proposed project would not release any on-site pollutants into the environment as the result of flooding, tsunami, or seiche.	LTS	NI	~LTS	~LTS
4.8 Hazards and Hazardous Materials				
Threshold 4.8.1: The proposed project would not create a substantial hazard to the public or the environment due to the release of hazardous materials into the environment as a result of inherent risks involved in the transport, use, disposal, or management of hazardous or potentially hazardous materials by project-related construction and operation activities.	LTS	NI	~LTS	~LTS
Threshold 4.8.2: Demolition or renovation activities may result in the release of polychlorinated biphenyls (PCBs) into the environment (Impact HAZ-1).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.8.3: Subsurface hazardous materials may be released into the environment during construction and operation of the project (Impact HAZ-2).	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.8.4: The proposed project would not create a public health hazard due to hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LTS	NI	~LTS	~LTS
Threshold 4.8.5: The proposed project would not create a significant hazard to the public or the environment as the result of locating the proposed project or related infrastructure on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	LTS	NI	~LTS	~LTS
Threshold 4.8.6: The proposed project would not permit development inconsistent with an adopted Comprehensive Airport Land Use Compatibility Plan and thereby result in a safety hazard or excessive noise for people residing or working in the project area due to aircraft operations.	LTS	NI	~LTS	~LTS

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
Threshold 4.8.7: The proposed project would not impact implementation of emergency-related activities.	LTS	NI	~LTS	~LTS
4.9 Transportation				
Threshold 4.9.1: The proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	NI	~LTS	~LTS
Threshold 4.9.2: The proposed project would not conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b).	LTS	NI	~LTS	~LTS
Threshold 4.9.3: Implementation of the proposed project would worsen an existing hazardous geometric design feature at the driveway 280 feet north of Northgate Drive/Thorndale Drive.	S LTS/M	NI	~S LTS/M	~S LTS/M
Threshold 4.9.4: The proposed project would not result in inadequate emergency access.	LTS	NI	~LTS	~LTS
4.10 Air Quality				
Threshold 4.10.1: The proposed project could conflict with implementation of the San Francisco Bay Area Clean Air Plan (Impact AIR-1).	S LTS/M	NI	<LTS	<LTS
Threshold 4.10.2: Construction of the proposed project would generate fugitive dust ($PM_{2.5}$ and PM_{10}) emissions (Impact AIR-2).	S LTS/M	NI	<LTS	<LTS
Threshold 4.10.2: Construction of Phase 1 would generate ROG and NO_X emissions in excess of thresholds established by the BAAQMD, resulting in a violation of air quality standards (Impact AIR-3).	S LTS/M	NI	<LTS	<LTS
Threshold 4.10.3: Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations through exceeding the carcinogenic inhalation health risk threshold (Impact AIR-4).	S LTS/M	NI	<LTS	<LTS
Threshold 4.10.4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	NI	~LTS	~LTS
4.11 Greenhouse Gas Emissions				
Threshold 4.10.1: The proposed project would generate GHG emissions, either directly or indirectly, that would have a significant effect on the environment (Impact GHG-1).	SU	NI	<SU	~SU
Threshold 4.10.2: The proposed project would conflict with a State or local GHG reduction plan, policy, or regulation (Impact GHG-2).	SU	NI	<SU	~SU

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
4.12 Noise				
Threshold 4.12.1: Construction of the proposed project would result in a significant short-term increase in ambient noise levels in the vicinity of the project site in excess of the thresholds established in the City of San Rafael General Plan or Noise Ordinance (Impact NOI-1).	S LTS/M	NI	S <LTS/M	S <LTS/M
Threshold 4.12.2: Operation period noise levels would exceed the City's land use compatibility thresholds for future on-site sensitive receptors (Impact NOI-2).	SU	NI	<SU	<SU
Threshold 4.12.3: The proposed project would not expose people residing or working in the area to excessive noise levels associated with proximity to a private airport or public use airport or within and airport land use plan.	LTS	NI	~LTS	~LTS
4.13 Public Services and Recreation				
Threshold 4.13.1: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: fire protection; police protection; schools; parks; or, other public facilities.	LTS	NI	<LTS	<LTS
Threshold 4.13.2: The proposed project would not result in an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	NI	<LTS	<LTS
Threshold 4.13.3: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that would have an adverse physical effect on the environment.	LTS	NI	~LTS	~LTS
4.14 Utilities and Service Systems				
Threshold 4.14.1: The proposed project would generate wastewater that would exceed the capacity of the existing sewer infrastructure that serves the project site (Impact UTL-1).	S LTS/M	NI	S ~~<LTS/M~~	S ~~<LTS/M~~
Threshold 4.14.2: The proposed project would not exceed the City of San Rafael's currently available water supplies and result in insufficient water supplies to serve the proposed project in addition to existing and planned future development within the City during normal, dry, and multiple dry years over the next 20-years, including buildout of the project.	LTS	NI	<LTS	~LTS

Table 5.A: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Reduced Development Alternative (Without/With Mitigation)	Reduced Residential Alternative (Without/With Mitigation)
Threshold 4.14.3: The proposed project would not result in insufficient wastewater treatment capacity to serve the project and reasonably foreseeable development over the next 20-years, including buildout of the project.	LTS	NI	<LTS	<LTS
Threshold 4.14.4: The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	NI	<LTS	<LTS
Threshold 4.14.5: The proposed project would not conflict with federal, State, and local management and reduction statutes and regulations related to solid waste.	LTS	NI	<LTS	<LTS
4.15 Energy				
Threshold 4.15.1: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	NI	<LTS	<LTS
Threshold 4.15.2: The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	LTS	NI	<LTS	<LTS

Source: Compiled by LSA (2023).

~ = Similar to proposed project
< = Incrementally less than proposed project
> = Incrementally greater than proposed project
LTS = Less than significant
LTS/M = Less than significant with mitigation
NI = No Impact
S = Significant
SU = Significant unavoidable
SU/M = Significant unavoidable with mitigation

6.0 OTHER CEQA CONSIDERATIONS

As required by the California Environmental Quality Act (CEQA), this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts, significant irreversible changes, effects found not to be significant, and significant unavoidable effects.

6.1 GROWTH-INDUCING IMPACTS

This section summarizes the project's potential growth-inducing impacts on the surrounding community. A project is typically considered growth inducing: if it would foster economic or population growth or the construction of additional housing; if it would remove obstacles to population growth or tax community services to the extent that the construction of new facilities would be necessary; or if it would encourage or facilitate other activities that cause significant environmental effects.[1] Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The proposed project consists of the redevelopment of an infill site (consisting of the existing mall) through demolition, renovation, and new construction with a mix of commercial and residential land uses. As described in Section 4.2, Population and Housing, it is estimated that the approximately 501,940 square feet of commercial uses in Phase 1 would generate an estimated maximum of 1,434 daily employees on the site, for a decrease of approximately 756 employees compared to the full occupancy of the project site that could occur under existing conditions. In light of the net reduction to approximately 217,520 square feet of commercial space associated with Phase 2, it is estimated that the proposed uses at buildout would result in a decrease in the estimated maximum number of daily employees on the site, from 1,434 to 621 employees, a reduction of 813 employees compared to Phase 1 and 1,569 compared to full occupancy of the project site. Based on the average household size of 2.49 persons per household as conservatively identified in the San Rafael 2040 General Plan, the proposed project would result in an increase to San Rafael's population by approximately 2,295 residents with completion of Phase 1 in approximately 2025 and an additional 1,246 residents with completion of Phase 2, for a total of 3,541 residents at project buildout in approximately 2040.[2] As described in Section 4.1, Land Use and Planning, the proposed project fits within the overall development assumptions envisioned under the General Plan and assumed in the General Plan Final EIR, as well as the specific density requirements for the project site. In addition, Phase 1 of the proposed project is specifically identified in the 2023-2031 Housing Element, which was certified in May 2023 and did not change any of the overall buildout figures from the 2040 General Plan. Therefore, the proposed project would not result in substantial direct or indirect population growth beyond that planned for the city, county, or region, and instead would contribute

1 *State CEQA Guidelines*. 2023. Section 15126.2(d).

2 922 residential units x 2.49 persons per household = 2,295
1,422 residential units x 2.49 persons per household = 3,541

to the needed and planned for supply of housing, including affordable housing through the provision of up to 147 below market rate units (approximately 10.5 percent of the total residential units).

Additionally, the proposed project would consist of redevelopment of an existing urbanized site and would not require the extension of utilities or roads into undeveloped areas or directly or indirectly lead to the development of greenfield sites. Although the existing 12-inch diameter Terra Linda Trunk Sewer line downstream of the project site would be required to be upsized to 15-inches to serve the proposed project (Mitigation Measure UTL-1), approximately 58 percent of the new capacity would accommodate the proposed project development, and the remainder would accommodate existing development within the project area. The increased capacity would not facilitate new, unplanned population growth in the project area. Due to the location of the project site and the presence of existing uses on and in the vicinity of the site, development of the proposed project would not induce unplanned growth in the area. Therefore, the growth that would occur as a result of the proposed project would not be substantial or adverse.

6.2 SIGNIFICANT IRREVERSIBLE CHANGES

An Environmental Impact Report (EIR) must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable resources, and secondary growth-inducing impacts that commit future generations to similar uses. CEQA suggests that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. Each of these three categories is further detailed below.

6.2.1 Changes in Land Use Which Commit Future Generations

The project site is currently developed with the existing Northgate Mall, and the proposed project would redevelop the site with residential and new commercial uses. The proposed project would allow for redevelopment of the project site with 1,422 residential units and 217,520 square feet of commercial space. Because the project would occur on an infill site in which a variety of land uses may be considered under the General Plan and Municipal Code and because, in the future, the site could be rezoned (in which case at the end of the useful life of the project, the use could change), the proposed project would not commit future generations to a significant change in land use.

6.2.2 Irreversible Damage from Environmental Accidents

No significant environmental damage (e.g., accidental spills or explosion of a hazardous material) is anticipated with implementation of the proposed project. Compliance with federal, State, and local regulations, and implementation of Mitigation Measures HAZ-1 and HAZ-2, as outlined in Section 4.8, Hazards and Hazardous Materials of this EIR, would ensure that this potential impact would be reduced to a less than significant level. As such, no irreversible changes (e.g., those that might result from construction of a large-scale mining project, a hydroelectric dam project, or other industrial project) would result from development of the proposed project.

6.2.3 Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. As discussed in Section 6.3.1 below, the State

Department of Conservation designates the site as "Urban and Built-Up Land," and the site is located in an urbanized area of San Rafael. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the project site does not contain known mineral resources and does not serve as a mining reserve; thus, development of the proposed project would not result in the loss of access to mining reserves. Please refer to Sections 6.3.1 and 6.3.3 below for a discussion of impacts related to agricultural and mining resources, respectively.

Construction of the proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would also occur during the operational period of the proposed project. As discussed in Section 4.15, Energy, of this EIR, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Additionally, the proposed project would not require the construction of major new lines to deliver energy or natural gas as these services are already provided in the area. Therefore, the proposed project would not result in a significant impact associated with the consumption of nonrenewable resources.

6.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental topics analyzed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, represent those topics that generated the greatest potential controversy and expectation of adverse impacts associated with development of the proposed project. The following topics are not addressed in this EIR because impacts related to these topics either would not occur or would be less than significant with implementation of applicable mitigation measures. A summary of the conclusions provided in the Initial Study analysis for each of the topics scoped out of the EIR is provided below.

6.3.1 Agricultural and Forestry Resources

The project site and vicinity are located within an urban area in San Rafael. The project site is currently zoned as General Commercial and is classified as "Urban and Built-Up Land" by the State Department of Conservation.[3] The project site is not used for agricultural production and it does not support forestry resources. Therefore, there would be **no impact** to agricultural and forestry resources.

6.3.2 Biological Resources

The project site and vicinity are located within an urban area in San Rafael. The project site does not provide suitable habitat for any special-status plant species due to prior disturbance at the project site and the resulting lack of native plant communities (e.g., wetlands, salt marsh, woodlands, and grasslands). The proposed project would result in the removal of mature trees and vacant buildings that could provide habitat for special-status species, including the white-tailed kite (*Elanus leucurus*)

[3] California Department of Conservation (DOC). 2022. Division of Land Use Resource Protection. California Important Farmland Finder. Website: maps.conservation.ca.gov/dlrp/ciff (accessed October 2023).

and pallid bay (*Antrozous pallidus*) as well as other roosting bats.[4] Compliance with regulatory requirements imposed by the California Department of Fish and Wildlife (CDFW) and the federal Migratory Bird Treaty Act (MBTA) to protect nesting birds and roosting bats would be required as conditions of approval for the proposed project. Implementation of these measures, which are standard construction measures that are applicable to all construction projects that have the potential to impact nesting birds and bats species, would ensure that these impacts would not occur.

Regulatory Compliance Measure 1: **Nesting Bird Surveys.** If construction, grading, or other project-related construction activities are scheduled during the nesting season, February 1 to September 1, a focused survey for active nests shall be conducted by a qualified biologist within 7 days prior to the beginning of project-related activities. If an active nest is found, the qualified biologist shall delineate a no-work-zone buffer distance around the nest that is site and species specific using high visibility fencing or flagging. The buffer distance shall be specified to protect the bird's normal behavior and prevent nesting failure or abandonment. No work shall occur within the no-work zone until the nest is no longer active as determined by a qualified biologist. If a lapse in project-related work of 7 days or longer occurs, another focused survey shall occur before project work is reinitiated.

Regulatory Compliance Measure 2: **Roosting Bat Habitat Assessment and Surveys.** Prior to any building demolition or tree removal, a qualified biologist shall conduct a habitat assessment for bats. A qualified bat biologist shall have at least 2 years of experience conducting bat surveys that resulted in detections for relevant species, such as pallid bat, with verified project names, dates, and references, and experience with relevant equipment used to conduct bat surveys. The habitat assessment shall be conducted no more than 15 days prior to tree removal or building demolition and shall include a visual inspection of potential roosting features (e.g., cavities, crevices in wood and bark, exfoliating bark, suitable canopy for foliage roosting species, attics, eaves). If suitable habitat trees or buildings are found, or bats are observed, Regulatory Compliance Measures BIO-2b and BIO-2c shall be implemented.

[4] Dudek. 2022. *Results of the Biological Resources Assessment Conducted for the Northgate Town Square Project, City of San Rafael, Marin County, California.* May 25.

Regulatory Compliance Measure 3: **Roosting Bat Building Exclusion Plan.** If the qualified biologist identifies buildings scheduled for demolition as potential bat habitat, then building demolition shall not occur until either (1) a qualified biologist conducts night emergence surveys or completes visual examination of roost features that establishes absence of roosting bats, or (2) an appropriate bat eviction and exclusion plan has been approved by the City of San Rafael and implemented. The City of San Rafael shall seek the California Department of Fish and Wildlife's input on the exclusion plan. The plan shall: (a) recognize maternity and winter roosting season as vulnerable seasons for bats and require exclusion outside of these times, generally between March 1 and April 15 or September 1 and October 15; (b) identify suitable areas for excluded bats to disperse or require installation of appropriate dispersal habitat, such as artificial bat houses, prior to project activities and include an associated management and monitoring plan with implementation and funding; and (c) include a requirement that exclusion materials shall be re-evaluated for effectiveness by the qualified biologist up to 2 weeks prior to building demolition.

Regulatory Compliance Measure 4: **Roosting Bat Tree Protections.** If the qualified biologist identifies potential bat habitat trees, then tree trimming and tree removal shall not proceed unless the following occurs: (1) a qualified biologist conducts night emergence surveys or completes visual examination of roost features that establish absence of roosting bats, or (2) tree trimming and tree removal occur only during seasonal periods of bat activity, from approximately March 1 through April 15 and September 1 through October 15, and tree removal occurs using the two-step removal process. Two-step tree removal shall be conducted over two consecutive days. The first day (in the afternoon), under the direct supervision and instruction by a qualified biologist with experience conducting two-step tree removal, limbs and branches shall be removed by a tree cutter using chainsaws only; limbs with cavities, crevices or deep bark fissures shall be avoided. The second day the entire tree shall be removed.

The project site does not contain any riparian habitat, wetlands, or wildlife movement corridors, and is not located within the boundaries of any adopted Habitat Conservation Plan. The City of San Rafael Municipal Code Chapter 11.12 protects trees planted in, upon, or along public streets, sidewalks, and walkways. The proposed project would result in the removal of 463 ornamental

trees; however, none of these trees would be street trees. The proposed project would also include the planting of at least 683 new trees on the project site. Therefore, the proposed project would not conflict with any local policies protecting biological resources. Given the above, there would be **no impact** on biological resources as a result of project implementation.

6.3.3 Mineral Resources

The project site is located within an urban area on a developed site. The San Rafael Rock Quarry, which is located approximately 4.75 miles east of the project site, is the only mineral resource area located within San Rafael.[5] Therefore, the proposed project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State or the loss of availability of a locally important mineral resource recovery site. There would be **no impact**.

6.3.4 Wildfire

The project site and adjacent areas are not located in a Very High Fire Hazard Severity Zone (VHFHSZ) as mapped by the California Department of Forestry and Fire Protection (CAL FIRE), and the project site is not located within any State Responsibility Areas (SRAs) for fire service.[6] The project site is a generally level infill site in an urban area, and is bound by existing development on all sides. Therefore, the proposed project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The project would also not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death related to wildland fires. There would be **no impact**.

6.4 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

Even with implementation of the mitigation measures recommended in this EIR, the proposed project would result in the following significant unavoidable impacts:

- **Impact GHG-1:** The proposed project would not incorporate all of the Bay Area Air Quality Management District's (BAAQMD) recommended design thresholds to reduce greenhouse gas (GHG) emissions; therefore, operation of the proposed project would generate GHG emissions that would have a significant effect on the environment.

- **Impact GHG-2:** As the proposed project would generate GHG emissions that would have a significant effect on the environment, the proposed project would conflict with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

- **Impact NOI-2:** Phase 2 operation period noise levels would exceed the City's land use compatibility thresholds for future on-site sensitive receptors.

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5 City of San Rafael. 2021. *San Rafael General Plan 2040.* August 2.

6 California Department of Forestry and Fire Protection (CAL FIRE). 2023. *Marin County State Responsibility Area Fire Hazard Severity Zones*. June 15.

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7.2 REFERENCES

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