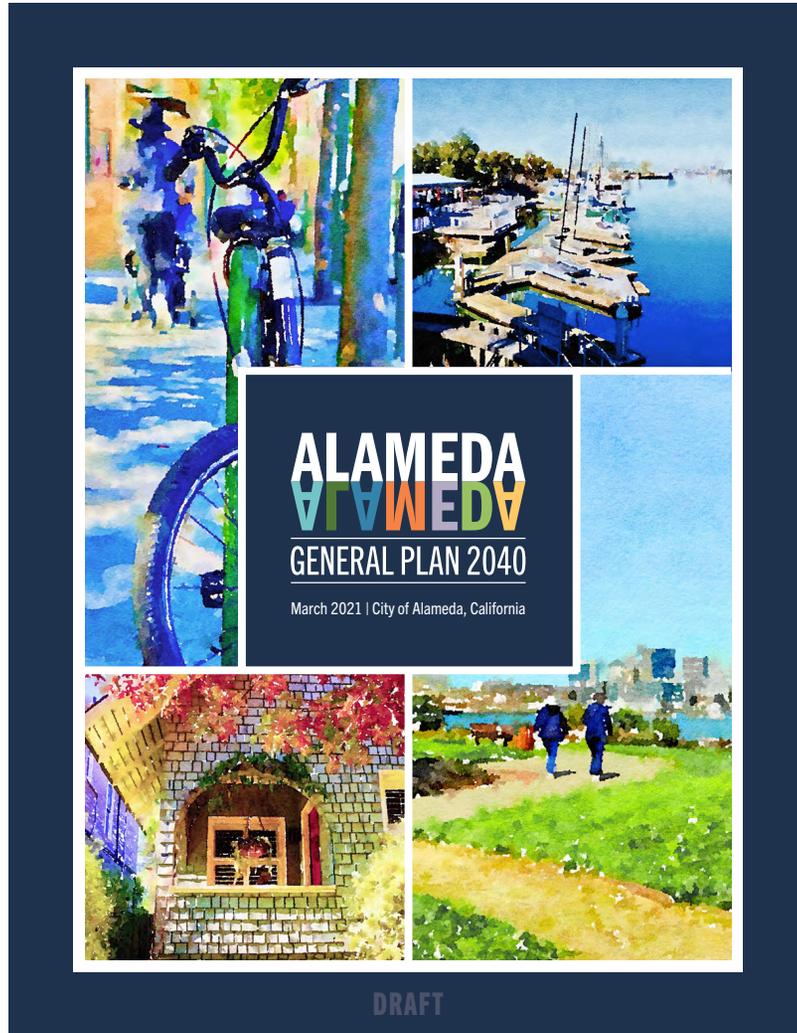


CITY OF ALAMEDA



Alameda General Plan 2040

DRAFT ENVIRONMENTAL IMPACT REPORT
SCH # 2021030563

VOLUME I

MAY 2021





Burrowing Owl on the Nature Reserve at Alameda Point
Credit: Richard Bangert, Alameda Point Environmental Report

Alameda General Plan 2040

Draft Environmental Impact Report

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LIST OF ACRONYMS USED IN THIS EIR

AADT	annual average daily traffic
AAPS	Alameda Architectural Preservation Society
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACBM	asbestos-containing building materials
ACCWP	Alameda County Clean Water Program
ACDEH	Alameda County Department of Environmental Health
ACE	Altamont Corridor Express
ACFCWCD	Alameda County Flood Control and Water Conservation District
ACI	Alameda County Industries
AC Transit	Alameda-Contra Costa Transit District
ACWMA	Alameda County Waste Management Authority
A.D.	<i>Anno Domini</i> (year of the Lord)
ADA	Americans With Disabilities Act
ADT	average daily traffic
AF	acre-feet
AFD	Alameda Fire Department
AFY	acre-feet per year
AFMA	Alternative Motor Fuels Act
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMC	Alameda Municipal Code
AMIP	Asset Management Implementation Plan
AMMs	avoidance and minimization measures
AMP	Alameda Municipal Power
AO	Administrative Order
APD	Alameda Police Department
ARPD	Alameda Recreation and Park Department

ARRA	American Recovery and Reinvestment Act
ART	Adapting to Rising Tides
AST	above-ground storage tank
ATCMs	airborne toxic control measures
AUSD	Alameda Unified School District
AVA	average vibration amplitude
AWIA	America’s Water Infrastructure Act
AWLHOA	Alameda West Lagoon Homeowners' Association
B	beneficial
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BARC	Bay Area Regional Collaborative
BART	Bay Area Rapid Transit
BAT	Best Available Technology Economically Achievable
BCDC	San Francisco Bay Conservation and Development Commission
BCT	Best Conventional Pollutant Control Technology
BEQ	Bachelor Enlisted Men’s Quarters
BFFP	State Board of Forestry and Fire Protection
BMPs	best management practices
BO	Biological Opinion
BOQ	Bachelor Officers Quarters
B.C.	Before Christ
BTM	behind the meter
BUILD	Building Initiative for Low-Emissions Development
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CA-ESFs	California Emergency Support Functions
CAFE	Corporate Average Fuel Economy
CalARP	California Accidental Release Prevention
Cal EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal OES	California Office of Emergency Services

Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CARP	Climate Action and Resiliency Plan
CAT	Cross Alameda Trail
CBC	California Building Code
CBO	Chief Building Official
CBSC	California Building Standards Code
CC	Climate Action and Conservation Element
CCAA	California Clean Air Act
CCC	Central California Coast
CCMP	Comprehensive Conservation and Management Plan
CCR	California Code of Regulations
CCTV	closed-circuit television
CCWD	Contra Costa Water District
C&D	construction and demolition
CD	Consent Decree
CDFW	California Department of Fish and Wildlife
CDO	Cease and Desist Order
CEC	California Energy Commission
CEMP	Comprehensive Emergency Management Plan
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERS	California Environmental Reporting System
CERT	Community Emergency Response Teams
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CH ₄	methane

CHRIS	California Historical Resources Information System
CIP	Capital Improvement Program
CIRT	Critical Incident Response Team
CIWMB	California Integrated Waste Management Board
CMP	congestion management program
CNDDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CNPR	California Rare Plant Ranking system
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
COE	U.S. Army Corps of Engineers
COG	Council of Governments
CP	California Protected
CPUC	California Public Utilities Commission
CPR/AED	cardiopulmonary resuscitation and automated external defibrillator
CRHR	California Register of Historic Resources
CSA	Cooperative Service Agreement
CSA	California Special Animals List
CSC	California Species of Special Concern
CSI	California Solar Initiative
CT	California Threatened
CTC	Alameda County Transportation Commission
CTP	Alameda Countywide Transportation Plan
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CWA	Clean Water Act
CWL	California Watch List
dB	decibel
dBA	A-weighted decibel
DBH	diameter at breast height

DC	direct current
DDT	dichloro-diphenyl-trichloroethane
DEIR	Draft Environmental Impact Report
DERs	distributed energy resources
DHS	California Department of Health Services
DMA	Disaster Mitigation Act
DMG	Division of Mines and Geology
DMP	Drought Management Program
DOC	California Department of Conservation
DOE	U.S. Department of Energy
DOF	California Department of Finance
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPS	Distinct Population Segment
DPS	drought planning sequence
DSRSD	Dublin San Ramon Services District
DSTS	Davis Street Transfer Station
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
E	equal
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EFH	Essential Fish Habitat
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EPAct05	Energy Policy Act of 2005
EPAct92	Energy Policy Act of 1992

EPCA	Energy Policy and Conservation Act
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Emergency Response Plan
ESA	Endangered Species Act (federal)
ESU	Evolutionarily Significant Unit
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FAR	floor area ratio
FBFM	Flood Boundary and Floodway Map
FE	Federal Endangered
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Map
FISCA	Fleet and Industrial Supply Center and Alameda Navy Supply Center Annex
FMCSA	Federal Motor Carrier Safety Administration
FMMP	Farmland Mapping and Monitoring Program
FMP	Fisheries Management Plan
FPT	Federal Proposed Threatened
FRA	Federal Railroad Administration
FRO	First Responder Operational
FRWA	Freeport Regional Water Authority
FRWP	Freeport Regional Water Project
FT	Federal Threatened
GAMA	Groundwater Ambient Monitoring and Assessment
GHG	greenhouse gas
GI	green infrastructure
GIP	Green Infrastructure Plan
GIS	geographic information system
GMP	Groundwater Management Plan
gpd	gallons per day

GSA	Groundwater Sustainability Agency
GSP	gross state product
GSP	Groundwater Sustainability Plan
GWh	gigawatt-hours
GWP	global warming potential
HA	Hydrologic Area
HAB	Alameda Historical Advisory Board
HAPs	hazardous air pollutants
HAPC	Habitat Areas of Particular Concern
HAZMAT	hazardous materials
HCP	Habitat Conservation Plan
HCD	California Department of Housing and Community Development
HFCs	hydrofluorocarbons
HM	hydromodification management
HMBP	Hazardous Materials Business Plan
HMIS	Hazardous Material Inventory Statement
HMMP	Hazardous Materials Management Plan
HMTA	Hazardous Materials Transportation Act
HR	Hydrologic Region
HRA	Health Risk Assessment
HS	Health and Safety Element
HSWAs	Federal Hazardous and Solid Waste Amendments
HU	Hydrologic Unit
HVAC	heating/ventilation/air conditioning
HWD	Hayward Executive Airport
ICS	Incident Command System
IEPR	Integrated Energy Policy Report
I/I	infiltration and inflow
IGP	Industrial General Permit
IOU	investor-owned utility
IPCC	International Panel on Climate Change
IPM	integrated pest management
IRP	Integrated Resource Plan

IRWM	Integrated Regional Water Management
IS	Initial Study
ISO	Insurance Services Office
IWMP	Integrated Waste Management Plan
K9	canine
kW	kilowatt
kWh	kilowatt-hour
LBP	lead-based paint
L _{dn}	average day–night 24–hour average sound level
L _{eq}	equivalent sound level
L _{max}	maximum sound level
LEA	Local Enforcement Agency
LED	light-emitting diode
LEED	Leadership in Energy and Environmental Design
LEPC	Local Emergency Planning Committee
LEV	low-emissions vehicle
LHMP	Local Hazard Mitigation Plan
LID	low-impact development
LOS	Level of Service
LQG	large-quantity generator
LRA	Local Responsibility Area
LRP	Legally Responsible Person
LTMS	Long-Term Management Strategy
LTRC	Long Term Renewal Contract
LTS	less than significant
LU	Land Use Element
LUDs	Land-Use Unit Demands
LUST	Leaking Underground Storage Tank
LVK	Livermore Municipal Airport
m	meter
M	(earthquake) magnitude
MARAD	U.S. Maritime Administration Ready Reserve Fleet
MAROPS	Marine Operations

MBTA	Migratory Bird Treaty Act
MCLs	maximum contaminant levels
MCO	Marsh Crust Ordinance
ME	Mobility Element
MEP	maximum extent practicable
MFA	Mitigation Fee Act
mgd	million gallons per day
mg/kg	milligrams per kilogram
MHHW	Mean Higher High Water
MHW	Mean High Water
MIP	Master Infrastructure Plan
MLD	Most Likely Descendant
MLW	Mean Low Water
MLLW	Mean Lower Low Water
MMcf/d	million cubic feet of gas per day
MMPA	Marine Mammal Protection Act
MMRP	Mitigation Monitoring and Reporting Program
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MRF	Materials Recovery Facility
MRP	Municipal Regional Permit
MRZ	Mineral Resource Zone
msl	(feet above) mean sea level
MS4	Municipal Separate Storm Sewer System
MSDS	Materials Safety Data Sheet
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MTBE	methyl tert-butyl ether
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
MW	megawatts

MWELo	Model Water-Efficient Landscape Ordinance
MWh	megawatt-hours
NAAQS	National Ambient Air Quality Standards
NACTO	National Association of City Transportation Officials
NAHC	Native American Heritage Commission
NALs	numeric action levels
NAS	Naval Air Station
NCPA	Northern California Power Agency
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NGO	non-governmental organization
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NI	No Impact
NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
N ₂ O	nitrous oxide
NOA	naturally-occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOD	Notice of Determination
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRC	National Response Corporation
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSHP	New Solar Homes Partnership
NSWDs	Non-Stormwater Waste Discharges

NWP	Nationwide Permit
NWT	Northwest Territories
OA	Operational Area
OAK	Oakland International Airport
OEHHA	California Office of Environmental Health and Hazard Assessment
OGWDW	Office of Ground Water and Drinking Water
OPC	Ocean Protection Council
OPEC	Organization of Petroleum Exporting Countries
OPR	State Office of Planning and Research
OSFM	Office of the State Fire Marshal
OSHA	Occupation Safety and Health Administration
PAB	Police Administration Building
PAC	polycyclic aromatic compound
PAHs	polycyclic aromatic hydrocarbons
PCA	Priority Conservation Area
PCBs	polychlorinated biphenyls
PDA	Priority Development Area
PEL	Permissible Exposure Limit
PERC/PCE	tetrachloroethene
PFCs	perfluorocarbons
PG&E	Pacific Gas & Electric Company
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIIRA	Petroleum Industry Information Reporting Act
PM	particulate matter
PM _{2.5}	particulate matter (2.5 microns or less in diameter)
PM ₁₀	particulate matter (10 microns or less in diameter)
PMP	Predator Management Plan
POCs	pollutants of concern
POTWs	publicly-owned treatment works
PPA	power purchase agreement
PPC	Public Protection Classification
PPV	peak particle velocity
PRC	Public Resources Code

PSD	Prevention of Significant Deterioration
PSL	private sewer lateral
PUB	Alameda Public Utilities Board
PV	photovoltaic
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
R&D	research and development
RACM	regulated asbestos-containing material
RAMP	Ralph Appezatto Memorial Parkway
RCRA	Resources Conservation and Recovery Act
RHA	Rivers and Harbors Act
RHNA	Regional Housing Needs Allocation
RM	Richter magnitude
RMP	Risk Management Plan
RMPP	Risk Management and Prevention Program
ROGs	reactive organic gases
ROWD	Report On Waste Discharge
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
S	significant
SamTrans	San Mateo County Transit District
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCH	State Clearinghouse
SCP	Safer Consumer Products Program
SCS	Sustainable Communities Strategy
SCWA	Sacramento County Water Agency
SDMP	Storm Drain Master Plan
SDWA	Safe Drinking Water Act
SEBP	South East Bay Plain
SEBPGB	South East Bay Plain Groundwater Basin

SEMS	Standardized Emergency Management System
SEP	State of California Emergency Plan
SERC	State Emergency Response Commission
SF ₆	sulfur hexafluoride
SFEP	San Francisco Estuary Partnership
SFP	School Facility Program
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLCP	short-lived climate pollutant
SLIC	Spills, Leaks, Investigations and Cleanup
SMARTS	Stormwater Multi-Application Report Tracking System
SMP	Sewer Master Plan
SO	Stipulated Order
SO ₂	sulfur dioxide
SolTrans	Solano County Transit
SQG	small-quantity generator
SR	State Route
SRRE	Source Reduction and Recycling Element
SSC	Species of Special Concern
SSMP	Sewer System Management Plan
SSO	sanitary sewer overflow
SU	significant and unavoidable
SVA	social vulnerability assessment
SVOCs	semi-volatile organic compounds
SWAT	Special Weapons and Tactics
SWIS	Solid Waste Information System
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T&Cs	terms and conditions
TACs	toxic air contaminants
TAF	thousand acre-feet

TBA	tert-butyl alcohol
TCE	trichloroethene
TCR	Tribal cultural resource
TDM	Transportation Demand Management
TDS	total dissolved solids
TECH	Technology and Equipment for Clean Heating
TSDf	treatment, storage, and disposal facility
TMDLs	Total Maximum Daily Loads
TNW	traditional navigable water
TPA	transit priority area
TPD	tons per day
TRUs	transport refrigeration units
TSCA	Toxic Substances Control Act
TSS	Total System Storage
TWLs	Total Water Levels
µg/m ³	micrograms per cubic meter
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
US EPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
U.S.C.	United States Code
USCG	United States Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UV	ultraviolet
UWMP	Urban Water Management Plan
VA	Veterans Administration (federal)
VDECS	Verified Diesel Emission Control Strategies
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOAD	Voluntary Organizations Active in Disasters

VOCs	volatile organic compounds
WDRs	Waste Discharge Requirements
WestCAT	Western Contra Costa Transit Authority
WETA	Water Emergency Transit Authority
WGCEP	Working Group on California Earthquake Probabilities
WMI	Waste Management, Inc.
WMP	Waste Management Plan
WQAS	Water Quality Attainment Strategies
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WTP	Water Treatment Plant
WWFs	Wet Weather Facilities
WWTP	Wastewater Treatment Plant
ZEV	zero-emissions vehicle
ZNE	zero net energy
ZWIP	Zero Waste Implementation Plan

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1. INTRODUCTION

1.1 The Intent of CEQA

This document is a Draft Environmental Impact Report (DEIR) prepared in accordance with the California Environmental Quality Act (CEQA) on the proposed *2040 Alameda General Plan* for the City of Alameda, California. CEQA requires that an Environmental Impact Report (EIR) be prepared for any project to be undertaken or approved by a local or State agency that may have a significant effect on the environment.¹ The Lead Agency for this project is the City of Alameda. This DEIR is intended to provide sufficient environmental documentation to allow the City Council to make an informed decision concerning the environmental impacts that could result from adoption of the proposed *2040 Alameda General Plan*.

The basic purposes of CEQA are to:

- inform governmental decision-makers and the public about the potential significant environmental effects of proposed activities;
- identify the ways that environmental damage can be avoided or significantly reduced;
- prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.²

This EIR is a “Program” EIR as defined in Section 15168 of the *CEQA Guidelines*. A Program EIR may be prepared for a series of actions that can be characterized as one large project and are related either:

- 1) geographically;
- 2) as logical parts in the chain of contemplated actions;
- 3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or

¹ California Public Resources Code, Section 21000.

² *CEQA Guidelines*, Section 15002.

- 4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

The City of Alameda expects to utilize this EIR with later General Plan amendments, the 2022 Housing Element, Zoning Ordinance amendments to update General Plan policy, and/or development proposals in conformance with the General Plan to determine whether additional environmental review is required. Some activities may be fully within the scope of the project covered by this EIR, and no subsequent environmental review would be required. In cases where supplemental environmental analysis may be required, it is anticipated that evaluation of some future projects may tier from this Program EIR, as provided in Section 15152 of the *CEQA Guidelines*, thereby reducing the extent of additional environmental analysis that is necessary.

This document may also be reviewed and used by Responsible Agencies that grant other permits or otherwise have jurisdiction over activities undertaken in accordance with the General Plan, including the U.S. Army Corps of Engineers (COE), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Regional Water Quality Control Board (RWQCB). In addition, this EIR may be used by the City of Alameda as a reference document or to assist in the planning of other development projects within the City.

1.2 Background and Scope of This EIR

California Government Code Section 65300 requires each California city and county to prepare and adopt a comprehensive, long-term general plan for the physical development of the city or county. The general plan may be adopted as a single document or as a group of documents relating to subjects or geographic segments of the planning area.

The City of Alameda adopted its current General Plan in 1991, and although there have been amendments to the General Plan in subsequent years, this is the first time it has been comprehensively updated. The *2040 Alameda General Plan* is a statement of goals, objectives, policies, and actions to guide and manage change to the physical, environmental, economic, and social conditions in Alameda, California. The General Plan has been prepared to comply with the requirements of California Government Code Section 65300.

In accordance with Section 15082 of the *CEQA Guidelines*, a Notice of Preparation (NOP) for the proposed *2040 Alameda General Plan* project was published by the City on July 20, 2020, notifying regulatory agencies and members of the public of its intention to prepare an EIR in compliance with CEQA, and soliciting their input on the scope of issues to be evaluated in the EIR. (The *CEQA Guidelines* serve as the official set of administrative CEQA rules, to which the courts generally defer in their rulings on CEQA litigation.) The NOP is reproduced in Appendix A.

The NOP concluded that the project may have a significant effect on the environment, requiring preparation of an Environmental Impact Report. The publication and transmittal of the NOP to the State Clearinghouse in the Office of Planning and Research initiated a 30-day period for State and

local agencies and concerned members of the public to provide input into the scope of the EIR. Two letters/emails were submitted by local residents, organizations, or businesses, and three letters were submitted by public agencies, all of which are presented in Appendix A. Public input provided in written responses to the NOP was used to expand and refine the scope of effects to be studied in the EIR.

As required by Section 15143 of the *CEQA Guidelines*, this Draft EIR focuses on expected significant or potentially significant environmental effects. It also identifies less-than-significant impacts, and provides a rationale for why they were not found to be significant.

When a lead agency determines that an EIR will be required for a proposed project, preparation of an Initial Study (IS) is not required.³ Accordingly, while a formal IS was not prepared for the proposed *2040 Alameda General Plan*, the information and analysis that is part of the standard IS Environmental Checklist provided in Appendix G of the *CEQA Guidelines* has been included in this EIR, either in one of the dedicated environmental resource chapters or in Chapter 19, which addresses other environmental issues not evaluated in one of the dedicated chapters.

Based on the analysis presented in Chapter 19, it was determined that the project would have less-than-significant impacts on the following environmental resources:

- Agriculture and Forestry Resources
- Mineral Resources
- Wildfire

The issues that are evaluated in greater depth in this EIR include potential impacts to:

- Land Use and Planning
- Traffic and Transportation
- Air Quality
- Greenhouse Gases
- Noise
- Biological Resources
- Cultural Resources
- Tribal Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Visual Quality

³ California Resources Agency, Office of Planning and Research, *CEQA Guidelines*, Section 15063(a).

- Population and Housing
- Public Services
- Parks and Recreation
- Energy
- Utilities and Service Systems

Each of these resource areas is addressed in a dedicated chapter.

1.3 The CEQA Process

A Notice of Completion (NOC) will be filed with the State Clearinghouse upon completion and publication of this Draft EIR (DEIR). The DEIR will be circulated for review and comment by public agencies and members of the public for a period of 45 days. A public hearing will be held during the review period to solicit verbal comments.

All written comments on the DEIR should be addressed to:

Andrew Thomas, Planning Director
City of Alameda
Planning, Building & Transportation Department
2263 Santa Clara Avenue, Room 190
Alameda, CA 94501-4477
ATHOMAS@alamedaca.gov

Comments should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments must be received during the review period to be included in the Final EIR.

Following the public review period, oral comments made at the public hearing on the DEIR and written comments submitted to the City that address environmental concerns will be addressed in a Comments and Responses document, which will be made available to the public. That document will incorporate the DEIR, revised as appropriate in response to comments received, and will constitute the Final EIR (FEIR). The FEIR will include copies of written comments received on the DEIR during the review period, transcripts of verbal comments received at the public hearing, a list of each person and/or agency that commented on the DEIR, and the City's responses to the comments. A Mitigation Monitoring and Reporting Program (MMRP) also will be prepared to ensure the implementation of mitigation measures, if the project is approved and implemented.

After examining the FEIR, the Alameda City Council will determine whether to certify that (1) the FEIR is adequate and has been completed in compliance with CEQA, and (2) the information presented in the FEIR has been reviewed and considered prior to approval of the project. Certification of the EIR does not constitute project approval; rather, it is a necessary step that

precedes project approval. Typically, though not of necessity, the Lead Agency will make a decision on a project immediately after certifying the EIR. Also prior to project approval, the Lead Agency must prepare written findings for each significant environmental effect, mitigation measure, and alternative identified in the EIR, accompanied by a brief explanation of the rationale for each finding. The possible findings, which must be supported by substantial evidence in the administrative record, are:

- 1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the FEIR;
- 2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency; or
- 3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the FEIR.⁴

In cases where unavoidable significant impacts would occur, the Lead Agency must also prepare a Statement of Overriding Considerations, finding that specific economic, legal, social, technological, or other benefits outweigh the unavoidable adverse environmental effects of the project, and the unavoidable adverse environmental effects are therefore “acceptable.”

Within five working days after approval of the project, the Lead Agency must file a Notice of Determination (NOD) with the County Clerk (if the Lead Agency is a State agency, the NOD must be filed with the State Clearinghouse). The filing of this legal notice starts a 30-day statute of limitations on court challenges to the approval of the project under CEQA.

Mitigation measures adopted from the EIR must be fully enforceable through permit conditions or other mechanisms. A Mitigation Monitoring and Reporting Program must be adopted at the time of certification of the EIR to ensure their timely implementation. The City, Responsible Agencies, and/or Trustee Agencies will be assigned responsibility for approving, implementing, and monitoring the actual mitigation strategy.

⁴ CEQA Guidelines, Section 15091(a).

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2. SUMMARY

2.1 Proposed Project

This Draft Environmental Impact Report (DEIR) examines the potential environmental effects of the proposed *2040 Alameda General Plan* for the City of Alameda, California, prepared in accordance with State Planning Law. The General Plan is a statement of goals, objectives, policies, and actions to guide and manage change to the physical, environmental, economic, and social conditions in the City of Alameda, California.

The *Alameda General Plan 2040* is intended to align with and support the goals of *Plan Bay Area 2040*, which is the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the nine-county San Francisco Bay Area. The RTP/SCS Plan was completed in partnership with the Metropolitan Transportation Commission (MTC), Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), and the San Francisco Bay Conservation and Development Commission (BCDC).

The *Alameda General Plan 2040* is organized by chapters or “elements.” Each chapter or element addresses a different subject matter and identifies the community’s goals in respect to that subject matter while setting forth a series of policies, and in some cases, actions to achieve those goals. Cumulatively, the goals, policies, and actions in each element are intended to support and facilitate achievement of the following four broad themes, which are expanded on in Chapter 3, Project Description:

Environment: Protect the environment, respond to the climate crisis and meet regional responsibilities.

Access: Enhance mobility and accessibility on an island city.

Equity: Promote a healthy, equitable and inclusive city.

Character: Preserve and enhance Alameda’s distinctive character.

The Elements of the General Plan update include:

- Land Use + City Design Element
- Conservation + Climate Action Element
- Mobility Element

- Open Space + Parks Element
- Health + Safety Element

2.2 Project Impacts

All of the impacts analyzed in this EIR, including those considered to be less-than-significant, are summarized in Table 2-1 (presented at the end of this chapter). Mitigation measures have been identified to reduce all impacts of the project to a less-than-significant level. Since the General Plan is designed to protect the environment, reduce greenhouse gas emissions, and support the regional plans to protect the environment and address climate change, most of the environmental impacts that could result from implementation of the *Alameda General Plan 2040* would be less than significant, requiring no additional mitigation. Potentially significant impacts that would be reduced to a less-than-significant level through implementation of mitigation measures were identified in the areas of air quality, cultural resources, and geology and soils.

One significant and unavoidable impact was identified in the environmental review of the proposed General Plan, related to vehicle miles travelled. Although the average home-work vehicle miles traveled (VMT) per worker in Alameda is projected to decline by about 7 percent between 2020 and General Plan buildout in 2040 as the result of the Plan, and although the reduced home-work VMT per worker is less than the regional average, it would not reduce the home-work VMT per worker to 15 percent below the Bay Area Regional average. Although the General Plan includes a wide variety of policies to reduce home-work VMT, it is not possible to accurately measure the ultimate effect of those policies on citywide work-home VMT and ensure that Alameda's home-work VMT per worker will drop enough to be at least 15 percent below the Bay Area Regional average. Therefore, the impact has been conservatively assumed to be significant and unavoidable.

2.3 Areas of Concern

A Notice of Preparation (NOP) for the proposed *2040 Alameda General Plan* project was published by the City on July 20, 2020, notifying regulatory agencies and members of the public of its intention to prepare an EIR in compliance with CEQA, and soliciting their input on the scope of issues to be evaluated in the EIR. Six letters were received by the City in response to the NOP, two from members of the public and four from the following organizations: the Sierra Club, Port of Oakland, East Bay Municipal Utility District (EBMUD), and the Alameda Architectural Preservation Society. The issues of concern raised in the letters included:

- Impacts of sea level rise along Shoreline Drive on the south side of Alameda Island;
- Impacts of future residential and non-residential development;
- Impacts on historic buildings; and
- Compatibility of future land use development with Oakland International Airport and Port of Oakland facilities located on the Oakland Inner Harbor.

A second Notice of Preparation (NOP) for the proposed *2040 Alameda General Plan* project was published by the City on March 24, 2021, notifying regulatory agencies and members of the public of its intention to prepare an EIR in compliance with CEQA, and soliciting their input on the scope of issues to be evaluated in the EIR. Four letters were received by the City in response to the NOP, three from public agencies and one from a local organization. The comment letters were submitted by the California Department of Transportation (Caltrans), the California Native American Heritage Commission (NAHC), EBMUD (resubmitting their original comment letter), and the Alameda Architectural Preservation Society (AAPS). Aside from EBMUD's concerns, included above, the issues of concern raised in the letters included:

- Impacts from vehicle miles traveled (VMT) on the State's multi-modal transportation system, including effects on pedestrians, bicyclists, travelers with disabilities (including equitable access), and transit performance;
- Impacts on tribal cultural resources; and
- Potential for new development, redevelopment, and additions to conflict with or undermine the integrity of historic properties in Alameda.

2.4 Alternatives to the Proposed Project

CEQA requires an EIR to describe a range of reasonable alternatives to the proposed project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project. Evaluation of a "No-Project" alternative must also be included in the analysis. The following alternatives were evaluated in this EIR:

- No-Project Alternative
- Reduced-Density Alternative
- Environmentally Superior Alternative

These alternatives are described and evaluated in Chapter 21, Alternatives. Following is a brief description of the alternatives:

The No Project Alternative. In this alternative, the City of Alameda City Council does not adopt *Alameda General Plan 2040*, and the City of Alameda continues to be governed by the current General Plan, which was last comprehensively updated 30 years ago in 1991.

The Reduced-Density Alternative. In the Reduced-Density Alternative, *Alameda General Plan 2040* is amended to limit residential growth by 50 percent (approximately 5,000 units over 20 years) and to limit employment growth by 50 percent (approximately 5,000 new jobs added over 20 years).

The Environmentally Superior Alternative: In this alternative, *Alameda General Plan 2040* is amended to include a stronger commitment to protecting the environment and addressing global warming and climate change.

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
LAND USE AND PLANNING			
<u>Impact 4-1</u> Implementation of the proposed <i>Alameda General Plan 2040</i> would not physically divide an established community.	LTS	<u>Mitigation Measure 4-1</u> None required.	LTS
<u>Impact 4-2</u> Implementation of the proposed <i>Alameda General Plan 2040</i> would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	<u>Mitigation Measure 4-2</u> None required.	LTS
POPULATION AND HOUSING			
<u>Impact 5-1</u> Implementation of the proposed <i>Alameda General Plan 2040</i> would not induce substantial unplanned direct or indirect population growth.	LTS	<u>Mitigation Measure 5-1</u> None required.	LTS
<u>Impact 5-2</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> would not result in the displacement of substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	LTS	<u>Mitigation Measure 5-2</u> None required.	LTS

S = Significant, LTS = Less Than Significant, SU = Significant Unavoidable, NI = No Impact, B = Beneficial

**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
PUBLIC SERVICES			
<u>Impact 6-1</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> could result in increased calls for fire protection services, including emergency medical response, which could require the provision of 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.	LTS	<u>Mitigation Measure 6-1</u> None required.	LTS
<u>Impact 6-2</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> could result in increased calls for police protection services, which could require the provision of 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.	LTS	<u>Mitigation Measure 6-2</u> None required.	LTS
<u>Impact 6-3</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> could result in increased demand for school services, which could require the provision of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable	LTS	<u>Mitigation Measure 6-3</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
class sizes.			
<u>Impact 6-4</u> The increased population generated by future residential development allowed under the <i>Alameda General Plan 2040</i> could result in increased demand for library services, which could require the provision of new or physically altered library facilities, the construction of which could cause significant environmental impacts.	LTS	<u>Mitigation Measure 6-4</u> None required.	LTS
UTILITIES AND SERVICE SYSTEMS			
<u>Impact 7-1</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental impacts.	LTS	<u>Mitigation Measure 7-1</u> None required.	LTS
<u>Impact 7-2</u> There would be sufficient water supplies available to serve future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> during normal, dry and multiple dry years.	LTS	<u>Mitigation Measure 7-2</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
<u>Impact 7-3</u> Future residential, commercial, and industrial development allowed under the <i>Alameda General Plan 2040</i> would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	<u>Mitigation Measure 7-3</u> None required.	LTS
<u>Impact 7-4</u> The increased population generated by future residential development allowed under the <i>Alameda General Plan 2040</i> would not result in generation of 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, and would not conflict with federal, State, or local management and reduction statutes and regulations related to solid waste.	LTS	<u>Mitigation Measure 7-4</u> None required.	LTS
PARKS AND RECREATION			
<u>Impact 8-1</u> Population growth allowed under the <i>Alameda General Plan 2040</i> could result in increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility could occur or be accelerated.	NI	<u>Mitigation Measure 8-1</u> None required.	NI

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
<u>Impact 8-2</u> New development allowed under the <i>Alameda General Plan 2040</i> could include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.	LTS	<u>Mitigation Measure 8-2</u> None required.	LTS
BIOLOGICAL RESOURCES			
<u>Impact 9-1</u> Construction of new development allowed under the <i>Alameda General Plan 2040</i> could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW, USFWS, or NMFS.	LTS	<u>Mitigation Measure 9-1</u> None required.	LTS
<u>Impact 9-2</u> Future development consistent with the <i>Alameda General Plan 2040</i> could adversely affect sensitive natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS).	LTS	<u>Mitigation Measure 9-2</u> None required.	LTS
<u>Impact 9-3</u> Future development consistent with the <i>Alameda General Plan 2040</i> could adversely affect federally protected wetlands as defined by Section 404 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological	LTS	<u>Mitigation Measure 9-3</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
interruption, or other means.			
<u>Impact 9-4</u> Future development consistent with the <i>Alameda General Plan 2040</i> could interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	<u>Mitigation Measure 9-4</u> None required.	LTS
<u>Impact 9-5</u> Future development facilitated by the <i>Alameda General Plan 2040</i> could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	<u>Mitigation Measure 9-5</u> None required.	LTS
<u>Impact 9-6</u> Future development facilitated by the <i>Alameda General Plan 2040</i> could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.	LTS	<u>Mitigation Measure 9-6</u> None required.	LTS
TRANSPORTATION			
<u>Impact 10-1</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with a program, plan, ordinance, or policy	LTS	<u>Mitigation Measure 10-1</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
addressing the circulation system, including transit, roadway, and bicycle and pedestrian facilities.			
<u>Impact 10-2</u> The <i>Alameda General Plan 2040</i> would result in average household VMT per capita or commute VMT per worker that exceeds 15 percent below the average baseline rate for the Bay Area region.	SU	<u>Mitigation Measure 10-2</u> None feasible.	SU
<u>Impact 10-3</u> Implementation of the <i>Alameda General Plan 2040</i> would not substantially increase hazards due to a geometric design feature or incompatible land uses.	LTS	<u>Mitigation Measure 10-3</u> None required.	LTS
<u>Impact 10-4</u> Implementation of the <i>Alameda General Plan 2040</i> would not result in inadequate emergency access.	LTS	<u>Mitigation Measure 10-4</u> None required.	LTS
AIR QUALITY			
<u>Impact 11-1</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	<u>Mitigation Measure 11-1</u> None required.	LTS
<u>Impact 11-2</u> Construction of new development allowed under the <i>Alameda General Plan 2040</i> could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	S	<u>Mitigation Measure 11-2</u> BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects. Future discretionary projects within the City shall implement the following measures or equivalent, expanded, or modified measures based on project- and site-specific conditions: 1. All exposed surfaces (e.g., parking areas, staging	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		<p>areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.</p> <ol style="list-style-type: none"> 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-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 shall be prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. 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. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 8. A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 	

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.	
<p><u>Impact 11-3</u> Operation of new development allowed under the <i>Alameda General Plan 2040</i> would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.</p>	LTS	<p><u>Mitigation Measure 11-3</u> None required.</p>	LTS
<p><u>Impact 11-4</u> New development allowed under the <i>Alameda General Plan 2040</i> could expose sensitive receptors to substantial pollutant concentrations.</p>	S	<p><u>Mitigation Measure 11-4(a)</u> Future discretionary projects within the City that generate substantial toxic air contaminant (TAC) emissions (that are not regulated by the Bay Area Air Quality Management District (BAAQMD)) that would be located within 1,000 feet of sensitive receptors shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD. If the HRA shows that the incremental cancer risk, PM_{2.5} concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's project-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures are capable of reducing potential PM_{2.5} concentrations, cancer risks, and non-cancer risks to below BAAQMD's project-level significance thresholds. Projects that generate substantial TAC emissions that are not regulated by the BAAQMD include:</p>	LTS

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Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		<p>1. Construction activities (on a case-by-case basis) lasting greater than two months, taking into consideration the specific construction-related characteristics of the project and proximity to off-site receptors, as applicable.</p> <p>2. Facilities that include more than 100 truck trips per day, 40 trucks with transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week.</p> <p><u>Mitigation Measure 11-4(a)</u></p> <p>Future discretionary projects within the City that site sensitive receptors within 1,000 feet of existing major sources of toxic air contaminants (TACs) (e.g., permitted stationary sources, highways, freeways and roadways with over 10,000 annual average daily traffic (AADT)) shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the Bay Area Air Quality Management District (BAAQMD). If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's cumulative-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures (e.g., electrostatic filtering systems) are capable of reducing potential cancer and noncancer risks to below BAAQMD's significance thresholds.</p>	

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
<u>Impact 11-5</u> New development allowed under the <i>Alameda General Plan 2040</i> would not result in other emissions (such as those leading to odors) that could adversely affect a substantial number of people.	LTS	<u>Mitigation Measure 11-5</u> None required.	LTS
GREENHOUSE GASES			
<u>Impact 12-1</u> Implementation of the <i>Alameda General Plan 2040</i> would not generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment.	LTS	<u>Mitigation Measure 12-1</u> None required.	LTS
<u>Impact 12-2</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.	LTS	<u>Mitigation Measure 12-2</u> None required.	LTS
NOISE			
<u>Impact 13-1</u> Implementation of <i>Alameda General Plan 2040</i> could potentially generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	<u>Mitigation Measure 13-1</u> None required.	LTS
<u>Impact 13-2</u> Implementation of <i>Alameda General Plan 2040</i> could potentially result in the generation of excessive	LTS	<u>Mitigation Measure 13-2</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
groundborne vibration or groundborne noise levels.			
<u>Impact 13-3</u> Implementation of <i>Alameda General Plan 2040</i> could potentially expose people to excessive aircraft noise levels.	LTS	<u>Mitigation Measure 13-3</u> None required.	LTS
GEOLOGY AND SOILS			
<u>Impact 14-1</u> Construction and operation of new buildings and facilities allowed under the <i>Alameda General Plan 2040</i> would not directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death, from seismic ground failure, including liquefaction and fault rupture.	LTS	<u>Mitigation Measure 14-1</u> None required.	LTS
<u>Impact 14-2</u> New land uses allowed under the <i>Alameda General Plan 2040</i> would not result in substantial soil erosion or the loss of topsoil.	LTS	<u>Mitigation Measure 14-2</u> None required.	LTS
<u>Impact 14-3</u> New development allowed under the <i>Alameda General Plan 2040</i> could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	LTS	<u>Mitigation Measure 14-3</u> None required.	LTS
<u>Impact 14-4</u> New land uses allowed under the <i>Alameda General Plan 2040</i> could be located on expansive soil, creating substantial direct or indirect risks to life or property.	LTS	<u>Mitigation Measure 14-4</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
<p><u>Impact 14-5</u> New development allowed under the <i>Alameda General Plan 2040</i> would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.</p>	NI	<p><u>Mitigation Measure 14-5</u> None required.</p>	NI
<p><u>Impact 14-6</u> Construction of new development allowed under the <i>Alameda General Plan 2040</i> could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	S	<p><u>Mitigation Measure 14-6</u> Amend the General Plan to include the following new policy to be added to the Conservation and Climate Action Element: CC-__: Paleontological Resources. If any paleontological resources—such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions—are encountered during site grading or other construction activities, all ground disturbance within 100 feet of the find shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the scientific value of the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). Any further mitigation measures recommended by the paleontologist shall be implemented and construction shall not resume in the vicinity of the find until the paleontologist has authorized the resumption of work. Significant paleontological resources shall be salvaged and deposited in an accredited and permanent scientific institution, such as the University of California Museum of Paleontology (UCMP).</p>	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
HYDROLOGY AND WATER QUALITY			
<u>Impact 15-1</u> Construction and operation of new buildings and facilities allowed under the <i>Alameda General Plan 2040</i> would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	<u>Mitigation Measure 15-1</u> None required.	LTS
<u>Impact 15-2</u> New land uses allowed under the <i>Alameda General Plan 2040</i> would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	<u>Mitigation Measure 15-2</u> None required.	LTS
<u>Impact 15-3</u> New land uses allowed under the <i>Alameda General Plan 2040</i> would not substantially alter the existing drainage pattern on 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 result in substantial erosion or siltation on-or off-site.	LTS	<u>Mitigation Measure 15-3</u> None required.	LTS
<u>Impact 15-4</u> New land uses allowed under the <i>Alameda General Plan 2040</i> would not substantially alter the existing drainage pattern on 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 substantially increase the rate or amount of surface runoff in a manner	LTS	<u>Mitigation Measure 15-4</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
that would result in flooding on-or off-site, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.			
<u>Impact 15-5</u> New land uses allowed under the <i>Alameda General Plan 2040</i> would not substantially alter the existing drainage pattern on 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 impede or redirect flood flows.	LTS	<u>Mitigation Measure 15-5</u> None required.	LTS
<u>Impact 15-6</u> Future development allowed under the <i>Alameda General Plan 2040</i> that is located within a flood hazard, tsunami, or seiche zone could risk the release of pollutants due to project inundation.	LTS	<u>Mitigation Measure 15-6</u> None required.	LTS
<u>Impact 15-7</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	<u>Mitigation Measure 15-7</u> None required.	LTS
HAZARDS AND HAZARDOUS MATERIALS			
<u>Impact 16-1</u> Site preparation activities associated with construction of new buildings and facilities allowed under the <i>Alameda General Plan 2040</i> could potentially expose construction workers and future site workers or residents to hazardous	LTS	<u>Mitigation Measure 16-1</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
concentrations of contaminants in the soils and groundwater at the site.			
<u>Impact 16-2</u> New land uses allowed under the <i>Alameda General Plan 2040</i> could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or through emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	<u>Mitigation Measure 16-2</u> None required.	LTS
<u>Impact 16-3</u> New land uses allowed under the <i>Alameda General Plan 2040</i> could be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment.	LTS	<u>Mitigation Measure 16-3</u> None required.	LTS
<u>Impact 16-4</u> Implementation of the <i>Alameda General Plan 2040</i> could result in a safety hazard or excessive noise for people living and working within the planning area of Oakland International Airport.	LTS	<u>Mitigation Measure 16-4</u> None required.	LTS
<u>Impact 16-5</u> Future development allowed under the <i>Alameda General Plan 2040</i> could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	<u>Mitigation Measure 15-5</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
<u>Impact 16-6</u> Future development allowed under the <i>Alameda General Plan 2040</i> would not expose people or structures, either directly or indirectly, to significant risk of loss, injury, or death involving wildland fires.	LTS	<u>Mitigation Measure 15-5</u> None required.	LTS
VISUAL QUALITY			
<u>Impact 17-1</u> Site preparation and construction of new buildings and facilities allowed under the <i>Alameda General Plan 2040</i> could disturb the existing landscape and would introduce heavy construction equipment into public and private views.	LTS	<u>Mitigation Measure 17-1</u> None required.	LTS
<u>Impact 17-2</u> Implementation of the <i>Alameda General Plan 2040</i> could adversely affect scenic vistas of San Francisco Bay and lands bordering the Bay, and could damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway.	LTS	<u>Mitigation Measure 17-2</u> None required.	LTS
<u>Impact 17-3</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with applicable zoning or other regulations governing scenic quality.	LTS	<u>Mitigation Measure 17-3</u> None required.	LTS
<u>Impact 17-4</u> Future development allowed under the <i>Alameda General Plan 2040</i> could create new sources of substantial new nighttime lighting that could adversely affect nighttime views in the area, including light pollution and skyglow.	LTS	<u>Mitigation Measure 17-4</u> None required.	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
CULTURAL RESOURCES			
<u>Impact 18-1</u> New development allowed under the <i>Alameda General Plan 2040</i> could damage or destroy historical resources.	LTS	<u>Mitigation Measure 18-1</u> None required.	LTS
<u>Impact 18-2</u> Construction of new development allowed under the <i>Alameda General Plan 2040</i> could involve subsurface disturbance that could potentially encounter and damage previously undiscovered buried historical or prehistoric archaeological resources, including tribal cultural resources.	S	<u>Mitigation Measure 18-2</u> a) During future development activities consistent with the <i>Alameda General Plan 2040</i> , in the event that prehistoric or historic cultural resources are encountered during excavation and/or grading of the project site, all activity within a 100-foot radius of the find shall be stopped, the Director of Planning shall be notified, and a qualified archaeologist shall examine the find. The archaeologist shall evaluate the significance of the encountered resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). (Construction personnel shall not collect any cultural resources.) Recommendations may include collection, recordation, and analysis of any significant cultural materials. The results of any additional archaeological effort required through the implementation of this measure and/or Mitigation Measure 10-3 shall be presented in a professional-quality report, to be submitted to the Alameda Director of Planning and the Northwest Information Center at Sonoma State University in Rohnert Park. b) During construction of a future development project, in the event that any cultural resources encountered	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		<p>during subsurface disturbance are determined to be historical resources as defined in Section 15064.5 of the CEQA Guidelines, the project sponsor shall implement the mitigation prescribed in Section 15126.4(b) of the CEQA Guidelines, which identifies preservation in place as the preferred manner of mitigating impacts to buried historic resources, while data recovery and documentation may be appropriate in some circumstances.</p> <p>c) If any Native American tribal representatives have requested consultation with the City of Alameda regarding general or specific development projects in Alameda, prior to issuance of a grading permit, the City shall notify the tribal representative(s) in writing about the proposed development, soliciting their input regarding the protection of tribal cultural resources (TCRs) during project construction. In accordance with California Public Resources Code Section 21080.3.2, the consultation may include discussion concerning the type of environmental review necessary, the significance of the TCRs, the significance of the project's impacts on the TCRs, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the California Native American tribe may recommended to the lead agency. Mitigation measures to reduce impacts to TCRs must be developed in coordination with the consulting tribal group. The preferred approach to mitigation is avoidance or preservation in place. If this is not feasible, the mitigation may take the form of interpretive treatment. Mitigation measures agreed to during tribal</p>	

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		consultation must then be carried over into the CEQA document and the associated Mitigation Monitoring and Reporting Program (MMRP) that must be adopted by the lead agency as part of the CEQA process. The consultation required by Senate Bill (SB) 18 and Assembly Bill (AB) 52 is considered complete when either the parties agree to measures to mitigate or avoid any significant impact on TCRs, or if one of the parties, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.	
<p><u>Impact 18-3</u> Construction of new development allowed under the <i>Alameda General Plan 2040</i> could involve subsurface disturbance that could potentially encounter and damage human remains, including those interred outside of formal cemeteries.</p>	S	<p><u>Mitigation Measure 18-3</u> a) In the event that any human remains are encountered during site disturbance at any future development site, all ground-disturbing work in the vicinity of the remains shall cease immediately until the coroner of Alameda County has been contacted, in accordance with Section 7050.5 of the California Health and Safety Code. Human remains may be an inhumation or cremation, and in any state of decomposition or skeletal completeness. If the coroner determines that the human remains are of Native American origin, the Native American Heritage Commission (NAHC) must be contacted within 24 hours, and the project sponsor shall comply with State laws relating to the disposition of Native American burials, regulated by the NAHC (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized 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 human remains until:</p>	LTS

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		<ul style="list-style-type: none"> • the coroner of the County has been informed and has determined that no investigation of the cause of death is required; and • if the remains are of Native American origin, the Coroner’ s Office will notify the NAHC of the find, which, in turn, will then appoint a “Most Likely Descendant” (MLD). The MLD, in consultation with the archaeological consultant and the project sponsor, will advise and help formulate an appropriate plan for treatment of the remains and any associated grave goods as provided in Public Resources Code Section 5097.98, which might include recordation, removal, and scientific study of the remains and any associated artifacts. After completion of analysis and preparation of the report of findings, the remains and associated grave goods shall be returned to the MLD for reburial, treatment, or disposal with appropriate dignity. <p>b) If the Native American Heritage Commission is unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission, the project sponsor shall reinter the human remains and any associated burial items with appropriate dignity on the property in a location not subject to further subsurface disturbance in the future. To protect this site, the project sponsor shall do one or more of the following:</p> <ul style="list-style-type: none"> • record the site with the NAHC and the Northwest Information Center at Sonoma State University in 	

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**Table SUM-1
Summary of Environmental Effects**

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		Rohnert Park, the regional repository of the California Historical Resources Information System (CHRIS); <ul style="list-style-type: none"> • establish an open space or conservation easement to protect the resource; and/or • record a document with Alameda County titled “Notice of Reinterment of Native American Remains” that shall include a legal description of the property, the name of the owner of the property, and the owner’s acknowledged signature. 	
ENERGY			
<u>Impact 19-1</u> Implementation of the <i>Alameda General Plan 2040</i> 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	<u>Mitigation Measure 19-1</u> None required.	LTS
<u>Impact 19-2</u> Implementation of the <i>Alameda General Plan 2040</i> would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	LTS	<u>Mitigation Measure 19-2</u> None required.	LTS

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3. PROJECT DESCRIPTION

3.1 Project Purpose

The proposed project to be evaluated in this environmental impact report is the *Alameda General Plan 2040*. The General Plan is a statement of goals, objectives, policies, and actions to guide and manage change to the physical, environmental, economic, and social conditions in the City of Alameda, California. Under State Planning Law, each city must maintain a comprehensive, internally consistent, up-to-date General Plan.

3.2 Project Objectives

The primary project objectives are to:

- Provide a comprehensive, internally consistent, up-to-date General Plan for the City of Alameda as required by State Planning Law.
- Establish consistency between the City of Alameda General Plan, City of Alameda Climate Action and Resiliency Plan (CARP), the 2023-2031 Regional Housing Needs Allocation, and the *Plan Bay Area*, the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the protection of the regional and global environment.
- Protect the environment, respond to the climate crisis and meet regional responsibilities.
- Enhance mobility and accessibility on an island city.
- Promote a healthy, equitable and inclusive city.
- Preserve and enhance Alameda’s distinctive character.

3.3 RELATIONSHIP TO *PLAN BAY AREA*

The *Alameda General Plan 2040* is intended to align with and support the goals of *Plan Bay Area*. On July 26, 2017 the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) adopted *Plan Bay Area 2040*, the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the San Francisco Bay Area. *Plan Bay Area* encompasses the nine counties and 101 cities that comprise the Bay Area. The RTP/SCS Plan was completed in partnership with the Bay Area’s other two regional government agencies, the Bay Area Air Quality Management District (BAAQMD) and the San Francisco Bay Conservation and Development Commission (BCDC).

The RTP/SCS is a long-range plan that specifies the strategies and investments needed to maintain, manage, and improve the region's transportation network, which includes improvements to bicycle and pedestrian facilities, local streets and roads, public transit systems, and highways. The RTP/SCS also calls for focused housing and job growth around high-quality transit corridors, particularly within areas identified by local jurisdictions as Priority Development Areas (PDAs). This land use strategy is anticipated to enhance mobility and economic growth by linking the location of housing and jobs with transit, thus offering a more efficient land use pattern around transit and a greater return on existing and planned transit investments.

Plan Bay Area describes how and where the Bay Area can accommodate 666,000 new projected households and 668,000 new jobs between 2015 and 2040. By 2040, the region is projected to grow to 4.7 million jobs and a population of 9.6 million, with 3.4 million households. Within Alameda County, the RTP/SCS projects 11,600 new jobs and 144,600 new housing units in by 2040. The Plan estimates that there will be 97,428 new residents in the City of Alameda by 2040, and that employment growth will result in 42,533 new jobs by that date.

Plan Bay Area complies with Senate Bill 375 (SB 375 Steinberg, 2008), the Sustainable Communities and Climate Protection Act of 2008, which requires California's 18 metropolitan planning organizations (including MTC) to develop an SCS as an element of the federally-mandated RTP. The SCS demonstrates how the region will meet its greenhouse gas (GHG) reduction targets established by the California Air Resources Board (CARB) through integrated land use, housing, and transportation planning. The SCS must meet or exceed a 7-percent reduction in per-capita carbon dioxide (CO₂) emissions from cars and light-duty trucks by 2020 and a 15-percent reduction by 2035 relative to 2005 levels. In the Bay Area, MTC and ABAG are jointly responsible for this planning effort.

MTC and ABAG certified a Program EIR for *Plan Bay Area* on July 26, 2017. The EIR focuses on the aggregate of the entire set of projects, programs, and growth projections included in the RTP/SCS, but does not address individual project impacts in detail. The EIR utilized a geographic information system (GIS) to digitally overlay the projected land use growth footprint (net new acres of potential development) associated with forecasted development and the transportation projects footprint assumed for the transportation projects over resource-related data. Results are presented, where relevant, for the region, for each county, and for the portions of the growth footprint specifically within the transit priority areas (TPAs). Where impacts are quantified through modeling or GIS analysis, they are reported at the regional (total), county, and/or TPA levels in tables and in the text. Information provided by county includes both incorporated and unincorporated areas in the county.

The *Plan Bay Area* Program EIR is intended to be used by local planning agencies to facilitate future CEQA streamlining opportunities for individual projects that qualify as transit priority projects, discussed below. It may also be used as the basis for cumulative analysis of specific project impacts, together with the projected growth in the region, and may also provide relevant information for incorporation into future housing elements of city and county general plans. All of the region's transportation-related agencies are expected to draw on the EIR, including the California

Department of Transportation (Caltrans), transportation authorities, and transit providers, such as San Francisco Municipal Railway (Muni), Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit District (AC Transit), San Mateo County Transit District (SamTrans), Caltrain, Solano County Transit (SolTrans), Western Contra Costa Transit Authority (WestCAT), Altamont Corridor Express (ACE), Water Emergency Transit Authority (WETA), and others. Mitigation measures identified in the *Plan Bay Area 2040* Program EIR may be incorporated into project-level environmental impact analyses by project sponsors or local agencies as appropriate to mitigate identified project-level impacts.

3.4 Project Description

The *Alameda General Plan 2040* is a comprehensive long-term plan for guiding future physical development within the City of Alameda. As shown on Figure 1, Alameda is centrally located in the San Francisco Bay region, within the urban corridor that extends down the east side of San Francisco Bay. The City of Alameda is in close proximity to the cities of Emeryville and Oakland to the north, San Leandro to the east, and Oakland to the south. It is one of 14 incorporated cities within Alameda County.

The *Alameda General Plan 2040* is organized by chapters or “elements.” Each chapter or element addresses a different subject matter and identifies the community’s goals in respect to that subject matter while setting forth a series of policies, and in some cases, actions to achieve those goals. Cumulatively, the goals, policies, and actions in each element are intended to support and facilitate achievement of four broad themes:

Environment: Protect the environment, respond to the climate crisis and meet regional responsibilities. Alameda’s island geography and environmental setting is very vulnerable to the impacts of climate change, including rising sea and groundwater levels, more severe droughts, wildfire smoke, and other impacts of climate change. General Plan 2040 policies support global, regional, and local efforts to reduce greenhouse gas emissions locally and regionally and prepare for climate change through smart growth development policies, strategic infrastructure improvements, and expanding and protecting natural conservation areas, marshes, and wetlands.

Access: Enhance mobility and accessibility on an island city. Living on an island in the center of a major metropolitan area contributes to the high quality of life in Alameda, while creating unique challenges and opportunities for mobility. General Plan 2040 policies support and enhance the improved mobility by making the shoreline more accessible, increasing transportation choices and options for Alameda residents, businesses and visitors, and eliminating severe injuries and fatalities on Alameda streets.

Equity: Promote a healthy, equitable and inclusive city. General Plan 2040 policies promote equity, environmental justice, and a high quality of life for everyone irrespective of income, race, gender, sexual orientation, cultural background or ability by recognizing and changing local policies, programs, ordinances, and practices that serve to perpetuate injustices suffered by under-served and underrepresented populations and proactively engaging these populations in all City decision making.

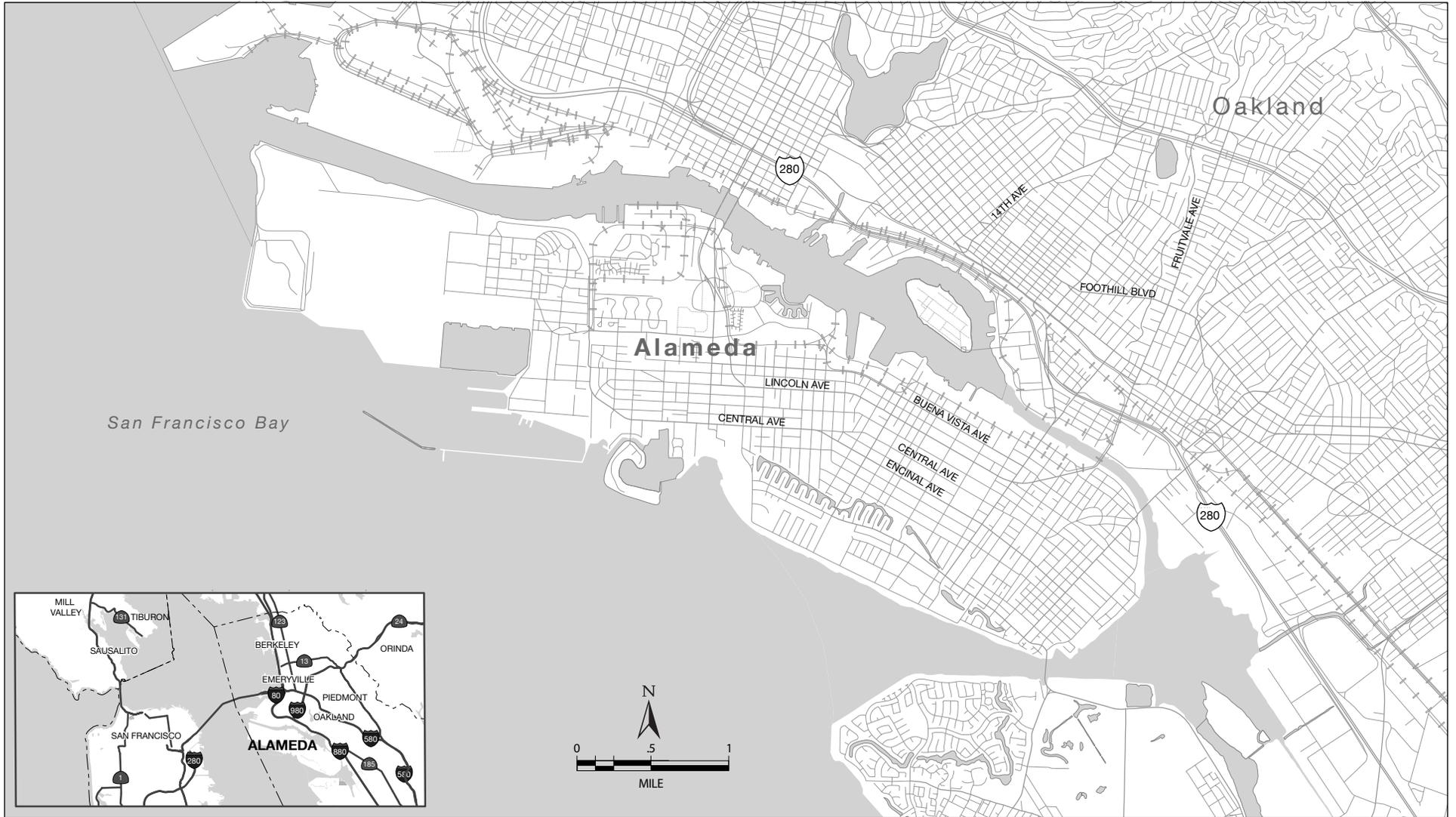


Figure 1

Project Location

Source: Douglas Herring & Associates

Character: Preserve and enhance Alameda’s distinctive character. Alameda is distinguished by its island setting, diverse neighborhoods and main streets, extensive tree canopy and overall walkability and livability. These qualities, and others, contribute to the quality of life for residents while providing the framework for shaping development, conserving resources and maintaining a thriving economy. General Plan 2040 policies manage growth to address current challenges and responsibilities while retaining and building upon the physical qualities and characteristics that contribute to a high quality of life in Alameda.

The six Elements of the General Plan include:

Land Use + City Design Element. The Land Use and City Design Element establishes goals, policies, and actions to ensure the orderly development of the community and provide a sustainable and high quality of life for current and future generations of Alameda residents. The Element policies support the community’s efforts to maintain Alameda’s small town character, provide for local and regional housing needs, respond to the climate crisis, reduce the community’s reliance on the automobile, and support a strong local economy. The policies are intended to maintain and enhance Alameda’s family-friendly, pedestrian-oriented neighborhoods; strengthen and diversify the Alameda business community; manage growth and change to make Alameda a more sustainable and resilient community; and promote sustainable, high-quality city design.

The Land Use and City Design Element includes the Land Use Diagram for the City, shown here on Figure 2. The Land Use Diagram reflects the existing pattern of land use in the City, but also designates where different types of future land use development should be distributed across the City in support of the land use element, local specific plans, Climate Action and Resiliency Plan (CARP), transportation plans, and goals of the regional sustainable communities plan, *Plan Bay Area*. The diagram and classifications depict and describe the general location and extent of land for housing, commercial, industry, public institutions, open space, recreation and natural resources, and other categories of public and private land uses.

Conservation + Climate Action Element. The Conservation and Climate Action Element establishes the City’s goals, objectives, policies, and actions necessary to conserve and protect Alameda’s natural resources, reduce the community’s greenhouse gas emissions and energy use, and to prepare for and address the impacts of climate change. The policies are intended to enable the City to act locally and regionally to implement comprehensive climate action; reduce greenhouse gas emissions generated by vehicle trips in Alameda; reduce greenhouse gas emissions generated by buildings in Alameda; reduce greenhouse gas emissions and conserve natural resources by making Alameda a Zero Waste Community; make Alameda a resilient community that will be able to adapt to the impacts of climate change; and conserve and enhance Alameda’s natural resources, water quality, and wildlife habitat.

While the Conservation and Climate Action Element provides an overarching policy framework for climate adaptation, the CARP contains many of the specific plans, programs, and tools needed to address the threats of climate change. The CARP aligns with State goals for reducing greenhouse gas emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050,

as established by AB 32 and subsequent executive orders from the Governor. The CARP also builds on the broader climate change adaptation planning in the region, such as MTC's *Plan Bay Area* regional transportation plan which, among other objectives, targets per-capita reductions in carbon dioxide (CO₂) emissions from cars and light trucks of at least 15 percent by 2040.

Mobility Element. The Mobility Element establishes the City's goals, objectives, policies, and actions intended to provide a well-designed, inclusive, multi-modal transportation system that supports a livable, equitable, environmentally sensitive, and thriving community. The policies are intended to foster convenient, safe, and efficient access to food, services, goods, employment, education, entertainment, and recreation, which depend on a well-designed, well-coordinated, and well-managed network of streets and transportation services.

Housing Element. The Housing Element, which was adopted in 2014, is not being updated at this time. The Element will be updated in 2022, as required by State Housing Law. The existing Housing Element provides policy direction for making decisions pertaining to housing services and regulations, and sets forth policies, programs, and schedules promoting the preservation, improvement, and development of diverse housing types for a diverse range of household types and incomes in concert with the City's housing and other policy objectives. The policies in the Housing Element are intended to:

- provide housing services and opportunities to support, maintain, and enhance Alameda's diverse community and excellent quality of life and provide for the housing needs of Alameda's future residents and regional housing needs;
- provide housing that meets the City's diverse housing needs, specifically including affordable housing, special needs housing, and senior housing;
- create transit-oriented pedestrian friendly neighborhoods to reduce regional and local greenhouse gas emissions and local traffic congestion; and
- Ensure high quality architectural and sustainable site design.

Open Space + Parks Element. The Open Space and Parks Element provides for a well-designed and maintained interconnected network of neighborhood and community parks, waterfront open spaces, recreational facilities, and natural habitat areas, which are essential to supporting the health and well-being of the community, sustaining and preserving the quality of the natural environment, sequestering greenhouse gases, and withstanding the impacts of climate change. The policies in this element are intended to ensure that existing parks and community and recreation facilities and programs are well operated and maintained; ensure that every resident is within a safe and convenient 10-minute walk or 6-minute bike ride of an interconnected citywide network of parks, open spaces, trails, and recreational facilities by 2040; and expand and improve the system of parks, open spaces, and recreational facilities in Alameda to accommodate population growth, provide for evolving community recreational needs, prepare for climate change, and protect the natural environment.

Health + Safety Element. The Health and Safety Element identifies the policies and strategies necessary to reduce the risk of death, injuries, property damage, environmental degradation,

economic and social dislocation, and excessive and harmful noise from the natural and man-made hazards and noise sources in the City of Alameda. The policies are intended to:

- minimize risks of loss of life, personal injury, property damage, and environmental degradation by developing, monitoring, and updating comprehensive and collaborative emergency preparedness and recovery programs;
- minimize risks of loss of life, personal injury, property damage, and environmental degradation posed by earthquakes and other geologic hazards;
- minimize risks of loss of life, personal injury, property damage, and environmental degradation posed by sea level rise, flooding, and storm water runoff;
- minimize risks of loss of life, personal injury, property damage, and environmental degradation posed by fire hazards;
- minimize risks of loss of life, personal injury, serious illness, property damage, and environmental degradation posed by the use, transport, treatment, and disposal of hazardous materials and hazardous wastes;
- protect Alameda residents from the harmful effects of exposure to excessive noise from aircraft, buses, boats, trucks and automobiles, and adjacent land uses; and
- protect Alamedans from the harmful effects of air pollutants.

In addition to the elements described above, the Alameda General Plan is supplemented by two specific plans tailored to the needs and opportunities of Alameda Point, the site of the former Alameda Naval Air Station (NAS Alameda): the Waterfront Town Center Precise Plan adopted in 2014 and the Main Street Neighborhood Specific Plan, adopted in 2018.

3.5 Existing Environmental Setting

The City of Alameda is centrally located in the San Francisco Bay Area, in the northwest portion of Alameda County, as shown on Figure 1. Alameda is an island city located adjacent to the City of Oakland, with vehicular access to the City provided from Oakland via three bridges (Park, Fruitvale, and High Street) and two one-way tunnels (Posey/Webster Tubes) under the Oakland Estuary. The City of San Francisco lies 3 miles to the west of Alameda, separated by San Francisco Bay. Regional automobile access to Alameda is provided by Interstates 80, 880, and 980, all located to the north of the City. Ferry service is provided by the WETA and regional transit is provided by AC Transit.

The City has a land area of 12.4 square miles that extends over two islands (Alameda Island and Coast Guard Island) and a portion of a peninsula connected to the mainland (Bay Farm Island) (see Figure 2). Alameda Island consists of the original city, with the former Alameda Naval Air Station (Alameda Point) at the west end. Coast Guard Island, home to the U.S. Coast Guard's Integrated Support Command, is located in the Oakland Estuary between Alameda Island and the City of Oakland, and is connected to the mainland by bridge. Bay Farm Island is adjacent to Oakland International Airport, and is connected via a bridge along Otis Drive/Doolittle Drive.

In 2019, the population of Alameda was approximately 79,316 people living in approximately 33,120 housing units. The average household size is 2.53 people per household.¹ As of 2018, 42,608 Alameda residents over 16 (out of a total of 64,047 residents over 16) were employed in civilian jobs, and an additional 760 residents were employed by the Armed Forces.²

Although there were 24,655 jobs in the City of Alameda in 2014, almost as many residents—21,449 people—commuted off the island to neighboring cities. Of those off-island commuters in 2014, the majority worked in the East Bay (46.6%), while a substantial portion worked in San Francisco (33.5%), and 11.1% worked in the South Bay.³ Approximately 59.9% drive alone, 17.0% report taking transit, and 12.0% work from home or walk or bike to work.⁴

The median age of Alameda residents in 2017 was 41.0 years,⁵ which is older than the overall statewide median average of 38.2 years.⁶

In 2017, approximately 48.1 percent of Alameda’s population identified themselves as white, 31.5 percent as Asian, 7.5 percent as black or African American, 0.4 percent as American Indian or Alaska native, and 0.6 percent as Hawaiian or other Pacific Islander. Approximately 11.5 percent identified themselves as being of Hispanic origin and 7.5 percent reported being two or more races.⁷

3.6 Growth and Development Forecasts and Assumptions

The environmental analysis for the *Alameda General Plan 2040* is based upon the following forecasts and assumptions:

- Over the next 20 years (2020 to 2040), the nine-county San Francisco Bay Area will grow to include 4.7 million jobs and 9.6 million people living in 3.4 million households.⁸

¹ California Department of Finance, E-5: Population and Housing Estimates for Cities, Counties, and the State, January 2011-2019, with 2010 Benchmark, May 2019. [NOTE: Doug, please keep copies of all references in your files; we may need them later]

² United States Census Bureau, American Community Survey, Table DP03: 2018: ACS 5-Year Estimates Data Profiles, Accessed July 11, 2020 at: https://data.census.gov/cedsci/table?id=ACS_5-Year_Estimates_Data_Profiles&table=DP03&tid=ACSDP5Y2018.DP03&g=0400000US06_1600000US0600562.

³ City of Alameda, *Transportation Choices Plan: Transit and Transportation Demand Management*, Figure 12: Number of Alameda Commuters to Nearby Destinations, January 2018.

⁴ City of Alameda, *Transportation Choices Plan: Transit and Transportation Demand Management*, Figure 14: City of Alameda Commute Choice (2000-2015), January 2018.

⁵ United States Census Bureau, American FactFinder, Table S0101: Age and Sex, 2013-2017 American Community Survey 5-Year Estimates, Alameda City, California, [undated] [NOTE: Please include links to the tables cited in FN 5, 6, and 7, if available].

⁶ United States Census Bureau, American Community Survey, Table S0101: 2018 ACS 1-Year Estimates, Age and Sex, [undated].

⁷ United States Census Bureau, American FactFinder, Table DP05: ACS Demographic and Housing Estimates, 2013-2017 American Community Survey 5-Year Estimates, Alameda City, California, [undated].

⁸ MTC and ABAG, *Plan Bay Area 2040*, Table 3.1: Bay Area Population, Employment, and Household Projections, Adopted July 26, 2017.

- State of California Housing Law will continue to require that Alameda provide for its share of the region’s growing housing need. As a result, over the next 20 years, Alameda will add 10,000 to 12,000 new housing units and 10,000 to 12,000 new jobs.
- Assuming a 4-percent vacancy rate and an average household size of 2.5 persons, 10,000 new housing units would increase Alameda’s residential population from 79,000 to approximately 104,000.
- Most of the new housing and new jobs will be located in Alameda’s two PDAs located at Alameda Point and the Northern Waterfront. The PDA’s are designated locally and regionally as housing and employment growth opportunity areas in the regional plan to achieve the GHG reduction goals established by Assembly Bill 32. Additional housing opportunities exist for accessory units and additional units on existing residential properties, along the Park Street and Webster Street commercial corridors and at shopping centers. It is expected that Alameda’s existing historic neighborhoods and commercial main streets will look very similar in 2040 as they do today and as they did in 2000 since much of the new housing in these areas will be limited to backyard accessory buildings and addition of units within existing buildings.

3.7 Intended Uses of This EIR

This EIR evaluates the potential environmental impacts that could result from adoption and implementation of the *Alameda General Plan 2040*. Because it is a Program EIR, this EIR does not provide a full evaluation of the impacts of individual development projects that may be allowed under the General Plan, though some of the impacts and mitigation measures identified herein may be applicable to such future projects. The City will review future development proposals to determine whether their impacts may have already been addressed by this EIR, or whether they will require additional environmental review pursuant to CEQA. Even in cases where supplemental environmental review is required, such review may tier off and incorporate this EIR, thereby reducing the extent of environmental analysis required for a future development project. In addition to providing programmatic environmental analysis for future development in Alameda, this EIR could also be utilized by the City for review of capital improvement projects, rezoning of property consistent with the General Plan, approval of conditional use permits and other discretionary planning approvals, approval of development agreements, and as a general reference document, as well as for any other approvals that may be necessary or desirable to implement the General Plan.

4. LAND USE AND PLANNING

4.1 Introduction

This chapter describes the existing land use characteristics of the City of Alameda and the regulatory framework by which land use is regulated. It evaluates the effects that implementation of the *Alameda General Plan 2040* may have on the City's land use patterns, and identifies potential impacts related to displacement of people or housing and related to conflicts with relevant plans and policies.

4.2 Setting

REGULATORY FRAMEWORK

State

California Planning Law

There are three primary regulatory tools used in California to guide land use decisions and planning: the General Plan, which is the primary comprehensive policy document at the city and county level; the zoning ordinance or development code, which establishes regulations for implementing General Plan policy; and subdivision regulations, establishing procedures for the subdivision of land.

The General Plan

The General Plan law, codified at Government Code Sections 65300 *et seq.*, requires every city and county in California to prepare, adopt, and periodically update a comprehensive long-term plan for guiding future physical development within the jurisdiction. The intention of the Legislature in these regulations is to ensure the preservation of California's finite land resource and ensure its use in ways that are economically and socially desirable so as to improve the quality of life in California. The planning and land use law is intended to allow cities and counties to make expeditious land use decisions that help reduce the State's housing crisis by restricting legal challenges to local land use decisions, thereby providing greater certainty for both property owners and local governments.

Government Code Section 65302 requires the General Plan to include the following elements, with each setting forth a statement of objectives, principles, standards, and proposals:

- **Land Use Element** that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, greenways, and other

categories of public and private uses of land.

- **Circulation Element** consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.
- **Housing Element** providing an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement, and development of housing. The Housing Element must identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and must include adequate provision for the existing and projected needs of all economic segments of the community.
- **Conservation Element** for the conservation, development, and utilization of natural resources, including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.
- **Open Space Element** that is a local open space plan for the comprehensive and long-range preservation and conservation of open space land within the jurisdiction, including goals and policies that will guide the preparation and implementation of the open space plan and an action program that the legislative body intends to pursue in implementing its open-space plan. Unless a separate agricultural land element is prepared and adopted, the open space element must also identify agricultural lands in the jurisdiction, utilizing the designations in the Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). It must also identify all parcels subject to a Williamson Act contract or conservation easement and tabulate total existing and former acreage of agricultural land, by classification according to the FMMP. The open space element may include an agricultural land component that sets forth a comprehensive set of goals, policies, and objectives to support long-term protection of agricultural land.
- **Noise Element** that analyzes and quantifies, to the extent practicable, current and projected noise levels for highways and freeways, primary arterials, major local streets, passenger and freight railroad lines, airports, industrial plants, and any other relevant ground stationary noise sources. Noise contours should be included as a guide for establishing a pattern of land uses that minimizes exposure of community residents to excessive noise.
- **Safety Element** for the protection of the community from any unreasonable risks associated with the effects of seismically-induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic and geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. After January 1, 2009, the safety element must also identify flood hazard zones as mapped by the Federal Emergency Management Agency (FEMA), dam failure inundation areas, and other flood hazards, such as tsunami runup zones. Following the next revision of the housing element after January 1, 2014, the safety element must be updated as necessary to address the risk of fire, including the identification of very high fire hazard severity zones, as mapped by the California Department of Forestry and Fire Protection (CAL FIRE). The safety element must include a set of goals, policies, and objectives, based on the fire hazards identified in the community, for the protection of the community from the unreasonable risk of wildfire,

including locating new essential public facilities outside of high fire risk areas, when feasible. Following the next revision after January 1, 2014 of the local hazard mitigation plan adopted in accordance with the federal Disaster Mitigation Act of 2000, or after January 1, 2022 if the jurisdiction does not have a hazard mitigation plan, the safety element must be updated as necessary to address climate adaptation and resiliency strategies applicable to the city or county. This must include a vulnerability assessment that identifies the risks that climate change poses to the local jurisdiction and the geographic areas at risk from climate change impacts, along with a set of adaptation and resilience goals, policies, and objectives for the protection of the community from the impacts of climate change. The safety element must be revised and updated following each revision of the housing element or local hazard mitigation plan, but not less than once every eight years, to identify new information relating to flood and fire hazards and climate adaptation and resiliency strategies applicable to the city or county that was not available during the previous revision of the safety element.

- **Environmental Justice Element** that identifies disadvantaged communities, if any, within the area covered by the general plan, and establishes objectives and policies to reduce the unique or compounded health risks in disadvantaged communities, such as exposure to air pollutants, to address the needs of disadvantaged communities, and to promote civic engagement in the public decision-making process. These requirements for an environmental justice element can be integrated into other general plan elements.

Individual communities may add other elements to their general plan, and many do so. Common optional elements adopted by California cities and counties include elements dedicated to public facilities, urban design, parks and recreation, scenic highways, historic preservation, air quality, growth management, and energy. Many communities also combine some of the State-mandated general plan elements, such as a safety and noise element or an open space and conservation element.

The Zoning Ordinance

In 1971, the California Legislature passed a “consistency law,” codified at Government Code Section 65860, that requires city and county zoning ordinances to be consistent with the adopted general plan. Today, the legal function of the zoning ordinance is to serve as a tool for the implementation of the broad policy direction established in the general plan. State requirements for the adoption and administration of zoning laws, ordinances, rules, and regulations by counties and cities are set forth in Government Code Sections 65800 to 65912 and include procedural requirements for public zoning hearings.

A city or county may adopt ordinances to regulate the use of buildings, structures, and land; the height, bulk, number of stories, and size of buildings and other structures; the percentage of a lot which may be occupied by a building or structure; the size and use of lots, yards, courts, and other open spaces; the intensity of land use; requirements for off-street parking and loading; building setbacks; billboards and signs; lighting; requirements for affordable housing; and more.

The most fundamental component of zoning is the use district, which is assigned to each property in a jurisdiction, and which restricts the type of development that may be built on the property. The

zoning ordinance must spell out the permitted uses in each district, and typically includes a list of conditionally permitted uses, subject to certain conditions and issuance of a conditional use permit. The number of use districts varies considerably from one jurisdiction to another, and some jurisdictions have dozens of use districts, but most districts fall into the categories of single-family residential, multi-family residential, neighborhood commercial, regional commercial, office, light industrial, heavy industrial, institutional, public facilities, parks, open space, and agricultural. Some cities and counties also employ overlay zones that may apply to multiple use districts and impose additional zoning requirements to those applicable to the base zoning district.

Subdivision Map Act

The Subdivision Map Act of 1907 was the first land use law ever passed by the California Legislature; it has been modified many times in subsequent years. Unlike zoning and general plan law, the Map Act only applies when a landowner seeks to subdivide his or her property. The Map Act's primary goals are:

- To encourage orderly community development by providing for the regulation and control of the design and improvement of the subdivision, with a proper consideration of its relation to adjoining areas;
- To ensure that the areas within the subdivision that are dedicated for public purposes will be properly improved by the subdivider so that they will not become an undue burden on the community; and
- To protect the public and individual transferees from fraud and exploitation.

In general, a subdivision of four or fewer lots requires approval of a parcel map, while subdivisions of five or more lots require a tentative map and a final subdivision map. The requirements apply both to subdivisions of land creating five or more parcels as well as to subdivisions creating five or more condominiums, community apartment projects containing five or more parcels, or conversion of a dwelling to a stock cooperative containing five or more dwelling units, though there are exceptions set forth in Government Code Section 66426. Lot line adjustments; construction, financing, or leasing of accessory dwelling units; conveyances to or from public entities or public utilities; conversions of community apartments to condominiums; and financing and leasing of apartments, offices, stores, or similar spaces within buildings or mobile home parks are all exempted from the Map Act.

Pursuant to Government Code Section 66411, the regulation and control of the design and improvement of subdivisions are vested in the legislative bodies of local agencies. Each local agency must promulgate an ordinance to regulate and control the design and required improvements of subdivisions that are subject to a tentative and final or parcel map in accordance with the Subdivision Map Act. Local subdivision regulations typically govern the physical requirements for new development, including site layout and the design of improvements. Local subdivision ordinances must specifically provide for proper grading and erosion control, including the prevention of sedimentation or damage to offsite property.

The Subdivision Map Act gives local agencies the authority to require that land be set aside within a subdivision for streets, public transit lines, and bicycle paths. It allows local agencies to assess fees for drainage and sewer facilities, bridges, and groundwater recharge programs, and allows them to require easements to provide public access to rivers and streams. The Map Act also contains a long list of fees and exactions that local agencies are authorized to collect. One of these fees, established by the Quimby Act (which is within the Subdivision Map Act), allows agencies to require developers of residential subdivisions to either dedicate parkland or pay an in-lieu fee that allows the local jurisdiction to purchase parkland or recreational facilities. They may require dedication of up to 3 acres of parkland land per 1,000 persons residing within a subdivision, or the equivalent payment of fees, or a combination of the two.

Regional

Plan Bay Area 2040

Plan Bay Area 2040, adopted jointly in July 2017 by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), is the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the San Francisco Bay Area, mandated by Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2008. SB 375 required each of the State's 18 Metropolitan Planning Organizations (MPOs) to prepare an RTP/SCS that will enable the affected region to achieve the greenhouse gas (GHG) reduction goals established by Assembly Bill 32, passed in 2006, and ensure the provision of adequate housing for growth projected during the planning period.

This current RTP/SCS describes where and how the Bay Area can accommodate 820,000 new projected households and 1.3 million new jobs by 2040. The *Plan Bay Area 2040's* 7 goals and 13 performance targets to promote economic vitality, ensure social equity, and protect the environment link to the policy framework established in the *California Transportation Plan 2040* by the California Department of Transportation. Central to both plans are carbon dioxide (CO₂) emissions reduction targets designed to tackle climate change in the years to come. Both plans prioritize fixing an aging transportation system, appropriately focusing future growth, and increasing the share of non-auto modes of travel. While *Plan Bay Area 2040* sets forth a range of policy strategies for achieving the housing, air quality, and transportation goals, it is not prescriptive or enforceable, and does not alter the Regional Housing Needs Allocation (RHNA) numbers allocated by the State and ABAG to Bay Area cities and counties.

Plan Bay Area 2040's core strategy is “focused growth” in existing communities along the existing transportation network. This strategy is intended to leverage existing infrastructure, complement and integrate with existing community characteristics, and minimize impacts to less developed areas. The focused growth strategy targets Priority Development Areas (PDAs) that are identified by local governments. These existing neighborhoods are served by public transit and have been determined to be appropriate for additional, compact development. Conversely, development is steered away from Priority Conservation Areas (PCAs), also designated by local governments, that contain regionally significant open spaces that face near-term development pressures. *Plan Bay*

Area 2040 also identifies priority transit and road improvement projects throughout the Bay Area, including BART extensions, commuter rail projects, and new ferry routes and terminals, including a new ferry terminal at Alameda Point.

Planning is already well underway for *Plan Bay Area 2050*, the successor to *Plan Bay Area 2040*. *Plan Bay Area 2050* will focus on four key issues—the economy, the environment, housing, and transportation—while integrating the cross-cutting issues of *equity* and *resilience*. The Plan is being developed in five phases. Horizon, the first phase completed in January 2020, solidifies the overall project’s vision, goals, and cross-cutting issues on which to focus. A Draft Blueprint was the second phase, which was adopted by MTC and ABAG in February 2020. The Draft Blueprint evaluated 25 interwoven transportation, housing, economic, and environmental strategies that were identified in the Horizon phase, testing them against a wide range of external forces to see which policies and investments could best respond to an uncertain future (similar to what we are experiencing now due to the coronavirus pandemic). The strategies are designed to accommodate 1.5 million new homes (necessary to house the anticipated expanded population and address overcrowding) and 1.4 million new jobs identified in the Regional Growth Forecast.

Phase 3 of the development of *Plan Bay Area 2050* is the Final Blueprint, which includes a set of 35 revised and expanded strategies developed around 11 themes, as well as the Growth Geographies and the Regional Growth Forecast. The Final Blueprint was approved by MTC and ABAG in September 2020. The Growth Geographies are key locations for future focused housing and job growth anticipated in the Regional Growth Forecast, which charts planned growth in the Bay Area between 2015 and 2050. The next phase in the process is the preparation of an EIR, for which a Notice of Preparation was published on September 28, 2020. The Draft EIR is scheduled for public review in Spring 2021, which will be followed by certification of the Final EIR, expected in Fall 2021. The final phase, also expected to be completed in Fall 2021, is an Implementation Plan that will define specific near-term actions for ABAG, MTC, and partners to advance each of the strategies adopted in the Final Blueprint, focusing on the next five years, and intended to make the Bay Area more equitable and resilient in the future.

City of Alameda

Alameda Municipal Code

All ordinances passed by the Alameda City Council are codified in the Alameda Municipal Code, which consists of 30 chapters or regulations covering all aspects of business and resident activity in the City. The chapters most pertinent to land use development include:

- **Chapter XIII, Building and Housing**, which contains uniform building codes, requirements for preservation of historical and cultural resources, noise insulation standards, and requirements for earthquake retrofits of existing buildings, among other provisions;
- **Chapter XV, Fire Prevention**, which includes the Alameda Fire Code regulating building construction;

- **Chapter XXVII, Development Fees**, which identifies affordable housing requirements and development impact fees; and
- **Chapter XXX, Development Regulations**, which is essentially the Zoning Ordinance.

The Zoning Ordinance establishes and defines the City's 25 zoning districts and sets forth development regulations applicable to each district. The City's 25 zoning districts include the following:

Residential Districts

- R-1, One-Family Residence District
- R-2, Two-Family Residence District
- R-3, Garden Residential District
- R-4, Neighborhood Residential District
- R-5, General Residential District
- R-6, Hotel Residential District

Commercial and Industrial Districts

- A-P, Administrative–Professional District
- C-1, Neighborhood Business District
- C-2, Central Business District
- C-C, Community Commercial Zone
- C-M, Commercial-Manufacturing District
- M-1, Intermediate Industrial (Manufacturing) District
- M-2, General Industrial (Manufacturing) District

Special Purposes Districts

- PD, Planned Development Combining District
- A, Agricultural Combining District
- B, Special Building Site Combining District
- H, Special Height Combining District
- G, Special Government Combining District
- Y, Special Yard Combining District
- O, Open Space District
- M-X, Mixed-Use Planned Development District
- E, Estuary District
- T, Theatre Combining District
- MF, Multi-family Residential Combining Zone

- AP, Alameda Point
- NP, North Park Street District

EXISTING CONDITIONS

Land Use Pattern

The island community of Alameda is a predominantly residential city that is well developed with a full spectrum of support services for its residents, including a robust retail shopping sector. As shown on the Land Use Diagram (Figure 2), the central portion of Alameda Island is occupied by medium-density residential uses, predominantly single-family homes, while lower-density residential development is located in the eastern and part of the southern ends of the City. (In addition to designating how future development of different land use types should be distributed across the City, the Land Use Diagram is broadly reflective of the existing pattern of land use development in Alameda.) The majority of the City's multi-family apartment complexes are located in the east-central area of Alameda Island and along the southern shoreline.

The city has two primary retail and entertainment districts, the historic Park Street area, known as the Downtown Alameda Business District, and the Webster Street area, also known as the West Alameda Business District. These two centers of activity are linked by another retail cluster along Lincoln Avenue. The City also has three large community shopping centers, in addition to smaller shopping centers sprinkled around the City. Alameda Landing, which has dozens of stores and restaurants, anchored by a Target and a Safeway grocery store, is located near the northern waterfront, just east of the Webster Tubes. The shopping center is part of a larger planned mixed-use community, partially completed, that includes residential homes, condominiums, and commercial uses extending to the waterfront. The second shopping center, Marina Village Shopping Center, is located less than one-quarter mile east of Alameda Landing. This center is anchored by a Lucky grocery store and CVS drug store, and includes office development. South Shore Center is the third large shopping center, located adjacent to the southeast shoreline of Alameda Island. This large shopping complex houses over 80 local and national chain restaurants and retailers, including Safeway, Trader Joe's, Kohl's, Bed Bath & Beyond, TJ Maxx, Walgreens, OfficeMax, Ross Dress for Less, Old Navy, Petco, and many others. It also includes office space.

The City's greatest diversity of land uses is found along the northern shoreline of the main island, which was historically developed with maritime uses. Today many marine-related land uses remain, while there are also a variety of other commercial uses, some residential development, and vacant land. Eight boat marinas line the northern shoreline: Mariner Square Marina and Drystack Facility, Marina Village Yacht Harbor, Fortman Marina, Alameda Marina, Grand Marina, Island Yacht Club, Alameda Yacht Club, and the Oakland Yacht Club. Residential townhomes clustered around a manmade lagoon are located just east of the Marina Village Shopping Center. The waterfront north and west of these homes is developed with a hotel, offices, retail businesses, and a shoreline park. Further to the west is an office park, large vacant concrete pier areas, more boat slips, another hotel, a collection of houseboats, warehouses, and vacant land.

The area west of Encinal Basin is developed with office and light industrial uses and a subdivision of townhomes. Between Grand Street and Oak Street, in addition to some of the marinas/yacht clubs listed above, there are a variety of warehouses, marine support businesses, boat dry storage, a large indoor storage facility, vacant land, and Navy support facilities. The waterfront areas flanking Park Street are developed with various retail and office uses and a nursing home. Just west of the Fruitvale Bridge is a small neighborhood shopping center. East of the Fruitvale Bridge there is a sudden transition to single-family residential development that extends around the eastern shoreline and occupies nearly all of the eastern end of Alameda Island, along with schools and neighborhood parks.

Although the southern shoreline of Alameda Island is predominantly residential, there are a variety of other land uses as well. Robert W. Crown Memorial State Beach is a popular regional park located just east of Ballena Isle Marina. There are office uses in proximity to the shoreline and four schools: Encinal High School, Wood Middle School, William G. Paden Elementary School, and Donald D. Lum Elementary School. As previously noted, the South Shore Center shopping complex is located adjacent to the southern shoreline. The residential uses in the area include apartment complexes and single-family homes.

Alameda Point, the former Naval Air Station (NAS) Alameda, occupies the western third of Alameda Island. Following the closure of the air station in April 1997 and subsequent site cleanup activities, the property was transferred from the U.S. Navy to the City of Alameda in phases starting in 2013. Over time, the City intends to rehabilitate or replace much of the infrastructure serving the area and redevelop Alameda Point with approximately 5.5 million square feet of commercial and light industrial uses providing approximately 8,900 new jobs, 1,425 new and rehabilitated residential units, retail and commercial uses, maritime and water-related recreational uses, a new ferry terminal, and open space and parks. Today, Alameda Point has many large warehouse-type buildings, both vacant and occupied, former Navy barracks, apartments, and single-family homes, and vacant land, including large areas paved in concrete or asphalt. The western half of Alameda Point is occupied by the former runways of NAS Alameda. The southwestern corner of the Point is a nature reserve that supports a breeding colony of California least terns, which is an endangered species under the federal Endangered Species Act.

Bay Farm Island, which is connected to Alameda Island by a short bridge via Otis Drive, is essentially a suburb of Alameda. It is predominantly developed with residential neighborhoods of single-family homes and townhomes/condominiums. A chain of lagoons runs through some of the neighborhoods, which also include parks and schools. The Chuck Corica Golf Complex occupies the northeast part of the "island," which is actually a peninsula connected to the City of Oakland. Oakland International Airport abuts the eastern edge of the 36-hole golf course. The southern side of Bay Farm Island is devoted to existing and planned office parks and commercial development. A shoreline hotel is planned for the area, and there is an existing Extended Stay America hotel adjacent to the airport property.

4.3 Standards of Significance

Based on Appendix G of the *CEQA Guidelines*, a project would have a significant land use and planning impact if it would physically divide an established community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.¹ These standards of significance are adopted for use in this EIR.

4.4 Impacts and Mitigation Measures

The assessment of land use and planning impacts identified in this chapter is based on the standards of significance listed in Section 4.3. This section identifies land use and planning impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan.

The proposed Land Use and City Design Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to ensure the orderly development of the community and provide a sustainable and high quality of life for current and future generations of Alameda residents. The Land Use and City Design Element policies support the community's efforts to maintain Alameda's small town character, provide for local and regional housing needs, respond to the climate crisis, reduce the community's reliance on the automobile, and support a strong local economy. The following Land Use and City Design Element objectives, policies, and actions would guide future land use development and/or help reduce land use and planning impacts associated with implementation of the proposed General Plan:

Objective 1 Maintain and enhance safe, healthy, sustainable, complete and connected neighborhoods that support a high quality of life and fair and equitable access to affordable housing, employment, education, recreation, transportation, services, and participation in public decision making.

Policy LU-2 Complete Neighborhoods. Maintain complete, safe, healthy, and connected neighborhoods that support a mix of uses and meet the needs of residents of all ages, physical abilities, cultural backgrounds, and all incomes.

Actions:

- **Healthy Neighborhoods.** Provide equitable and safe access to housing, parks and recreation facilities, community services, public health services, schools, child care facilities, and neighborhood amenities in all neighborhoods.
- **Parks and Open Space.** Maintain a comprehensive and integrated system of parks, trails, open space, and commercial recreation facilities within a safe and comfortable ¼ mile walk from all neighborhoods.

¹ Governor's Office of Planning and Research, *CEQA Guidelines*, Appendix G, Section XI, as amended December 28, 2018.

- **Water Access.** Provide convenient and safe bicycle and walking access to the waterfront from all residential neighborhoods.
- **Accessory Units.** Permit accessory dwelling units in all residential and mixed-use zoning districts to increase the supply of small, more affordable housing units.
- **Affordable Housing.** Permit rental and ownership housing opportunities for all income levels, ages and family types and sizes in all residential and mixed-use zoning districts.
- **Multi-family and Shared Housing.** Permit multifamily and shared housing opportunities, including co-housing, congregate housing, senior assisted living, single room occupancy housing, transitional housing, emergency warming shelters, and shelters for the homeless in all Medium-Density residential zoning districts and in all three of the Mixed-Use Land Use Classification zoning districts to provide for the housing needs of all Alamedans.
- **Child Care.** Permit child care facilities and services in all residential and mixed-use zoning districts.
- **Cottage Business and Home Occupations.** Permit small employment and business opportunities such as home occupations, live work, and “cottage” businesses in all residential and mixed-use zoning districts to reduce commute hour traffic and associated greenhouse gas emissions.
- **Local Food.** Permit farmers’ markets and community gardens in all residential and mixed-use zoning districts to increase access to healthy foods for all residents throughout the city.

Policy LU-3

Complete Streets. Promote safe and walkable neighborhoods with inter-connected well-designed streets that serve the needs of all Alamedans and all modes of transportation.

Actions:

- **Connectivity.** Connect neighborhoods and major destinations such as parks, open spaces, the waterfront, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure, and avoid sound walls, gated streets and other similar barriers that separate neighborhoods and decrease physical and visual connectivity.
- **Pedestrian-Friendly Environment.** Provide wide sidewalks, street shade trees, pedestrian lighting, bus benches and shelters, and other pedestrian amenities to support walking, rolling, strolling, window-shopping and sidewalk dining.
- **Common Areas.** Provide spaces for community interaction to encourage a sense of collective ownership of public areas.
- **Safety.** Eliminate traffic related fatalities and severe injuries on Alameda streets by providing safe, well-designed pedestrian crossings with adequate visibility for motorists and pedestrians, minimizing curb cuts and driveways that cross public sidewalks and bicycle facilities,

providing low-stress bicycle routes, and designing streets to keep automobile travel speeds below 25 miles per hour.

Policy LU-4 Neighborhood Transitions. Ensure sensitive transitions between neighborhoods and adjoining business districts to minimize nuisances while encouraging mixed-use development that provides commercial services or employment opportunities in close proximity to neighborhoods.

Policy LU-5 Neighborhood Mixed-Use. Maintain, promote and support neighborhood-oriented business districts to provide local-serving retail and commercial uses with multi-family housing opportunities above the ground floor commercial uses.

Policy LU-6 Waterfront Mixed-Use. Provide a wide variety of maritime, commercial, residential, civic, and recreational uses along the waterfront that compliment maritime activities, provide economic opportunities and jobs, and draw residents and visitors to the shore.

Actions:

- **Water Dependent Businesses.** *Prioritize the current and future needs of public ferry systems, water taxis and shuttles, recreational and boating businesses, and other businesses and activities that require a waterfront location to operate.*
- **Supporting Services.** *Permit complementary maritime serving and visitor serving commercial services and uses to support the public waterfront access and maritime businesses on the waterfront.*
- **Public Access and Bay Trail.** *Ensure waterfront public access and Bay Trail improvements in all new waterfront development.*

Policy LU-7 Joint Use. Encourage the development of a broad range of retail uses in the City's commercial centers and corridors that reduces the need to travel off-island to capture a greater share of local spending. Partner with Alameda Unified School District and other institutions to provide public access for shared and joint use of open space, recreational and community facilities.

Goal 2 Strengthen and diversify the Alameda business community and economy.

Policy LU-9 On-Island Goods and Services. Encourage the development of a broad range of commercial businesses and services in Alameda to provide for the diverse needs of the Alameda community and reduce the need to travel off-island to acquire goods and services.

Policy LU-10 Two "Main Streets." Support, promote and preserve Park and Webster Streets as the city's two iconic and vibrant "Main Streets" providing Alamedans with a broad mix of local restaurants, stores, entertainment, hospitality, and personal and professional services. (See also Policy LU-28).

Actions:

- **Business District Partnerships.** *Work in partnership with the West Alameda Businesses Association and the Downtown Alameda Business Association to support, strengthen, and diversify the Park and Webster Streets commercial mixed-use districts.*

- **Facade Improvement Programs.** Provide support for private property owners through facade improvement programs and streamlined permitting processes to improve their buildings and facades and support the overall attractiveness and success of the business district.

Policy LU-11 On-Island Employment. Increase on-island employment to provide additional employment opportunities for Alameda residents, reduce commute hour congestion, and reduce transportation related greenhouse gas emissions.

Actions:

- **Training and Intervention Strategies for Populations Facing Barriers.** Support programs, strategies and interventions that break down barriers to employment for historically marginalized populations such as youth, seniors, people with disabilities, the formerly incarcerated, and residents with limited English proficiency.
- **Partnerships.** Partner with the College of Alameda and the Alameda Unified School District to offer more coursework and training oriented toward emerging industries such as green collar, blue economy (sustainable use of ocean resources for economic growth and jobs), and other high-growth employment categories.

Policy LU-12 Business and Employment Preservation. Protect and preserve Business and Employment and Maritime Commercial and Industrial Areas shown by prohibiting introduction of residential uses and discouraging rezoning of property in these areas to allow residential use.

Policy LU-13 Green Economy. Promote a green economy that reduces greenhouse gas emissions generated by Alameda businesses.

Actions:

- **Incentives.** Provide incentives and support for businesses that benefit Alamedans and the environment by reducing their greenhouse gas emissions and air pollution through clean energy alternatives, electrification of buildings and operations, and other environmental best practices.
- **Green Business Practices.** Encourage Alameda businesses and industries to become more sustainable and continue to make positive contributions to the community by, for example, hiring locally, supporting telecommuting, utilizing solar power and prioritizing electric vehicles. This includes providing electric vehicle charging stations and a variety of transit options.
- **Housing and Transportation.** To reduce greenhouse gas emissions generated by employee commute trips, support housing at all affordability levels in proximity to employment areas, improve bus, ferry, bicycle and pedestrian facilities in proximity to employment areas, and allow child care facilities in business areas.

Goal 3 **Make Alameda a more sustainable and environmentally sensitive community.**

Policy LU-14 **Planning for Climate Change.** Prepare for climate change and reduce greenhouse gas emissions regionally and locally.

Actions:

- **Sustainable Communities Strategy.** *Maintain consistency between the City's General Plan, the Municipal Code, and the region's Sustainable Communities Strategy Plan Bay Area.*
- **State and Regional Programs.** *Continually evaluate City policies, ordinances, and actions, to ensure that the City supports and is an active participant in state and regional efforts to address climate change through greenhouse gas emission reduction, transportation system improvements, and increased affordable housing supply near job centers, public transportation facilities, and other services.*

Policy LU-15 **Housing Needs.** Provide land appropriately zoned to accommodate local and regional affordable housing needs and support the region's Sustainable Communities Strategy to address climate change as well as housing needs.

Policy LU-16 **Climate-Friendly, Transit-Oriented Mixed-Use Development.** Permit higher-density, multi-family and mixed-use development on sites within walking distance of commercial and high quality transit services to reduce automobile dependence, automobile congestion, greenhouse gas emissions, and energy use; provide for affordable housing; make efficient use of land; and support climate friendly modes of transportation, such as walking, bicycling, and transit use.

Actions:

- **Transit-Oriented Zoning.** *To support additional ferry service, bus services, and future rail service in Alameda, amend the zoning code to allow for higher-density, mixed-use, multi-family housing in transit-rich locations.*
- **Mixed-Use Shopping Centers.** *Amend the zoning code to facilitate the redevelopment and reinvestment in Alameda's single-use retail shopping centers and large open parking lots with higher density mixed use development with ground floor commercial, service, and office uses, and upper floor multi-family housing.*
- **Incentives.** *Utilize strategic infrastructure investments, public lands, public/private partnerships, and density bonuses and waivers to incentivize and support mixed-use, transit-oriented development in transit rich locations.*
- **Transportation Demand Management Programs.** *Require new developments to include transportation services and facilities to support the City's mode shift goals.*
- **Parking Requirements.** *Amend the Municipal Code to replace minimum parking requirements with maximum parking requirements to disincentivize automobile ownership and reduce construction and land costs to help make housing more affordable.*

Policy LU-17 Adaptive Reuse and Restoration. Support and encourage rehabilitation, restoration, and reuse of existing structures to retain the structure’s embodied energy and reduce the generation of waste.

Actions:

- **Intensification and Reinvestment in Existing Buildings.** Promote reinvestment and reuse in existing buildings, including facade improvements, accessibility improvements and additional story height to increase the range of uses and richness of the urban fabric while building on the historic character and form.
- **Innovative Design Solutions.** Encourage and support innovative design solutions for the restoration and reuse of older buildings for new uses and avoid design solutions that mimic a prior design style.

Policy LU-18 Alameda Point Waterfront and Town Center Mixed-Use District. Consistent with the Waterfront and Town Center Specific Plan, create a compact, transit-oriented mixed-use urban core and vibrant waterfront experience that leverages the unique character and existing assets of the area to catalyze a transformation of the larger Alameda Point area.

Actions:

- **Mixed-Use.** Create a pedestrian, bicycle, and transit supportive mixed-use urban waterfront environment designed to de-emphasize the automobile and provide for a mix of uses that include waterfront and visitor-serving uses, retail, service, entertainment, lodging, recreational, and medium to high-density residential.
- **Seaplane Lagoon.** Permit uses that promote pedestrian vitality and are oriented to the Seaplane Lagoon, such as a ferry terminal, marinas, viewing platforms, fishing piers, and areas reserved for kayaks and other non-motorized boats. Include “short-duration stop” facilities that support stopping, gathering and viewing with places to sit, interpretive kiosks, integrated water features, public art, and access to the water.
- **De Pavé Park.** On the western shore of the Lagoon, develop “De Pavé Park” consistent with the Public Trust and sensitive to the Wildlife Refuge.
- **Conservation.** Educate users and enforce restrictions to Breakwater Island and install signs about the sensitivity of the protected bird and mammal species.

Policy LU-19 Alameda Point Main Street Neighborhood Mixed-Use District. Consistent with the Main Street Specific Plan, provide a variety of housing types and a mix of residential densities with complementary business uses, neighborhood-serving retail, urban agriculture and park uses.

Actions:

- **Mixed-Use.** Create a mixed-use and mixed-income residential neighborhood with parks and community serving businesses and institutions, child care and family child care homes, supportive housing,

assisted living, community gardens, urban farms and agriculture, compatible specialty manufacturing and light industrial uses, life science companies, and community services that complement and support the subdistrict and Alameda as a whole.

- **Walkable.** *Create a walkable, transit friendly neighborhood with safe streets, common open space areas and greenways, and pedestrian and bicycle friendly development.*
- **Alameda Point Collaborative.** *Support development of a new residential campus for the Alameda Point Collaborative (APC), Building Futures for Women and Children, and Operation Dignity (collectively referred to as the “Collaborating Partners”).*
- **NAS Alameda Historic District.** *Preserve the character defining features of the NAS Alameda Historic District Residential Subarea. Preserve the “Big White” single family homes, and consider the preservation of the Admiral’s House for community and/or City use.*

Policy LU-20 Alameda Point Enterprise Sub-District. Support the development of the Enterprise District for employment and business uses, including office, research and development, bio-technology and high tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses.

Actions:

- **Vibrant Employment District.** *Support the creation of a pedestrian, bicycle, and transit supportive business environment with high quality, well designed buildings within walking distance of transit, services, restaurants, public waterfront open spaces, and residential areas.*
- **Support and Protect Job Growth.** *Encourage and facilitate job growth and limit intrusion of uses that would limit or constrain future use of these lands for productive and successful employment and business use.*
- **Pacific Avenue.** *Support the development of Pacific Avenue as an iconic landscaped boulevard with separated bike paths and pedestrian routes.*
- **Residential Uses.** *Ensure that residential uses are directed to those areas within the district that will not result in limitations or impacts on the ability of research and development, bio-technology, high tech manufacturing, heavy industrial, manufacturing, or distribution businesses to effectively operate in the area.*

Policy LU-21 Alameda Point Adaptive Reuse Sub-District. Support the development of the Adaptive Reuse District for employment and business uses, including office, research and development, bio- technology and high tech manufacturing and sales, light and heavy industrial, maritime, commercial, community serving and destination retail, work/live, and other uses that support reinvestment in the existing buildings and infrastructure within the NAS Alameda Historic District.

Actions:

- **Preservation of the NAS Alameda Historic District.** Support and promote a pedestrian, bicycle, and transit supportive urban environment that is compatible with the character-defining features of the NAS Alameda Historic District.
- **Investment Opportunities.** Allow for a wide range of investment opportunities within the district to encourage private reinvestment in the NAS Alameda Historic District.
- **Significant Places.** Encourage the creation of a range of cultural and civic places through the development or adaptive reuse of key civic structures, including libraries, churches, plazas, public art, or other major landmarks to provide a sense of center and unique character.

Policy LU-22 Alameda Point Open Space and Nature Reserve. Provide for parks, recreation, trails, and large-scale public assembly and event areas consistent with the Public Trust Exchange Agreement.

Actions:

- **Public Access.** Support maximum public access, use and enjoyment of these lands, and the protection of natural habitat and wildlife. Provide a variety of public open space and compatible uses, such as museums and concessions in a manner that ensures the protection of the natural environment.
- **Limited Use.** Limit uses to public recreation and maritime oriented commercial uses in this sub-district. Provide seasonal public access to wildlife and nature reserve areas.
- **Nature Reserve.** Support the development of the Nature Reserve and Government sub-district for wildlife habitat to preserve and protect the natural habitat in this area and protect endangered species and other wildlife and plant life that inhabit, make use of, or are permanently established within this area.
- **Marine Conservation Areas.** Consider establishment of a Marine Conservation Area within the submerged lands at the entrance of Seaplane Lagoon.

Policy LU-23 Northern Waterfront Mixed-Use Area. Create a vibrant mixed-use, pedestrian-friendly, transit-oriented neighborhood with a variety of uses that are compatible with the waterfront location.

Actions:

- **Waterfront Access.** Expand public shoreline access and by redeveloping vacant and underutilized waterfront property with shoreline public open space and a mix of uses and extending Clement Avenue, the Cross Alameda Trail, and the Bay Trail through the Northern Waterfront from Grand Street to Sherman and from Broadway to Tilden Avenue to facilitate the movement of vehicles, bicycles, and pedestrians along the northern waterfront.

- **View Corridors.** Create a safe circulation system that addresses the needs of pedestrians, bicyclists, transit riders, automobile and truck drivers, and adjacent neighborhoods. Preserve views of the water and Oakland from existing and planned roadways and public rights of way.
- **Waterfront Mixed-Use.** To support a lively waterfront and pedestrian friendly environment, provide a mix of uses and open space adjacent to the waterfront including a mix of multi-family residential, neighborhood-serving commercial, office, marine, and waterfront commercial recreation, boat repair, maintenance and storage, dry boat storage and hoists, waterfront restaurants and related amenities.
- **Public Launching and Water Shuttle Facilities.** Support waterborne forms of transportation and water based recreation by providing public docks at Alameda Landing at 5th Street, Marina Village, Alaska Basin at Encinal Terminals, Grand Street Boat Ramp, and Alameda Marina.
- **Maritime and Tidelands Uses.** Promote and support water and maritime related job and business opportunities.
- **Historic Resources.** Preserve the unique historical, cultural, and architectural assets within the area and utilize those assets in the creation of a new, vibrant mixed-use district.
- **Del Monte Warehouse and Alaska Packers Building.** Preserve the Del Monte Warehouse Building consistent with Secretary of the Interior's Standards for Rehabilitation and its City Monument designation, and preserve the Alaska Packers building for maritime and tidelands compliant uses.
- **Encinal Terminals.** Redevelop the vacant property with a mix of uses to create a lively waterfront development with residential, retail and recreational commercial, restaurant and visitor serving, and maritime uses. Ensure the provision of an accessible, safe and well designed public shoreline promenade around the perimeter of the site adjacent to the Alaska Basin and Fortman Marinas that connects to trail systems. Consider a reconfiguration of the Encinal Tidelands to allow public ownership of the privately held submerged lands and waterfront lands to better provide for public waterfront access and enjoyment and future maritime use.
- **Infrastructure Funding.** Require all new development to fund a fair share proportion of the costs of extending Clement Street from Sherman to Grand and upgrade storm sewer and wastewater facilities to serve all future development within the Northern Waterfront area.

Goal 4: Promote sustainable, high-quality, accessible city design.

Policy LU-24 Universal Design. Continue to promote and require universal design in new construction and rehabilitation to protect the public health, accessibility, and safety of all regardless of ability and ensure equal access to the built environment.

Actions:

- **Principles.** Incorporate universal design principles at every level of planning and design to ensure an inclusive and healthy built environment.
- **Awareness.** Promote and raise awareness about the importance of universal design and building an environment that works for everyone.
- **Universal Design Regulations.** Conduct annual reviews of the City's Universal Design Ordinance to ensure that current best practices of the built and external environment are being used and that implementation is successful in meeting the diverse needs of Alamedans regardless of ability without undue constraints on housing development.

Policy LU-25 Historic Preservation. Promote the preservation, protection and restoration of historic sites, districts, buildings of architectural significance, archaeological resources, and properties and public works.

Actions:

- **City-Owned Buildings.** Preserve, maintain and invest in all City-owned buildings and facilities of architectural, historical or aesthetic merit.
- **Partnerships.** Work in partnership with property owners, Alameda Unified School District, and non-profit organizations, such as the Alameda Architectural Preservation Society (AAPS) to ensure that the City's unique and memorable buildings and landscapes are preserved.
- **Property Owner Awareness.** Continue to work to increase owners' and buyers' awareness of the importance of preservation in protecting community character and identity.
- **Historic Districts and Monuments.** Designate additional Historic Districts and Monuments to recognize areas or sites with significant historic architectural design character or cultural history.
- **Financial and Design Assistance.** Develop financial and design assistance programs to encourage the restoration or preservation of buildings, structures, and sites with architectural, historic or aesthetic merit, such as a Mills Act Program or the Facade Grant Program
- **Demolition Controls.** Maintain demolition controls for historic properties.
- **Alterations.** Require that exterior changes to existing buildings be consistent with the building's existing or original architectural design whenever feasible.
- **Archaeological Resources.** Preserve important archaeological resources from loss or destruction and require development to include appropriate mitigation to protect the quality and integrity of these resources.

Policy LU-26 Architectural Design Excellence. Promote high quality architectural design in all new buildings and additions to complement Alameda’s existing architectural assets and its historic pedestrian and transit-oriented urban fabric.

Actions:

- **Diversity.** Encourage a broad range of architectural styles, building forms, heights, styles, materials, and colors to enhance Alameda’s rich and varied architectural character and create visually interesting architectural landscapes within each neighborhood and district.
- **Creativity.** Encourage and support creative and contemporary architectural design that complements, but does not mimic, existing architectural designs in the neighborhood or district.
- **Harmony.** Harmonize the architectural design of new buildings with the architectural character of the surrounding buildings to create a visually appealing architectural landscape.
- **Human Scale.** Promote accessible, human scaled designs that ensure that ground floors are easily accessible and visually interesting from the public right-of-way by facing buildings toward the street, using higher quality materials at the ground floor, providing pedestrian-scaled lighting, and minimizing the extent of blank walls along ground floor elevations with doorways, windows, art, landscaping, or decorative materials.
- **Regulations and Guidelines.** Promote design excellence by ensuring that City development regulations and design guidelines clearly express the intent and support for creative and innovative design solutions. Guidelines should focus on desired outcomes rather than prohibited outcomes.

Policy LU-27 Neighborhood Design. Protect, enhance and restore Alameda’s diverse neighborhood architecture and landscape design while encouraging design innovation and creativity in new residential buildings and landscapes.

Actions:

- **Architectural and Landscape Design.** Require that neighborhood infill development and alterations to existing residential buildings respect and enhance the architectural and landscape design quality of the neighborhood.
- **City Design Regulations.** Develop regulations, standards and guidelines that express the intended and desired form and functional outcomes as opposed to expressing just the prohibited forms to support and encourage innovative design solutions and high quality design.

Policy LU-28 Retail and Commercial Design. Require that alterations to existing buildings and all new buildings in commercial districts be designed to be pedestrian-oriented and harmonious with the architectural design of the surrounding mixed-use district.

Actions:

- **Park and Webster Street Design.** Continue to support and promote high quality design in the reinvestment in Alameda’s “Front Doors” to ensure the continued vibrancy of these unique city Main Streets for commerce, employment, entertainment, and culture.
- **Contextual Architectural and Landscape Design.** Require varied building facades that are well-articulated, visually appealing at the pedestrian level, and that utilize architectural and landscape design features that respond to the district’s existing architectural and landscape character.
- **Pedestrian Orientation.** Require building entrances (e.g., the entry to a store, or the lobby entry to an office building) to actively engage and complete the public realm (streets, entry plazas or public open spaces) through such features as building orientation, universal design, build-to and setback lines, facade articulation, ground floor transparency and location of parking.
- **Sidewalks.** Provide generous sidewalks, sidewalk lighting, street trees, bus shelters, bicycle racks, and street furniture to promote pedestrian traffic and encourage strolling, window-shopping and sidewalk dining.
- **Public Space for Commercial Use.** Support the use of public on-street parking spaces and public sidewalks for small parklets, sidewalk dining, and other temporary commercial purposes. Avoid the use of fixed, permanent fences and barricades on public sidewalks that permanently privatize the use of the sidewalk for a single business for 24 hours a day.
- **Automobile Parking and Access.** Minimize the number of curb cuts and driveways crossing public sidewalks. Place off-street parking areas behind or beside buildings, but not between the public right-of-way and the front entrance to the building, whenever possible.
- **Signs and Utilities.** Provide well-designed public signage including street signs, directional signs, gateway markers, street banners, and pedestrian-oriented directories. Reduce visual clutter where possible by grouping sign messages and regulating the number, size and design quality of signs. Utility boxes and trash enclosures should be grouped and screened from public view and should not be located adjacent to the public right-of-way unless no other location is available. Alternatively, visible utility boxes should be made attractive with public art.

Policy LU-29 Shopping Center Redevelopment. Redevelop existing automobile-oriented, single-use shopping centers with associated large surface parking areas into transit-oriented, mixed-use centers with multi-family housing.

Actions:

- **Vertical Mixed-Use.** Maintain ground floor commercial retail and service uses, while allowing upper stories to be developed for residential, office, and other uses.

- **Safe, Accessible, and Connected.** *Ensure that the pedestrian, bicycle, transit and automobile network is safe and convenient for all users and well integrated with adjacent off-site networks.*
- **Shared Parking.** *Minimize the amount of land needed for off-street automobile parking by sharing parking between on-site commercial businesses and on-site residents.*
- **Walkable.** *Create walkable, pedestrian-scaled blocks, publicly accessible mid-block and alley pedestrian routes where feasible, and sidewalks generously scaled for pedestrian and wheelchair use with ample street trees, public seating areas, pedestrian lighting, and other amenities to create a safe and convenient pedestrian experience and enhance Alameda’s network of leafy streets.*
- **Gathering Places.** *Provide public, open air, gathering places, such as small parks, plazas, outdoor dining opportunities, or other publicly accessible areas to support a mix of residential, commerce, employment, and cultural uses.*
- **Architecture.** *Require building offsets, window and door recesses, and variations in building heights to create a rich and visually interesting pedestrian level experience.*

Policy LU-30 Waterfront Design. Preserve and enhance Alameda’s waterfronts as important destinations by maximizing waterfront physical and visual access from adjoining neighborhoods and streets and permitting land uses that complement the waterfront setting. (See also Policies LU-6, OS-8 and HS-22).

Actions:

- **High Quality.** *Design new parks, open spaces, and waterfront buildings of exemplary quality, highlighting visual and physical connections to the water’s edge, preserving waterfront historic resources, and complementing the character of adjacent neighborhoods.*
- **Inclusive.** *Design and locate waterfront public spaces and the Bay Trail to be inclusive and welcoming to all.*
- **Climate Sensitive.** *Design public spaces to be micro-climate sensitive, allowing for shelter, wind breaks, sun access and shading.*
- **Public and Safe.** *Ensure that all new waterfront buildings are set back an appropriate distance from the water’s edge, such that the public access and Bay Trail feels public, yet also safe for visitors and Bay Trail users.*
- **Public Access and Building Heights.** *Require a wider public access and separation between the water’s edge and the face of the building for taller buildings. Shorter buildings may be closer to the water’s edge. Taller buildings should be set back further.*
- **Architecture.** *Require that buildings adjacent to the shoreline provide attractive and varied facades that compliment, but do not mimic, the historic maritime character of the waterfront.*

- **Visual and Physical Access.** Maximize visual and physical access to the waterfront from inland neighborhoods by maintaining views and access to the water along streets and other public rights-of-way. Ensure that the placement of and access to utilities do not interfere with physical or visual access to the waterfront
- **Street Grid.** Extend the street grid so that north-south streets continue to the waterfront and provide gateways to the waterfront, while equitably distributing traffic between existing and new neighborhoods, and supporting people walking and bicycling from inland neighborhoods to the waterfront.
- **Climate Adaptation.** Ensure all public investments are designed to accommodate the 50-year sea level rise scenario.

Policy LU-31 Gateway Design. Enhance the design of the gateways into the city.

Actions:

- **Posey-Webster Tubes.** Improve the entry into Alameda and Webster Street by reducing visual clutter from Caltrans signs and signs on adjacent private property and increasing tree planting in the area.
- **Park Street Bridge.** Improve the Park Street entry into Alameda by upgrading the street lighting, street tree canopy, and sidewalk and bike and pedestrian connections on the Park Street side of the bridge. Work with the Downtown Alameda Business Association on its plan for an iconic entry arch near the Park Street Bridge.
- **Miller-Sweeney Bridge and Fruitvale Rail Bridge.** Improve the Fruitvale Avenue entry into Alameda by redesigning Tilden Way to include sidewalks, bicycle facilities, and consistent street tree plantings from Broadway to the Bridge approach. Remove or seismically reinforce the abandoned Fruitvale Rail Bridge, to prevent the risk of collapse on the Miller-Sweeney Bridge in the event of a large earthquake.
- **Bay Farm Island Bridge.** Ensure that the design for Bridgeview Park enhances the Bay Farm Island Bridge entry onto the Main Island. Maintain and enhance the wooden bike/ped bridge.

Policy LU-32 Civic Center Design. Create an identifiable Civic Center District that supports a wide variety of civic, institutional, cultural, office, commercial, retail, and residential uses and provides a transition between the Park Street commercial district to the east and the neighborhoods to the west on Santa Clara and Central Avenues.

Actions:

- **Centerpieces.** Preserve the City Hall, Carnegie Library, and Elks Club buildings as centerpieces of the Civic Center district.
- **Opportunity Sites.** Support and encourage the redevelopment and reuse of the corners opposite City Hall and the Carnegie Building with mixed-use development.

Policy LU-33 Alameda Rail Station Design. Ensure that a future Alameda rail station is designed as an underground, urban station located within the fabric of the existing neighborhood or business district similar to Oakland’s 12th Street and 19th Street BART stations.

Policy LU-34 Parking Design. To maintain the historic character of Alameda and reduce the impact of automobile parking and trips on the environment and character of Alameda, design parking facilities in a manner that decreases their visibility in the urban environment.

Actions:

- **Size.** *Minimize the size and amount of land dedicated to off-street parking.*
- **Design.** *Design parking lots for shared and multiple uses, active parking management, and electric vehicle charging. Parking areas should be well landscaped with shade trees to reduce heat island effects from expansive asphalt surfaces and to screen cars from view. Ensure impacts on Alameda’s stormwater system are minimized.*
- **Location.** *Place parking inside, below, or behind buildings. Avoid placing parking between the building and the public right of way or the waterfront wherever possible.*

PROJECT IMPACTS

Impact 4-1

Implementation of the proposed Alameda General Plan 2040 would not physically divide an established community. (LTS)

Construction of new commercial, office, light industrial, and other development projects allowed under the proposed General Plan would not result in the physical separation of existing communities. No construction of new roads, railroad lines, walls, canals, or other physical features that could create barriers within existing neighborhoods is anticipated, and no removal of the bridges and tunnels that provide critical connections of Alameda to the mainland are planned. To the contrary, the proposed Mobility Element includes a variety of policies intended to increase the connectivity in the City. For example, Policies ME-13 and ME-14 call for a variety of programs and infrastructure improvements intended to enhance cross-island travel for all modes of travel, and Policy ME-15 calls for improved cross-estuary travel for all modes of travel. Policy ME-9 calls for the preservation of access for emergency response vehicles to people and property. Policies ME-5 through ME-8 are all aimed at improving and enhancing pedestrian and/or bicycle access and safety, while Policy ME-10 calls for the overall safe and efficient movement of people, goods, and services. Goal 1 calls for meeting the mobility needs of all Alameda residents, workers, and visitors regardless of income, age, ability, or neighborhood.

One of the supporting actions for Policy ME-10 calls for the maintenance of “complete streets.” Complete streets are well-maintained streets and related infrastructure that are designed to serve not just automobiles, but also pedestrians, bicyclists, and public transit riders, providing safe and

improved access and connectivity in a sustainable way. A supporting Action to Policy LU-2 in the Land Use and City Design Element specifically calls for improved connectivity, and prohibits barriers; it reads as follows:

- **Improve Connectivity.** *Connect neighborhoods and major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure. Prohibit sound walls, gates and other barriers that separate neighborhoods and decrease physical and visual connectivity.*

Similarly, a supporting Action to Policy CC-9 specifically prohibits barriers; it reads as follows:

- **Connectivity and Inclusiveness.** *Connect neighborhoods and major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure. Prohibit sound walls, gates and other barriers that separate neighborhoods and decrease physical and visual connectivity throughout the City.*

The proposed new ferry terminal would also improve on/off-island travel, further enhancing connectivity.

The Land Use and City Design Element includes other policies that would contribute to connectivity and prevent the creation of barriers within the community. These include policies intended to improve public access to waterfront, shoreline, and natural habitat areas; extend trails; and improve the safety of the circulation system (e.g., policies LU-18, LU-19, LU-30, and/or their implementing actions). Policy LU-16 promotes dense mixed-use infill development on vacant and underutilized parcels. Implementation of this policy would help integrate existing neighborhoods, further improving overall connectivity and reducing barriers.

Land Use and City Design Element Policy LU-25 calls for the preservation and reuse of historic buildings, which would contribute to infill development that would not create physical barriers. Similarly, policies LU-21 and LU-23 call for reuse of existing buildings in Alameda Point and on the Northern Waterfront, respectively. A supporting Action to Policy LU-22 supports maximum public access to natural and cultural resources in Alameda Point.

The proposed Conservation and Climate Action Element also includes policies that would improve the connectivity of the City and prevent the creation of barriers. Policy CC-7 calls for improving the local roadway network to support all modes and specifically encourage walking and bicycling in order to reduce greenhouse gas emissions. All of the supporting Actions for this policy would further improve connectivity and prevent the creation of barriers, including the following:

- **Active Transportation Plans.** *Maintain, regularly update and implement bicycle and pedestrian improvement plans identified in the Transportation Element of the General Plan, the Transportation Choices Plan and the Active Transportation Plan.*
- **Prioritize safety.** *Promote the creation of a safe environment for bicycling and walking by establishing a goal of zero annual fatalities and severe injuries for bicyclists and pedestrians using Alameda's roadway network.*

- **Complete streets.** *Ensure that all streets are designed to provide a safe and convenient environment for all modes, including bicyclists, people using mobility devices such as wheelchairs or walkers, and pedestrians. Adequately maintain sidewalk conditions to avoid tripping hazards.*
- **Safe routes to school.** *Increase walking and biking to school by developing and improving safe routes to schools and out-of-school programs.*
- **Mobility for all.** *Prioritize roadway network improvements that increase mobility and equitable access for all residents, especially low-income individuals, youth, seniors, individuals with disabilities, and other vulnerable residents.*
- **Connectivity and Inclusiveness.** *Connect neighborhoods and major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure. Minimize sound walls, gates and other barriers that separate neighborhoods and decrease physical and visual connectivity throughout the City.*
- **Access to the shoreline.** *Expand and improve pedestrian and bicycle access to the waterfront and recreational facilities throughout Alameda.*
- **Access to Oakland.** *Improve connections for all modes, including transit, bicycle and pedestrian connections to Oakland.*
- **West Alameda to Jack London Square Bicycle and Pedestrian Bridge.** *Continue to work with Oakland, Caltrans, the Alameda County Transportation Commission, the State of California, and the US Coast Guard to design, fund, and construct a bike and pedestrian bridge from West Alameda to Jack London Square in Oakland.*

Additionally, supporting Actions for Policy CC-8 are intended to improve transit connections, including connections between bus transit and water transit facilities, establish water shuttle service to and from Oakland, and improve “last mile” connections to improve access to major transportation nodes.

Connectivity would be further enhanced by implementation of policies set forth in the proposed Open Space and Parks Element. Policy OS-7 calls for an interconnected system of parks, open space, commercial recreation, trails, and urban forest that frames and complements the City’s waterfronts, neighborhoods, and commercial areas, and supporting actions are aimed at increasing connectivity. Policy OS-8 is intended to ensure safe and convenient access to the Alameda waterfront from all Alameda neighborhoods, and a supporting Action calls for expansion of the City’s trail system to provide safe on-street connections to link neighborhoods to the closest waterfront shoreline facilities. Other supporting Actions are aimed at increasing shoreline access via schools and new shoreline development and through creation of public boat launches. Other policies in this element call for creation of various trails, all of which would improve access and connectivity.

The proposed Land Use Diagram, which is largely reflective of the existing pattern of land use development in Alameda, would govern future development allowed under the General Plan. The Land Use Diagram is intended to guide in-fill development within the existing, established pattern

of land use development throughout the City. It does not propose new roads or infrastructure that could create barriers within existing neighborhoods, nor does it propose the conversion of established residential or commercial areas to different land uses. Furthermore, as illustrated above, the proposed General Plan includes many policies aimed at improving residents' overall connectivity and access to the transportation network, the shoreline, and natural open space areas. Therefore, this would be a ***less-than-significant impact***.

Mitigation Measure 4-1

None required.

Impact 4-2

Implementation of the proposed *Alameda General Plan 2040* would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (LTS)

The proposed General Plan is intended to allow for and guide future development of new residential, commercial, office, light industrial, and other land uses consistent with City policy and with both the City's *Climate Action and Resiliency Plan (CARP)* adopted in September 2019 and with *Plan Bay Area 2040*, the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the San Francisco Bay Area. The General Plan has been developed specifically to be consistent with and further the implementation of *Plan Bay Area 2040*, which describes where and how the Bay Area can accommodate 820,000 new projected households and 1.3 million new jobs by 2040. While *Plan Bay Area 2040* does not adopt specific policy statements, it does set forth seven primary goals and 13 performance targets for addressing the challenges facing the San Francisco Bay region. They are intended to allow the Bay Area to meet carbon dioxide (CO₂) reduction targets and provide sufficient housing for all of the region's projected population growth, regardless of income. Table LU-1 lists these goals and targets and provides an assessment of how the proposed General Plan is consistent with the goals. In some cases, it is one or more supporting action to a policy that would

Table LU-1
Consistency with *Plan Bay Area 2040* Goals and Performance Targets

Goal	Target	<i>Alameda General Plan 2040</i> Consistency
Climate Protection	1. Reduce per-capita CO ₂ emissions	The following proposed policies would support meeting this target: LU-1, LU-2, LU-7, LU-8, LU-11, LU-12, LU-14 through LU-17, LU-20, LU-27, LU-28, LU-33, CC-1 through CC-19, ME-1, ME-12 through ME-16, OS-10,-OS-12, OS-20, SN-59, SN-60, SN-61
Adequate Housing	2. House the region’s population	The following proposed policies would support meeting this target: LU-5, LU-6, LU-15, LU-16, LU-17, LU-18, LU-20, LU-21, LU-23, LU-25, CC-12
Healthy and Safe Communities	3. Reduce adverse health impacts	The following proposed policies would support meeting this target: LU-2, LU-8, LU-11, LU-12, LU-14, ME-1, ME-9 through ME-16, OS-1, OS-7, OS-21, SN-1 through SN-5, SN-9, SN-10, SN-23, SN-24, SN-29 through SN-37, SN-39 through SN-62
Open Space and Agricultural Preservation	4. Direct development within urban footprint	The following proposed policies would support meeting this target: LU-1, LU-5, LU-6, LU-10, LU-15 through LU-25, LU-32, CC-12
Equitable Access	5. Decrease share of lower-income households’ budgets spend on housing and transportation	The following proposed policies would support meeting this target: LU-1, LU-17, LU-18, LU-21
	6. Increase share of affordable housing	The following proposed policies would support meeting this target: LU-1, LU-17, LU-18, LU-21
	7. Do not increase share of households at risk of displacement	The following proposed policies would support meeting this target: LU-1, LU-17, LU-18, LU-21
Economic Vitality	8. Increase share of jobs accessible in congested conditions	The following proposed policies would support meeting this target: LU-1, LU-2, LU-5, LU-6, LU-8, LU-10, LU-11, LU-15, LU-19, LU-20, LU-21, LU-22, LU-23, LU-25, LU-28, CC-9 through CC-14, ME-1, ME-4, ME-5, ME-6, ME-14

Goal	Target	Alameda General Plan 2040 Consistency
	9. Increase jobs in middle-wage industries	The following proposed policies would support meeting this target: LU-5 through LU-11, LU-13, LU-19 through LU-23
	10. Reduce per-capita delay on freight network	The following proposed policies would support meeting this target: LU-2, LU-8, LU-11, LU-12, LU-15, LU-33, CC-9 through CC-14, ME-1, ME-5, ME-6, ME-8, ME-12, ME-13
Transportation System Effectiveness	11. Increase non-auto mode share	The following proposed policies would support meeting this target: LU-2, LU-11, LU-12, LU-14, LU-15, LU-16, LU-17, LU-18, LU-20, LU-21, LU-22, LU-23, LU-25, LU-30, CC-1, CC-9, CC-10, CC-11, CC-12, ME-1, ME-5, ME-6, ME-10, ME-11, ME-12, ME-13, OS-10
	12. Reduce vehicle operating and maintenance costs due to pavement conditions	The following proposed policies would support meeting this target: CC-9, ME-1, ME-15
	13. Reduce per-rider transit delay due to aged infrastructure	The following proposed policies would support meeting this target: LU-2, LU-15, LU-23, CC-9, CC-10, CC-21, ME-1, ME-2, ME-5, ME-6, ME-11, ME-15

provide the greatest support to *Plan Bay Area 2040* goals and targets, but for the sake of brevity, the guiding policy number is listed in the table. As demonstrated in Table LU-1, there are numerous proposed General Plan policies and/or supporting actions that would contribute to the attainment of the *Plan Bay Area 2040* goals and targets. No potential conflicts with the goals and targets or other provisions of *Plan Bay Area 2040* were identified for the proposed project.

The policy consistency analysis summarized in this impact discussion also reviewed and assessed the consistency of the proposed General Plan with the City of Alameda *Climate Action and Resiliency Plan*. The CARP expands the scope of the City's 2008 Climate Action Plan by adopting an integrated approach consisting of both climate change adaptation and GHG reduction strategies. By combining the goals of GHG reduction and climate adaptation, the CARP maps a strategy for Alameda to take a "Climate Safe Path" which, by lowering GHG emissions, will contribute to the reduction of the climate risks the City would face in the future. At the same time, Alameda is planning to protect itself in case the worst impacts of climate change come to pass despite its best efforts. The combined strategy is intended to achieve co-benefits that reinforce one another, such as the following examples:

- Increasing the number of trees in the City will not only help settle airborne particles during wildfire smoke events, but also remove carbon from the atmosphere and reduce heat impacts.
- Creating transit alternatives like bike routes and ferries that allow Alamedans to avoid the Webster and Posey Tubes will not only reduce GHG emissions from cars, but also make Alamedans less reliant on those flood-prone transportation routes.
- Creating “living shorelines” will not only protect against flooding, but also will sequester carbon, create valuable wildlife habitat, and clean the water in the Bay.

The overall vision of the CARP is to ensure a sustainable and healthy environment, society, and economy. The CARP adopts a variety of new GHG emissions reduction actions that are listed in Table LU-2, along with proposed General Plan policies that are both consistent with the identified GHG reduction action and would contribute to its implementation. No General Plan conflicts with the CARP were identified.

Table LU-2

Consistency with Alameda *Climate Action and Resiliency Plan* GHG Reduction Actions

CARP GHG Emissions Reduction Action	Alameda General Plan 2040 Consistency
Transportation Sector: Mode Shift	
<p>T1. Reduce commute VMT. Encourage employees and employers to reduce commute trips by telecommuting. Develop outreach program and take steps to overcome barriers to implementation, such as eliminating double taxing and providing employer tax incentives. Because telecommuting will reduce VMT from commuters that work in Alameda as well as those that leave the island to work elsewhere, to be successful, this action must include outreach to employers beyond Alameda’s borders. In addition, implement a combination of programs that encourage telecommuting and land use decisions that increase work-live and mixed zoning. As a regional issue, implementation of a telecommuting action will benefit from regional partners such as the Bay Area Commuter Benefits Program (CBP) (see https://511.org/employers/commuter/news). Because the CBP has access to all Bay Area employers with 50 or more employees, coordination with the program may help overcome some of the barriers to outreach.</p>	<p>The following proposed policies would support meeting this target: LU-1, LU-5, LU-6, LU-8, LU-10 through LU-21, LU-23, LU-25, CC-1, CC-4, CC-12, CC-13, CC-14</p>
<p>T2. Build additional bike lanes. Expand TCP project/programs by adding more dedicated and protected bike lanes and making pedestrian/bicycle improvements that increase safety, make it easier for people to use these modes, and connect residential</p>	<p>The following proposed policies would support meeting this target: LU-1, LU-2, LU-20, LU-22, LU-23, LU-25, LU-28, LU-30, LU-31, CC-9, CC-10, CC-12, ME-1, ME-3, ME-5, ME-6, ME-9 through ME-13, OS-5, OS-7, OS-8,</p>

CARP GHG Emissions Reduction Action	<i>Alameda General Plan 2040 Consistency</i>
neighborhoods with commercial centers and workplaces.	OS-9 OS-10 OS-14, OS-17, OS-18, OS-19, OS-20, OS-22
T3. Traffic signal synchronization. By 2030, improve synchronized timing of 25 traffic lights to improve traffic flow by slowing vehicle speeds and reducing idling. Work with the City of Oakland to explore traffic signal synchronization opportunities in relevant parts of Oakland’s jurisdiction.	The following proposed policies would support meeting this target: ME-1, ME-5, ME-9, ME-11
T4. Expand EasyPass program. Provide 5,000 additional passes by 2030.	The following proposed policies would support meeting this target: CC-10, ME-1, ME-2
T5. Ban gas-powered leaf blowers. Ban gas-powered leaf blowers in the City of Alameda.	Although no proposed General Plan policies specifically address this target, Policy CC-4, calling for the City to take actions to become a net zero GHG community and to implement the CARP, which establishes Target T5, would be generally supportive of this target.
Transportation Sector: Vehicle Electrification	
T6. Increase availability of EV charging stations citywide. Ensure that all new developments with parking lots install charging stations for residents and/or customers. Streamline permitting processes for existing homeowners and business owners who wish to install charging stations. Add public charging stations in all City-owned parking lots. Allow residents to rent their driveways and private EV chargers to renters who do not have access to convenient charging.	The following proposed policies would support meeting this target: LU-12, LU-14, LU-33, CC-4, CC-8, ME-12
T7. Promote purchase of LEVs [low-emission vehicles] and ZEVs [zero-emission vehicles]. Implement communications and outreach activities to promote the acquisition of light-duty EVs. The program could be modeled after California-based or federal Clean Cities programs in terms of promotional activities and structure. A five-year program is adequate for supporting early EV market liftoff locally. AMP [Alameda Municipal Power] participation in such a program is subject to PUB [Public Utilities Board] approval.	Although no proposed General Plan policies specifically address this target, Policy CC-4, calling for the City to take actions to become a net-zero GHG community and to implement the CARP, which establishes Target T7, would be generally supportive of this target. Additionally, policies LU-12, encouraging businesses to utilize electric vehicles; CC-8, calling for promotion of LEVs and ZEVs, and requiring them when appropriate; and ME-12, calling for reduction of greenhouse gas emissions from vehicles—are all supportive of Target T7.
T8. Continue programs to encourage new EV purchases. Encourage EV ownership by promoting a manufacturer’s suggested retail price rebate (\$2,000 for each new EV purchase). Also, emphasize continuation of programs	The following proposed policies would support meeting this target: LU-12, CC-8. Policy ME-12 aims to increase the availability of publicly-accessible EV charging stations and

CARP GHG Emissions Reduction Action	Alameda General Plan 2040 Consistency
<p>from AMP, subject to PUB approval, to provide electricity rate discounts (\$0/06/kilowatt-hour [kWh] per EV owner) and rebates to residential and non-residential customers who purchase a Level 2 EV charging station. AMP staff are currently developing more EV initiatives and will be taking the various programs to the PUB for approval in the coming year. Allow curbside charger installations for EV owners without assigned off-street parking.</p>	<p>require all developments with new parking lots to provide EV charging stations, so this policy is also broadly supportive of Target T8, as is Policy CC-4, calling for implementation of the CARP, which establishes Target T8.</p>
<p>T9. Continue to encourage businesses to install EV charging station. Implement communications and outreach activities to encourage workplaces and businesses to install EV charging systems. This will provide more destination charging options for EV owners, thereby addressing range anxiety fears for current and prospective EV owners. Businesses can take advantage of AMP’s current charger rebates.</p>	<p>The following proposed policies would support meeting this target: LU-12, LU-33, CC-8, ME-12</p>
<p>T10. Electrify City’s fleet. Convert the light-duty portion of the City’s vehicle fleet to EVs and right-size the fleet.</p>	<p>The following proposed policies would support meeting this target: CC-8, ME-12</p>
<p>Energy Use in Buildings</p>	
<p>E1. “Fuel switch” in existing buildings. Convert natural gas consumption to electricity use in residential and commercial buildings. Require fuel switching from natural gas-powered appliances and heating to electric-powered appliances and heating when existing residential buildings are being substantially expanded. Draft ordinance to establish fuel switching requirements. If all-electric construction is more expensive than units with gas utilities, consider exemptions for 100% affordable housing projects. The City of Alameda will support programs that encourage homeowners/commercial building owners to implement electrification retrofits.</p>	<p>The following proposed policies would support meeting this target: CC-4, CC-6, CC-7, CC-15, CC-16, CC-17</p>
<p>E2. Electrification of new residential construction. Prepare ordinances requiring all new residential construction to be 100% electric-powered with no gas hookups.</p>	<p>The following proposed policies would support meeting this target: CC-15, CC-16, CC-17</p>
<p>E3. Programs to encourage fuel switching in certain appliances. Encourage the PUB to continue implementing AMP rebate programs encouraging residential customers to install ENERGY STAR-labeled electric clothes dryers and electric heat pump water heaters.</p>	<p>Other than Policy CC-4, calling for implementation of the CARP, which establishes Target E3, no policies specifically supportive of this target were identified.</p>

CARP GHG Emissions Reduction Action	<i>Alameda General Plan 2040 Consistency</i>
<p>E4. Green roof installations on new developments at Alameda Point. Require at least 10% of roof areas on new development in Alameda Point to be installed as green roofs. This action aligns with the Alameda Point Stormwater Management Plan requirements.</p>	<p>Policies CC-23 and CC-31 are supportive of this target. Policy CC-4, calling for implementation of the CARP, which establishes Target E4, is also generally supportive of this target.</p>
Sequestration	
<p>S1. Apply compost to Alameda parks and open spaces. Diverted organic waste will be processed into compost that will be used in Alameda parks and other open spaces, such as preserved areas in Alameda Point.</p>	<p>Policy CC-19 is supportive of this target. Policy CC-4, calling for implementation of the CARP, which establishes Target S1, is also generally supportive of this target.</p>
<p>S2. Further develop urban forest. Plant more trees in Alameda, increase landscaped islands, replace damaged trees, and make carbon sequestration a higher priority for the landscape maintenance contract. This action estimates the sequestration potential of planting 1,500 new trees in Alameda, in addition to the 2,000 new trees by 2030 that are already part of already committed to actions. The 1,500 new trees will comprise planting by the City and the public. The public will be incentivized by a volume discount to be negotiated by the City with local nurseries. Vouchers for the trees may also be available.</p>	<p>The following proposed policies would support meeting this target: LU-2, LU-28, LU-33, CC-5, OS-14</p>

In addition to the GHG emissions reduction actions listed above, the CARP establishes the following goals for adapting to the adverse effects from climate change:

- **Sea level rise and storm surge.** Protect assets from sea level rise and storm surge, plan future land use to avoid impacts, and enhance natural shoreline habitat to mitigate impacts.
- **Inland flooding.** Increase resiliency and capacity of the stormwater system to prevent flooding of assets during extreme precipitation events.
- **Drought.** Reduce water consumption and increase drought-resistant landscaping.
- **Extreme heat.** Reduce heat island effect and protect vulnerable populations from heat impacts during heat waves.
- **Wildfires.** Protect public health from smoke impacts during wildfire events, especially among vulnerable populations.
- **Liquefaction/earthquakes.** Ensure building and infrastructure retrofit and new design standards in areas at high risk of liquefaction consider both seismic risk and sea level rise impacts.

To accomplish these goals, the CARP includes detailed adaptation-focused strategies and actions, and identifies priority assets for protection, including shoreline, natural, and recreation areas; utilities; and transportation facilities, such as the Posey/Webster tubes and critical and high-use

roadways used by AC Transit. The majority of the policies in the proposed Safety and Noise Element are supportive of one or more of these adaptation goals, either directly or peripherally. The following policies from the Conservation and Climate Action Element are also supportive of the CARP adaptation goals: CC-2 through CC-24, CC-26, CC-27, CC-32, CC-33, and CC-34. The following policies from the Open Space and Parks Element are supportive of the adaptation goals: OS-1, OS-9, OS-11, OS-12, and OS-16.

The proposed *Alameda General Plan 2040* is internally consistent, in that there are no goals, objectives, policies, or actions that are mutually exclusive or that would conflict with other goals, objectives, policies, or actions, either within the same element or within other elements. Once adopted, the *Alameda General Plan 2040* will supersede the City's existing General Plan, which covered the planning period from 1990 to 2010. Pursuant to State planning law, the City may need to update its zoning ordinance to ensure consistency with the adopted General Plan. As demonstrated in the preceding analysis, the proposed *Alameda General Plan 2040* would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This would be a ***less-than-significant impact***.

Mitigation Measure 4-2

None required.

CUMULATIVE IMPACTS

Cumulative projects in the San Francisco Bay region would have the potential to result in a cumulative impact if they would, in combination, conflict with existing land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental impact. However, cumulative projects in the region would utilize the applicable local planning documents, including the general plan and climate action plan/greenhouse gas reduction plan, as well as regional planning documents such as *Plan Bay Area 2040*, during the planning and approval process. Similar to the *Alameda General Plan 2040*, the general plans of cities would need to be consistent with the regional plans, to the extent that they are applicable. Cumulative projects in these jurisdictions would be required to comply with the applicable land use plan or they would not be approved without a general plan amendment. Since the proposed *Alameda General Plan 2040* would not conflict with existing land use plans, policies, or regulations applicable to the City of Alameda, implementation of the proposed General Plan would not make a cumulatively considerable contribution to a significant cumulative impact.

5. POPULATION AND HOUSING

5.1 Introduction

This chapter describes the existing population, housing, and employment characteristics of the City of Alameda and evaluates the effects that implementation of the *Alameda General Plan 2040* may have on the City's population, housing, and employment opportunities. While direct socioeconomic effects such as the creation of new jobs are not considered environmental impacts under CEQA, secondary effects that have an adverse impact on the physical environment must be considered. Many of the secondary effects from the growth in population, housing units, and jobs that will occur under the proposed General Plan are addressed in other technical chapters, such as Chapter 10 (Traffic and Transportation), Chapter 11 (Air Quality), and Chapter 12 (Greenhouse Gases), among numerous others. This chapter focuses specifically on population, housing, and employment characteristics.

5.2 Setting

REGULATORY FRAMEWORK

State

State Housing Element Law

California's housing element law, codified at Government Code Sections 65580-65589.11, establishes the Legislature's intention to ensure the availability of suitable, decent housing for every Californian, including farmworkers, and ensure the provision of housing that is affordable to low- and moderate-income households. State planning law requires cities and counties to prepare and implement general plan housing elements that, along with federal and State programs, will move toward attainment of those housing goals, which were established in 1969. The California Department of Housing and Community Development (HCD) states that "housing policy in California rests largely on the effective implementation of local general plans and, in particular, local housing elements."¹

Housing elements are required to provide an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement, and development of housing. The Housing

¹ California Department of Housing and Community Development, Regional Housing Needs Allocation and Housing Elements, accessed October 2, 2020 at: <https://hcd.ca.gov/community-development/housing-element/index.shtml>.

Element must identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and must include adequate provision for the existing and projected needs of all economic segments of the community. Projected housing needs are to be based on an analysis of population and employment trends and projections for the jurisdiction, and these needs must include the locale's share of the regional housing need as established by the HCD (see below).

Government Code Section 65588 requires housing elements to be updated as frequently as appropriate to evaluate the jurisdiction's effectiveness in meeting the community's housing goals and objectives, but no less often than a five- or eight-year interval, as stipulated in Section 65588 for each regional council of governments. In Alameda, which is part of the Association of Bay Area Governments (ABAG), the housing element must be updated every eight years.

Regional Housing Needs Allocation

The California Housing Element Law discussed above includes a requirement, promulgated at Government Code Section 65584, for the HCD to determine the existing and projected need for housing in each region of the State. The HCD must prepare and adopt a Regional Housing Needs Allocation (RHNA) Plan that allocates a share of the regional housing need to each city and county. The RHNA Plan specifies the number of units, by affordability level, that need to be accommodated within the region during the Housing Element planning period. The COGs then distribute a share of the region's housing need to each city, town, and county in the region. Each local government must then update the Housing Element of its general plan to inventory housing sites—zoned for residential use—sufficient to meet their RHNA.

The current *City of Alameda General Plan Housing Element 2015-2023* adopted in August 2014 accommodates a RHNA of 1,723 units. As stated in the Housing Element, the identified sites are sufficient to meet the State-mandated RHNA requirements, but they do not represent the full extent of Alameda's available housing sites. The 2015-2023 Housing Element includes housing goals, policies, and implementation programs to guide the City's future housing development decisions, housing programs, strategies, and expenditures for the 2015-2023 planning period.

In 2020, the City received its initial preliminary RHNA for the period 2023-2031 from ABAG. The final RHNA will not be finalized until summer 2021, but the initial estimate provided by ABAG projects that the City of Alameda will need to accommodate approximately 5,400 units over the period 2023-2031.

Regional

Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

As noted above, the City of Alameda is part of the ABAG, which functions as the Council of Governments (COG) for Alameda, Contra Costa, Marin, Napa, Sonoma, San Francisco, San Mateo, Santa Clara, and Solano counties. The Metropolitan Transportation Commission (MTC) serves as the Metropolitan Planning Organization (MPO) for the same nine-county region. Together, ABAG and

MTC are responsible for implementing *Plan Bay Area 2040*, the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which is a regional strategy for accommodating household and employment growth projected to occur in the Bay Area region through 2040. The Sustainable Communities and Climate Protection Act of 2008 (SB 375) required each of the State's 18 MPOs to prepare an RTP/SCS that will enable the affected region to achieve the greenhouse gas (GHG) reduction goals established by Assembly Bill 32, passed in 2006, and ensure the provision of adequate housing for growth projected during the planning period. *Plan Bay Area 2040*, adopted on July 26, 2017, is an update to the previous RTP/SCS adopted by ABAG and MTC in 2013.

This current RTP/SCS describes where and how the Bay Area can accommodate 820,000 new projected households and 1.3 million new jobs by 2040. The *Plan Bay Area 2040's* 7 goals and 13 performance targets to promote economic vitality, ensure social equity, and protect the environment link to the policy framework established in the *California Transportation Plan 2040* by the California Department of Transportation. Central to both plans are carbon dioxide (CO₂) emissions reduction targets designed to tackle climate change in the years to come. Both plans prioritize fixing an aging transportation system, appropriately focusing future growth, and increasing the share of non-auto modes of travel. While *Plan Bay Area 2040* sets forth a range of policy strategies for achieving the housing, air quality, and transportation goals, it is not prescriptive or enforceable, and does not alter the RHNA numbers allocated to Bay Area cities and counties.

Planning is currently underway for *Plan Bay Area 2050*, which will build on *Plan Bay Area 2040* while expanding the transportation, housing, economic, and environmental strategies for accommodating future growth in the Bay Area, attempting to maximize resilience and social equity. The Draft *Plan Bay Area 2050* describes where and how the Bay Area can accommodate 1.3 million new projected households and 1.4 million new jobs by 2050. A blueprint of 35 strategies designed to accommodate 1.5 million new homes (necessary to house the anticipated expanded population and address overcrowding) and 1.4 million new jobs identified in the Regional Growth Forecast has already been developed and adopted by MTC and ABAG in September 2020. A Draft EIR is currently being prepared that is scheduled for public review in Spring 2021, followed by certification of a Final EIR in the Fall of 2021. The final phase, also expected to be completed in Fall 2021, is an Implementation Plan that will define specific near-term actions for ABAG, MTC, and partners to advance each of the strategies adopted in the Final Blueprint, focusing on the next five years, and intended to make the Bay Area more equitable and resilient in the future.

EXISTING CONDITIONS

Population and Demographics

Data provided by the U.S. Census Bureau's American Community Survey indicates that the City of Alameda's population grew by 4.9 percent between 2010 and 2019, from 73,981 residents to

77,630 residents.² The California Department of Finance reported a larger 2019 population of 81,618 residents as of January 1, 2019, which dropped slightly to 81,312 as of January 1, 2020.³ *Plan Bay Area 2040* projects the City's population to increase to 90,560 residents by 2030 and to 92,465 residents by 2040, representing an increase of 13.7 percent compared to the estimated 2020 population.⁴ The Draft *Plan Bay Area 2050* does not break down population projections by city, but it does project the number of households in Northwest Alameda County—which includes the cities of Alameda, Piedmont, and Oakland—to increase from 73,000 to 115,000 between 2015 and 2050 contributing a 3-percent share of the expected regional growth.^{5, 6}

As shown in Table POP-1, the balance of male and female population in the City has shifted since 2010. Whereas females comprised 52.8 percent of the City's population in 2010, their share of the total population had dropped to 49.4 percent of the total in 2019. Racially, in 2019 the City's population was 45 percent White, 32.5 percent Asian, 11.5 percent Hispanic/Latino, 8.3 percent Black/African American, 0.5 percent American Indian or Alaska Native, and 0.1 percent Native Hawaiian or Pacific Islander. It is noteworthy that the City's small Native Hawaiian/Pacific Islander population declined by over 90 percent between 2010 and 2019, while the American Indian/Alaska Native population surged by 56.6 percent.

ABAG estimated there were approximately 32,400 jobs in Alameda in 2015, with roughly a third of them in information, government, and construction. Other sectors providing substantial numbers of jobs were financial and professional services and health, educational, and recreational services. Manufacturing, wholesale, and transportation made up a little over 10 percent of the total jobs, while retail jobs comprised 6.8 percent of the total. A breakdown of the jobs in 2015, by sector, is presented in Table POP-2.

Housing

Department of Finance data show that Alameda has 33,147 housing units in 2020, of which, 13,998 are detached single-family homes, 3,417 are townhomes, and 15,605 are multi-family units.⁷ The Citywide average household size in 2020 is 2.51 persons per dwelling unit. The Census Bureau's

² United States Census Bureau, American Community Survey, Table DP05: ACS Demographic and Housing Estimates, 2010 and 2019 ACS 1-Year Estimates Data Profiles, Alameda City, California, Accessed October 3, 2020 at: <https://data.census.gov/cedsci/table?q=alameda%20city,%20ca&tid=ACSDP1Y2019.DP05&hidePreview=false>.

³ California Department of Finance, Table E-1: Population Estimates for Cities, Counties, and the State—January 1 2019 and 2020, May 2020.

⁴ Association of Bay Area Governments, *Plan Bay Area: Projections 2040, A Companion to Plan Bay Area 2040*, November 2018, Accessed October 3, 2020 at: <https://abag.ca.gov/our-work/economic-analysis/forecasts-projections>.

⁵ Dave Vautin, AICP, Assistant Director, Major Plans, Bay Area Metro (ABAG & MTC), personal communication, December 27, 2020.

⁶ Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area 2050: The Final Blueprint: Growth Pattern*, Projected Household and Job Growth by Superdistrict [table], Accessed December 27, 2020 at: <https://abag.ca.gov/our-work/economic-analysis/forecasts-projections>.

⁷ California Department of Finance, Table I: E-5 City/County Population and Housing Estimates, January 1, 2020.

American Community Survey reports the median value of owner-occupied units in 2019 was \$882,100, while median monthly rents were \$1,982.⁸

Table POP-1
Alameda Population and Housing Estimates

Characteristic	2010	Percentage of Total	2019	Percentage of Total	Percent Change 2010-2019
Total Population	73,981		77,630		4.9%
Male Population	34,930	47.2%	39,256	50.6%	12.4%
Female Population	39,051	52.8%	38,374	49.4%	-1.7%
One Race	69,228	93.6%	71,162	91.7%	2.8%
Two or More Races	4,753	6.4%	6,468	8.3%	36.1%
One Race					
White	34,074	46.1%	34,922	45.0%	2.5%
Hispanic/Latino	9,035	12.2%	8,951	11.5%	-0.9%
Black/African American	6,738	9.1%	6,467	8.3%	-4.0%
Asian	24,442	33.0%	25,234	32.5%	3.2%
American Indian/ Alaska Native	267	0.4%	418	0.5%	56.6%
Native Hawaiian/ Pacific Islander	999	1.4%	96	0.1%	-90.4%
Housing Units	30,713		33,241		8.2%

Source: U.S. Census Bureau, 2020

⁸ United States Census Bureau, American Community Survey, Table DP04: Selected Housing Characteristics, 2019 ACS 1-Year Estimates Data Profiles, Alameda City, California, Accessed March 12, 2021 at: [https://data.census.gov/cedsci/table?q=monthly rent in Alameda, CA&tid=ACSDP1Y2019.DP04&hidePreview=false](https://data.census.gov/cedsci/table?q=monthly%20rent%20in%20Alameda,%20CA&tid=ACSDP1Y2019.DP04&hidePreview=false).

Table POP-2
Alameda Employment in 2015, by Sector

Employment Sector	Number of Jobs in 2015	Percentage of Total
Agriculture and Natural Resources	15	0.05%
Financial and Professional Services	6,820	21.05%
Health, Educational, and Recreational Services	8,930	27.57%
Manufacturing, Wholesale, and Transportation	3,420	10.56%
Information, Government, and Construction	11,000	33.96%
Retail	2,210	6.82%
Total	32,395	100.00%

Source: Association of Bay Area Governments, 2018

Jobs/Housing Balance

The jobs/housing balance is a ratio of the number of jobs to the number of housing units within a jurisdiction, where a ratio of 1.0 is optimal, reflecting an equal number of jobs and housing units. Although lower or higher ratios may indicate an imbalance, resulting in the inbound or outbound movement of commuters to the available jobs, they may also reflect the reality that many households have multiple workers. However, in general, an area that has more jobs than available housing will experience upward pressure on housing costs and a greater number of commuters traveling to and from the community to access the jobs. Conversely, if the balance is weighted toward housing supply, more residents will be required to commute outside the community for work. When the jobs/housing ratio is unbalanced in either direction, commuter activity adds to traffic generation and associated emissions of air pollutants and greenhouse gases.

Based on ABAG’s estimated 34,320 households and 38,905 jobs in 2020, the City had a jobs/housing ratio of 1.13. By comparison, Alameda County had a jobs/housing ratio of 1.40 in 2020.

5.3 Standards of Significance

Based on Appendix G of the *CEQA Guidelines*, a project would have a significant population and housing impact if it would induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through

extension of roads or other infrastructure) or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.⁹ These standards of significance are adopted for use in this EIR.

5.4 Impacts and Mitigation Measures

The assessment of population and housing impacts identified in this chapter is based on the standards of significance listed in Section 5.3. This section identifies population and housing impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan. The analysis does not address the 2015-2023 Housing Element because that document was previously adopted in 2014 and underwent separate environmental review prior to its adoption by the City. However, the following previously adopted goals and policies from the 2015-2023 Housing Element are relevant to the following analysis of population and housing impacts:

- Goal 1:** Provide housing services and opportunities to support, maintain, and enhance Alameda’s diverse community and excellent quality of life and provide for the housing needs of Alameda's future residents and regional housing needs.
- Policy HE-1** Support public and private efforts to increase the supply of housing in Alameda consistent with the City's environmental, climate action, transportation, historic preservation, and economic development policy objectives.
- Goal 2:** Provide housing that meets the City’s diverse housing needs, specifically including affordable housing, special needs housing, and senior housing.
- Policy HE-2** Expand the City’s supply of affordable rental and ownership housing for extremely low-, very low-, low-, and moderate-income households.
- Policy HE-3** Create rental, homeownership, and other housing opportunities for special needs populations such as the elderly, homeless and people at risk of becoming homeless, people with physical and/or developmental disabilities, single-parent households, and young adults.
- Policy HE-4** Encourage and support new residential opportunities for senior citizens, including senior housing projects, multifamily housing projects with accessible and small housing units, assisted living projects, and in-law unit projects.
- Policy HE-5** Ensure that the entitlement process, zoning and parking requirements, and impact fees do not unnecessarily burden the development of affordable housing units.
- Policy HE-6** Assist people, especially extremely low-, very low-, low-, and moderate-income households, in purchasing their first home with the goal of increasing homeownership rates in Alameda to 60%.
- Policy HE-7** Promote the conservation and rehabilitation of the City’s existing housing stock.

⁹ Governor’s Office of Planning and Research, *CEQA Guidelines*, Appendix G, Section XIV, as amended December 28, 2018.

- Policy HE-8** Promote the elimination of overcrowded, unsafe, and unsanitary housing conditions.
- Policy HE-9** Ensure equal housing opportunities by taking appropriate actions, when necessary, to prevent housing discrimination in the local market.
- Goal 3: Create transit oriented pedestrian friendly neighborhoods to reduce regional and local greenhouse gas emissions and local traffic congestion.**
- Policy HE-10** To reduce greenhouse gas emissions and improve regional transportation services and facilities, facilitate and encourage mixed-use and residential development in the Northern Waterfront area and at Alameda Point consistent with Plan Bay Area, the regional sustainable communities' strategy.
- Policy HE-11** Facilitate and encourage live/work developments and residential development above ground floor commercial uses on Park Street, Webster Street, and in former "station" neighborhood commercial areas on existing transit corridors to reduce greenhouse gases and traffic congestion and support economic development policies.
- Goal 4: Ensure High Quality Architectural and Sustainable Site Design.**
- Policy HE-12** Ensure that new residential development utilizes "green" building strategies, environmentally sensitive building technologies, and site planning strategies to minimize greenhouse gas emissions.
- Policy HE-13** Encourage public participation of all segments of the community, including low- and moderate-income residents, the business sector, renters and homeowners, in the formulation and review of City housing policy.
- Policy HE-14** Maintain the integrity of existing residential neighborhoods by protecting and enhancing the historic architecture and ensuring that new development complements the density, and physical and aesthetic character of the neighborhood and surrounding areas.
- Policy HE-15** Ensure that new neighborhoods seamlessly integrate with older residential neighborhoods by designing new housing developments that complement, but not mimic, the historic, architectural, aesthetic, and physical qualities of existing neighborhoods.

The Housing Element also includes numerous implementation programs in support of these goals and policies.

In addition to the existing 2015-2023 Housing Element goals and policies listed above, the proposed Land Use and City Design Element of the *Alameda General Plan 2040* identifies the objectives and policies necessary to maintain and enhance Alameda's unique pedestrian-oriented residential neighborhoods, transit-oriented commercial districts and employment areas, and network of open spaces and parks. They are also intended to make Alameda a more environmentally sustainable, resilient, economically vibrant, socially equitable, and healthy community.

Specific policies and actions of the Land Use and City Design Element that would reduce impacts to population and housing include the following:

Goal 1 Maintain and enhance safe, healthy, sustainable, complete and connected neighborhoods that support a high quality of life and fair and equitable access to affordable housing, employment, education, recreation, transportation, services, and participation in public decision making.

Policy LU-1 **Inclusive and Equitable Land Use and City Design.** Promote inclusive and equitable land use plans, policies, zoning regulations, and planning processes.

Actions:

- **Equitable Plans.** *Ensure that citywide and neighborhood plans are inclusive, nondiscriminatory, and culturally responsive. Plans should reduce disparities, promote equitable access, minimize the impacts of income disparity, minimize displacement and promote fair access to affordable housing.*
- **Exclusionary and Discriminatory Policies.** *Rescind existing policies, programs, or development standards that are exclusionary or discriminatory.*
- **Equitable Distribution.** *Ensure that the uses, facilities, and services that are needed for a high quality of life are distributed equitably throughout the city.*
- **Inclusive Processes.** *Ensure robust community involvement in all city planning, public investment, and development review decision making by actively engaging all segments of the community, especially those that have historically been less engaged in city decision-making such as lower-income families, people of color, and youth.*
- **Equal Representation.** *Encourage a cross section of the community in the appointments for commissions and other boards and advisory committees.*

Policy LU-2 **Complete Neighborhoods.** Maintain complete, safe, healthy, and connected neighborhoods that support a mix of uses and meet the needs of residents of all ages, all physical abilities, and all incomes.

Actions:

- **Healthy Neighborhoods.** *Provide equitable and safe access to housing, parks and recreation facilities, community services, public health services, schools, child care facilities, and neighborhood amenities in all neighborhoods.*
- **Parks and Open Space.** *Provide a comprehensive and integrated system of parks, trails, open space, and commercial recreation facilities within a safe and comfortable 1/4 mile walk from all neighborhoods.*
- **Water Access.** *Provide convenient and safe bicycle and walking access to the waterfront from all residential neighborhoods.*
- **Accessory Dwelling Units.** *Permit accessory dwelling units in all residential and mixed-use zoning districts to increase the supply of small, more affordable housing units.*

- **Affordable Housing.** Permit rental and ownership housing opportunities for all income levels, ages and family types and sizes in all residential and mixed-use zoning districts.
- **Multi-family and Shared Housing.** Permit multi-family and shared housing opportunities, including co-housing, congregate housing, senior assisted living, single room occupancy housing, transitional housing, emergency warming shelters, and shelters for the homeless in all Medium-Density residential zoning districts and in all three of the Mixed-Use Land Use Classification zoning districts to provide for the housing needs of all Alamedans.
- **Child Care.** Permit child care facilities and services in all residential and mixed-use zoning districts.
- **Cottage Business and Home Occupations.** Permit small and employment and business opportunities such as home occupations, live-work, and “cottage” businesses in all residential and mixed-use zoning districts to reduce commute hour traffic and associated greenhouse gas emissions.
- **Local Food.** Permit farmers’ markets and community gardens in all residential and mixed-use zoning districts to increase access to healthy foods for all residents throughout the city.

Policy LU-4 Neighborhood Transitions. Ensure sensitive well designed transitions between neighborhoods and adjoining business districts to minimize nuisances while encouraging mixed-use development that provides commercial services or employment opportunities in close proximity to neighborhoods.

Policy LU-5 Neighborhood Mixed-Use. Maintain, promote and support neighborhood-oriented business districts to provide local-serving retail and commercial uses with multi-family housing opportunities above the ground floor commercial uses.

Actions:

- **Neighborhood Serving Commercial Uses.** Permit continuation and re-investment in existing, small, legal nonconforming neighborhood-serving commercial uses in commercial buildings that predate the zoning code.
- **Neighborhood Serving Retail Uses.** Permit neighborhood serving retail uses in residential districts where office uses are already permitted.

Policy LU-6 Waterfront Mixed-Use. Provide a wide variety of maritime, commercial, residential, civic, and recreational uses along the waterfront that compliment maritime activities, provide economic opportunities and jobs, and draw residents and visitors to the shore.

Actions:

- **Water Dependent Businesses.** Prioritize the current and future needs of public ferry systems, water taxis and shuttles, recreational and boating businesses, and other businesses and activities that require a waterfront location to operate.

- **Supporting Services.** Permit complementary maritime serving and visitor serving commercial services and uses to support the public waterfront access and maritime businesses on the waterfront.
- **Public Access and Bay Trail.** Ensure waterfront public access and Bay Trail improvements in all new waterfront development.

- Goal 2** Strengthen and diversify the Alameda business community and economy.
- Policy LU-9** **On-Island Goods and Services.** Encourage the development of a broad range of commercial businesses and services in Alameda to provide for the diverse needs of the Alameda community and reduce the need to travel off-island to acquire goods and services.
- Policy LU-10** **Two “Main Streets.”** Support, promote and preserve Park and Webster Streets as the city’s two iconic and vibrant “Main Streets” providing Alamedans with a broad mix of local restaurants, stores, entertainment, hospitality, and personal and professional services.
- Actions:**
- **Business District Partnerships.** Work in partnership with the West Alameda Businesses Association and the Downtown Alameda Business Association to support, strengthen, and diversify the Park and Webster Streets commercial mixed-use districts.
 - **Facade Improvement Programs.** Provide support for private property owners through facade improvement programs and streamlined permitting processes to improve their buildings and facades and support the overall attractiveness and success of the business district.
- Policy LU-11** **On-Island Employment.** Increase on-island employment to provide additional employment opportunities for Alameda residents, reduce commute hour congestion, and reduce transportation related greenhouse gas emissions.
- Policy LU-12** **Business and Employment Preservation.** Protect and preserve Business and Employment and Maritime Commercial and Industrial Areas by prohibiting introduction of residential uses and discouraging the rezoning of property in these areas to allow residential use.
- Goal 3** Make Alameda a more sustainable and environmentally sensitive community.
- Policy LU-15** **Housing Needs.** Provide land appropriately zoned to accommodate the local and regional affordable housing need and support the region’s Sustainable Communities Strategy to address climate change as well as housing needs.
- Policy LU-16** **Climate-Friendly, Transit-Oriented Mixed-Use Development.** Promote and support dense mixed-use infill development on vacant and underutilized parcels in the Mixed- Use, Community Mixed-Use, Neighborhood Mixed-Use, and Medium-Density Residential areas. Permit higher-density, multi-family and mixed-use development on sites within walking distance of commercial and high quality transit services to reduce automobile dependence, automobile congestion, greenhouse gas emissions, and energy use; provide for affordable housing; make efficient use of land; and support climate friendly modes of transportation, such as walking, bicycling, and transit use.

Actions:

- **Transit-Oriented Zoning.** To support additional ferry service, bus services, and future rail service in Alameda, amend the zoning code to allow for higher-density, mixed-use, multi-family housing in transit-rich locations.
- **Mixed-Use Shopping Centers.** Amend the zoning code to facilitate the redevelopment and reinvestment in Alameda’s single-use retail shopping centers and large open parking lots with higher density mixed use development with ground floor commercial, service, and office uses, and upper floor multi-family housing.
- **Incentives.** Utilize strategic infrastructure investments, public lands, public/private partnerships, and density bonuses and waivers to incentivize and support mixed-use, transit-oriented development in transit rich locations.
- **Transportation Demand Management Programs.** Require new developments to include transportation services and facilities to support the City’s mode shift goals.
- **Parking Requirements.** Amend the Municipal Code to replace minimum parking requirements with maximum parking requirements to disincentivise automobile ownership and reduce construction housing and land costs to help make housing more affordable.

Policy LU-18 Alameda Point Waterfront and Town Center Mixed-Use District. Consistent with the Waterfront and Town Center Specific Plan, create a compact, transit-oriented mixed-use urban core and vibrant waterfront experience that leverages the unique character and existing assets of the area to catalyze a transformation of the larger Alameda Point area.

Actions:

- **Mixed-Use.** Create a pedestrian, bicycle, and transit supportive mixed-use urban waterfront environment designed to provide for a mix of uses that include waterfront and visitor-serving uses, retail, service, entertainment, lodging, recreational, and medium to high-density residential.
- **Seaplane Lagoon.** Permit uses that promote pedestrian vitality and are oriented to the Seaplane Lagoon, such as a ferry terminal, marinas, viewing platforms, fishing piers, and areas reserved for kayaks and other non-motorized boats. Include “short-duration stop” facilities that support stopping, gathering and viewing with places to sit, interpretive kiosks, integrated water features, public art, and access to the water.

Policy LU-19 Alameda Point Main Street Neighborhood Mixed-Use District. Consistent with the Main Street Specific Plan, provide a variety of housing types and a mix of residential densities with complementary business uses, neighborhood-serving retail, urban agriculture and park uses.

Actions:

- **Mixed-Use.** Promote a mixed-use and mixed-income residential neighborhood with parks and community serving businesses and institutions, child care and family child care homes, supportive housing, assisted living, community gardens, urban farms and agriculture, compatible specialty manufacturing and light industrial uses, life science companies, and community services that complement and support the sub-district and Alameda as a whole.
- **Walkable.** Promote a walkable, transit friendly neighborhood with safe streets, common open space areas and greenways, and pedestrian and bicycle friendly development.
- **Alameda Point Collaborative.** Support development of a new residential campus for the Alameda Point Collaborative (APC), Building Futures for Women and Children, and Operation Dignity (collectively referred to as the “Collaborating Partners”).
- **NAS Alameda Historic District.** Preserve the character defining features of the NAS Alameda Historic District Residential Subarea. Preserve the “Big White” single family homes, and consider the preservation of the Admiral’s House for community and/or City use.

Policy LU-20 Alameda Point Enterprise Sub-District. Support the development of the Enterprise District for employment and business uses, including office, research and development, bio-technology and high tech manufacturing and sales, light and heavy industrial, maritime, community serving and destination retail, and similar and compatible uses.

Actions:

- **Vibrant Employment District.** Support the creation of a pedestrian, bicycle, and transit supportive business environment with high quality, well designed buildings within walking distance of transit, services, restaurants, public waterfront open spaces, and residential areas.
- **Support and Protect Job Growth.** Encourage and facilitate job growth and limit intrusion of uses that would limit or constrain future use of these lands for productive and successful employment and business use.
- **Pacific Avenue.** Support the development of Pacific Avenue as an iconic landscaped boulevard with separated bike paths and pedestrian routes.
- **Residential Uses.** Ensure that residential uses are directed to those areas within the district that will not result in limitations or impacts on the ability of research and development, bio-technology, high tech manufacturing, heavy industrial, manufacturing, or distribution businesses to effectively operate in the area.

Policy LU-21 Alameda Point Adaptive Reuse Sub-District. Support the development of the Adaptive Reuse District for employment and business uses, including office, research and development, bio-technology and high tech manufacturing and sales,

light and heavy industrial, maritime, commercial, community serving and destination retail, work/live, and other uses that support reinvestment in the existing buildings and infrastructure within the NAS Alameda Historic District.

Actions:

- **Preservation of the NAS Alameda Historic District.** Support and promote a pedestrian, bicycle, and transit supportive urban environment that is compatible with the character-defining features of the NAS Alameda Historic District.
- **Investment Opportunities.** Allow for a wide range of investment opportunities within the district to encourage private reinvestment in the NAS Alameda Historic District.
- **Significant Places.** Encourage the creation of a range of cultural and civic places through the development or adaptive reuse of key civic structures, including libraries, churches, plazas, public art, or other major landmarks to provide a sense of place and unique character.

Policy LU-23 Northern Waterfront Mixed-Use Area. Create a vibrant mixed-use, pedestrian-friendly, transit-oriented neighborhood with a variety of uses that are compatible with the waterfront location.

Actions:

- **Waterfront Access.** Expand public shoreline access and by redeveloping vacant and underutilized waterfront property with shoreline public open space and a mix of uses and extending Clement Avenue, the Cross Alameda Trail, and the Bay Trail through the Northern Waterfront from Grand Street to Sherman and from Broadway to Tilden Avenue to facilitate the movement of vehicles, bicycles, and pedestrians along the northern waterfront.
- **View Corridors.** Preserve views of the water and Oakland from existing and planned roadways and public rights of way.
- **Waterfront Mixed-Use.** To support a lively waterfront and a pedestrian friendly environment, provide for a mix of uses and open space adjacent to the waterfront including a mix of multi-family residential, neighborhood-serving commercial, office, marine, and waterfront commercial recreation, boat repair, maintenance and storage, dry boat storage and hoists, waterfront restaurants and related amenities.
- **Public Launching and Water Shuttle Facilities.** Support waterborne forms of transportation and water based recreation by providing public docks at Alameda Landing at 5th Street, Marina Village, Alaska Basin at Encinal Terminals, Grand Street Boat Ramp, and Alameda Marina.
- **Maritime and Tidelands Uses.** Promote and support water and maritime related job and business opportunities.
- **Historic Resources.** Preserve the unique historical, cultural, and architectural assets within the area and utilize those assets in the creation of a new, vibrant mixed-use district.

- **Del Monte Warehouse and Alaska Packers Building.** Preserve the Del Monte Warehouse Building consistent with the Secretary of the Interior's Standards for Rehabilitation and its City Monument designation, and preserve the Alaska Packers building for maritime and tidelands compliant uses.
- **Encinal Terminals.** Redevelop the vacant property with a mix of uses to create a lively waterfront development with residential, retail and recreational commercial, restaurant and visitor serving, and maritime uses. Ensure the provision of an accessible, safe and well designed public shoreline promenade around the perimeter of the site adjacent to the Alaska Basin and Fortman Marinas that connects to trail systems. Consider a reconfiguration of the Encinal Tidelands to allow public ownership of the privately held submerged lands and waterfront lands to better provide for public waterfront access and enjoyment and future maritime use.
- **Infrastructure Funding.** Require all new development to fund a fair share proportion of the costs of extending Clement Street from Sherman to Grand and upgrade storm sewer and wastewater facilities to serve all future development within the Northern Waterfront area.

Policy LU-29 Shopping Center Redevelopment. Redevelop existing automobile-oriented, single-use shopping centers with associated large surface parking areas into transit-oriented, mixed-use centers with multi-family housing.

Actions:

- **Vertical Mixed-Use.** Maintain ground floor commercial retail and service uses, while allowing upper stories to be developed for residential, office, and other uses.
- **Safe, Accessible, and Connected.** Ensure that the pedestrian, bicycle, transit and automobile network is safe and convenient for all users and well integrated with adjacent off-site networks.
- **Shared Parking.** Minimize the amount of land needed for off-street automobile parking by sharing parking between on-site commercial businesses and on-site residents.
- **Walkable.** Create walkable, pedestrian-scaled blocks, publicly accessible mid-block and alley pedestrian routes where feasible, and sidewalks generously scaled for pedestrian and wheelchair use with ample street trees, public seating areas, pedestrian lighting, and other amenities to create a safe and convenient pedestrian experience and enhance Alameda's network of leafy streets.
- **Gathering Places.** Provide public, open air, gathering places, such as small parks, plazas, outdoor dining opportunities, or other publicly accessible areas to support a mix of residential, commerce, employment, and cultural uses.

- **Architecture.** *Require building offsets, window and door recesses, and variations in building heights to create a rich and visually interesting pedestrian level experience.*

PROJECT IMPACTS

Impact 5-1

Implementation of the proposed *Alameda General Plan 2040* would not induce substantial unplanned direct or indirect population growth. (LTS)

Construction of new residential development allowed under the proposed General Plan is expected to add approximately 10,000 to 12,000 new housing units by 2040. Based on the City's 2020 average household size of 2.51 persons per dwelling unit, this could increase the City's population by 25,100 to 30,120 new residents. This would represent an 30.9- to 37.0-percent increase in comparison with the DOF's estimate of the City's population of 81,312 residents in 2020. While this would be a substantial growth in population directly facilitated by the General Plan, it would not be unplanned growth.

Rather, it would be consistent with planned growth for the City in *Plan Bay Area 2040*, the regional strategy adopted by ABAG and MTC for accommodating household and employment growth projected to occur in the Bay Area region through 2040. Furthermore, the growth planned under the General Plan is designed to accommodate the City's Regional Housing Needs Allocation (RHNA) assigned to Alameda by ABAG over the 20 year period. Consequently, future growth facilitated by the proposed General Plan would not substantially differ from growth planned by the regional planning agencies. This would therefore be a ***less-than-significant impact***.

Mitigation Measure 5-1

None required.

Impact 5-2

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* would not result in the displacement of substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (LTS)

Construction of new commercial, office, light industrial, and other development projects allowed under the proposed General Plan is planned for areas of the City that are planned and zoned for non-residential uses and where underutilized or vacant land is available, primarily in the following areas:

- Alameda Point, in the southerly area east of Seaplane Lagoon, west of Main Street and south of West Atlantic Avenue, and in the north/central area of Alameda Point,
- along the Northern Waterfront, in the area north of Clement Avenue, east of Grand Street, and west of Park Street, and

- in the Harbor Bay Business Park and Marina Village Business Park, in the area designated Business and Employment on the proposed Land Use Diagram (see Figure 2 in Project Description).

There is underutilized land in each of these areas planned for new development. There are also many vacant buildings, some of which would be demolished to accommodate new development and some of which would be redeveloped and repurposed with new uses. In the vast majority of cases, there would be no need to displace existing development, and no displacement of housing is anticipated. Jobs growth is also expected to occur along the City's two primary commercial corridors, Webster Street and Park Street.

Similarly, the development of 10,000 to 12,000 new housing units planned for in the proposed General Plan would not displace substantial numbers of existing housing. The majority of growth is expected to occur primarily in the following areas:

- Alameda Point, mostly north of West Atlantic Avenue;
- along and south of the Northern Waterfront, on vacant or underutilized sites, such as Encinal Terminals, the Boatworks site, and Alameda Marina, and
- at shopping center sites such as Alameda South Shore Center and Marina Village Shopping Center and other shopping centers with large open parking lots and existing single story retail buildings. The existing one-story buildings would be replaced with mixed use buildings that would provide ground-floor retail uses with residential uses on the upper floors. This would allow the amount of retail square footage on the site to remain largely the same as currently exists, while creating a significant number of housing units consistent with the proposed mixed-use General Plan land use designation.

Alameda Point has both apartments and single-family homes that were formerly occupied by Navy personnel when the area was operated as a naval air station by the U.S. Navy. Two hundred units have been converted to supportive housing for formerly homeless residents by the Alameda Point Collaborative, and there are currently over 500 residents in this supportive housing community at Alameda Point. They receive support services, including life and job skills training and substance abuse and mental health counseling, from Alameda Point Collaborative. The City of Alameda has signed agreements with the Alameda Point Collaborative to maintain their services at Alameda Point.

Housing Element Program 2.5 calls for continued monitoring by the City of all affordable housing projects and, as their funding sources near expiration, working with owners and other agencies to identify options to preserve such units. This and other Housing Element programs foster the development of new and rehabilitated affordable housing in support of Housing Element Goal #2, which reads: "Provide housing that meets the City's diverse housing needs, specifically including affordable housing, special needs housing, and senior housing." The City will continue to work with public and private sponsors to identify candidate sites for new construction of rental housing for special needs populations, including the elderly, homeless, people at risk of becoming homeless,

single-parent households, young adults, and people with physical and/or developmental disabilities.

In conclusion, the proposed General Plan update is not expected to result in the displacement of substantial numbers of existing people or housing. This would be a ***less-than-significant impact***.

Mitigation Measure 5-2

None required.

CUMULATIVE IMPACTS

Alameda's growth in jobs and housing units allowed under the proposed *Alameda General Plan 2040* would be added to similar growth in neighboring jurisdictions and in the Bay Area region. However, this cumulative growth would be consistent with growth planned and programmed for the region in *Plan Bay Area 2040*. Similar to housing growth in other cities and counties, the growth in Alameda housing stock anticipated in the General Plan is necessary to meet the City's Regional Housing Needs Allocation assigned by ABAG. While the proposed project would have incremental contribution to cumulative impacts associated with population and housing, the cumulative impacts would be less than significant.

6. PUBLIC SERVICES

6.1 Introduction

This chapter describes the existing provision of public services in the City of Alameda, including fire prevention and suppression, police, schools, and library services. Information on parks and on utilities such as stormwater drainage, water supply, wastewater treatment and disposal, solid waste disposal, electricity, and natural gas, is provided in Chapters 8 and 7, respectively. Potential project impacts related to the provision of services are identified and measures to reduce or eliminate potentially significant impacts are recommended.

6.2 Setting

REGULATORY FRAMEWORK – FIRE AND POLICE PROTECTION

Federal

Disaster Mitigation Act of 2000

The Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390), which amended provisions of the Stafford Disaster Relief and Emergency Assistance Act of 1988, established a national disaster hazard mitigation program intended to:

- reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters; and
- provide a source of pre-disaster hazard mitigation funding that will assist States and local governments (including Indian tribes) in implementing effective hazard mitigation measures that are designed to ensure the continued functionality of critical services and facilities after a natural disaster.

The DMA established a federal interagency task force, chaired by the Director of the Federal Emergency Management Agency (FEMA), for the purpose of coordinating the implementation of pre-disaster hazard mitigation programs administered by the federal government. In order to be eligible for funding from the National Pre-disaster Mitigation Fund, each state, local, or tribal government must prepare a hazard mitigation plan, subject to review and approval by FEMA. This federal assistance may provide up to 75 percent of the total cost of hazard mitigation activities in an approved hazard mitigation plan, or up to 90 percent in a small impoverished community with a population of 3,000 or fewer residents. The DMA creates incentives for increased coordination and integration of mitigation activities at the State level through the establishment of requirements for two different levels of State plans: Standard and Enhanced.

State

California Fire Code

The California Fire Code, promulgated at California Code of Regulations, Title 24, Part 9, is based on the 2018 International Fire Code published by the International Code Council. The California Fire Code specifies requirements for the fire service features of buildings; fire-resistance-rated construction assemblies; specifications for interior finishes, decorative materials, and furnishings; active fire protection systems (sprinklers, fire alarms, smoke alarms); and means of egress. It also includes requirements for emergency planning and preparedness by local jurisdictions, schools, places of assembly (churches, auditoriums, theaters, etc.), businesses, and fire-fighting organizations. In addition, it includes regulations pertaining to numerous specific industries and types of facilities that are inherently hazardous, such as aviation facilities, dry cleaners, semiconductor fabrication facilities, lumber yards and woodworking facilities, marinas, industrial ovens, fuel dispensing facilities, and more. It also addresses all types of hazardous materials, including compressed gases, flammable gases, corrosive materials, cryogenic fluids aerosols, combustible fibers, explosives, fireworks, oxidizers, liquefied petroleum, pyrophoric materials, reactive materials, and more. The California Fire Code is revised and published every three years by the California Building Standards Commission.

California Health and Safety Code

Additional regulations pertaining to fires and fire protection are set forth in California Health and Safety Code, Division 12, where the Office of the State Fire Marshall is established within the California Department of Forestry and Fire Protection (CAL FIRE). The Fire Marshall is charged with enforcing the Fire Code, investigating fires and explosions in State facilities, and fostering, promoting, and developing ways and means of protecting life and property against fire and panic, along with many other specific duties related to fire prevention and protection. This includes developing and adopting fire safety regulations for incorporation into the California Fire Code and California Building Standards Code, including requirements for fire-resistant building materials.

Strategic Fire Plan

The State Board of Forestry and Fire Protection (BFFP) is charged, under Public Resources Code Section 4130, with classifying all lands within the State into State Responsibility Areas (SRAs), based on fire risks and hazards, and with preparing a plan for adequate statewide fire protection of the SRAs. The BFFP has been preparing and adopting these plans since the 1930s. The latest iteration is the *2018 Strategic Fire Plan for California*, which assigns responsibility for its implementation and for generally ensuring adequate statewide fire protection of the SRAs to CAL FIRE.

The current Strategic Fire Plan reflects CAL FIRE's focus on (1) fire prevention and suppression activities to protect lives, property, and ecosystem services, and (2) natural resource management to maintain the State's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Plan relies on collaboration among local, State, federal, tribal, and private partners as critical to effectively managing towards

a more fire-resilient wildland-urban interface and natural environment. The Strategic Fire Plan has the following primary goals, and sets out specific objectives for achieving each goal:

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.
2. Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire, and (b) individual landowner objectives and responsibilities.
3. Support and participate in the collaborative development and implementation of local, county and regional plans that address fire protection and landowner objectives.
4. Increase fire prevention awareness, knowledge and actions implemented by individuals and communities to reduce human loss, property damage and impacts to natural resources from wildland fires.
5. Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
6. Determine the level of resources necessary to effectively identify, plan and implement fire prevention using adaptive management strategies.
7. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
8. Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

City of Alameda

Alameda Fire Code

The Alameda Fire Code, promulgated in Chapter XV of the Alameda Municipal Code, adopts the current editions of both the California Fire Code and the International Fire Code. The Alameda Fire Code is enforced by the Fire Preventive Services Division of the Alameda Fire Department.

Development Impact Fee Ordinance

The Alameda Development Impact Fee Ordinance, codified in Municipal Code Section 27-3, allows the City to assess development impact fees to mitigate the impacts of new residential development and new or intensified industrial and commercial development on transportation, parks and recreation, general public facilities, and public safety, including police and fire protection services. The fees are adjusted each year to reflect the change in the appropriate Construction Cost Index. Although the City's development impact fees are generally for construction of new or expanded parks, recreation, and public safety (e.g., road improvements) facilities, the ordinance notes public facility improvements are necessary to maintain adequate levels of police and fire protection services.

Alameda General Plan

The Safety and Noise Element of the proposed Alameda General Plan 2040 includes policies for fire hazards and emergency response in support of the overall objective of minimizing risks of loss of life, personal injury, property damage, and environmental degradation posed by fire hazards. Policy SN-24 establishes a response time goal of 5 minutes and 20 seconds, 90 percent of the time, for the first fire unit to be on the scene of a fire. Other specific relevant policies are listed in Section 6.4, Impacts and Mitigation Measures.

Emergency Operations Plan

The 2019 *City of Alameda Emergency Operations Plan* (EOP) is the foundation for disaster response and recovery operations for the City of Alameda that is intended as a reference and guidance document. The EOP outlines how the City of Alameda complies with and implements the requirements of the California Emergency Services Act to protect the lives and property in the community. It establishes the emergency organizational structure, specifies policies and general procedures, and provides for coordination of the responsibilities of the City of Alameda as a member of the Alameda County Operational Area with other member organizations, in all phases of an emergency or disaster.

The EOP builds upon the City's previous planning for emergency and disaster preparedness, response, and recovery capabilities. It includes the critical elements of the Incident Command System (ICS), Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the National Response Framework. The EOP is an extension of the *State of California Emergency Plan*, providing for coordination of localized emergency response as well as catastrophic disasters.

The EOP identifies 1809 Grand Street as the City's primary Emergency Operations Center (EOC), from which all emergency response is coordinated, though actual management of incidents is performed on the scene by field-level emergency responders, such as law enforcement, fire and rescue, and the Public Works Department. In the event the primary EOC is not operable, an alternative EOC located in the basement of the Police Administration Building at 1555 Oak Street will be activated.

REGULATORY FRAMEWORK – SCHOOLS

State

Mitigation Fee Act

In 1987 the California Legislature enacted Assembly Bill 1600, the Mitigation Fee Act (MFA), codified in California Government Code Section 66000 *et seq.*, which lays out the circumstances and methods by which local agencies, including school districts, may assess fees on new development for purposes of defraying all or a portion of the cost of public facilities and infrastructure that will serve that development. The MFA codifies requirements for land use exactions charged by local governments to be "roughly proportional" to the costs of providing public services to new

development that were established in a legal decision made by the U.S. Supreme Court in *Nollan v. California Coastal Commission* (483 U.S. 825, 1987). The MFA requires an agency to identify the purpose of any development fee it charges and specify the use to which the fee is to be put. It must also demonstrate a reasonable relationship between the fee and purpose for which it is charged.

Senate Bill 50

Senate Bill (SB) 50, the Leroy Greene School Facilities Act, was passed by the California Legislature in 1998 to create the School Facility Program (SFP), which changed the way new school facilities are financed by the State in a cost-sharing partnership with local school districts. This Act, codified in Government Code Section 65995 *et seq.*, requires the State Allocation Board to provide per-pupil funding for new school facilities construction and school facilities modernization. Government Code Section 65995 sets limits on the fees school districts may levy pursuant to Education Code Section 17620, which provides the basic authority for school districts to levy fees against construction for purposes of funding construction or reconstruction of school facilities.

SB 50 establishes three levels of development fees, all levied against new residential and commercial development on a per-square-foot basis, and allows biennial increases in the fees by the State Allocation Board, based on inflation. The lowest fee, Level I, is assessed if the district conducts a justification study that establishes the connection between the development coming into the district and the assessment of fees to pay for the cost of the facilities needed to house future students. The Level II fee is assessed if a district makes a timely application to the Board for new construction funding, conducts a school facility needs analysis pursuant to Government Code Section 65995.6, and satisfies at least two of the requirements listed in Government Code Section 65995.5(b)(3). The Level III fee is assessed when State bond funds are exhausted, in which case a school district may impose a developer's fee up to 100 percent of the School Facility Program new construction project cost. The Level II and III fees are generally only applicable to residential development.

On January 22, 2020, the State Allocation Board adopted the current Level I school impact fee limits, which became effective immediately. For new residential construction, the 2020 fee is \$4.08 per square foot, and the fee for new commercial/industrial construction is \$0.66 per square foot.

FIRE PROTECTION SERVICES

Fire protection and emergency medical response services are provided to the City of Alameda by the Alameda Fire Department (AFD), which has 110 sworn firefighters and 7 non-sworn personnel. There are a minimum of 25 firefighters on duty daily. In addition to fire suppression, the AFD has responsibility for providing advanced life support services, including ambulance transport services; fire prevention and investigative services; community disaster preparedness, including Community Emergency Response Teams (CERT); hazardous materials response and mitigation; confined-space rescue services; and water rescue. Each fire station is staffed by a Paramedic and Emergency Medical Technician (EMT).

The AFD maintains automatic and mutual aid agreements with the City of Oakland as well as the California Office of Emergency Services and California Task Force 4–The Urban Search and Rescue. The Department has a Class 1 Insurance Services Office (ISO) rating, also known as a Public Protection Classification (PPC).

The AFD staff includes one Fire Chief, two Deputy Chiefs, four Division Chiefs, two Training Captains, one Emergency Medical Services (EMS) Captain, one Disaster Preparedness Captain, one non-sworn Senior Fire Code Compliance Officer, one nonsworn EMS Education Coordinator, and five non-sworn support staff. The AFD currently has a staffing ratio of 1.4 sworn firefighters per 1,000 population.

In 2019 the AFD responded to 7,433 calls for service, with 177 calls related to fires. The majority of the other calls were for emergency medical response, but they also included 2,110 other calls for a variety of purposes, including hazardous materials spills/releases, explosions, water problems, fireworks complaints, false alarms, and more. The fire calls included structure fires, vegetation fires, outdoor fires, trash fires, and ship/boat fires.¹ The Department had an average first responder response time of 4 minutes 50 seconds to all fire calls in 2019. The average response time for all calls was 4 minutes 37seconds.²

The AFD operates out of the following four fire stations strategically located throughout the City:

Station No. 1: 2401 Encinal Avenue

Station No. 2: 635 Pacific Avenue

Station No. 3: 1625 Buena Vista Avenue

Station No. 4: 2595 Mecartney Road (Bay Farm Island)

A fifth station at 950 W. Ranger Road was closed in 2009. The locations of the active stations are shown on Figure PS-1. Due to expected growth at Alameda Point and along the Northern Waterfront and the existing response times to these locations from Station No. 2, the closest responding fire unit, the AFD is recommending that the City develop a new fire station with one fire engine and one ambulance company at the City-owned property at 950 West Tower Avenue. This property is currently the site of the fire training office and a Public Works storage facility. The Department is currently preparing a feasibility study for the new fire station.³

The AFD is organized into the following four operational divisions:

Emergency Operations: This division is responsible for responding to fire alarms and providing fire suppression of structure fires, vehicle fires, outdoor fires, trash fires, and ship/boat fires. This

¹ City of Alameda, *Mid-Cycle Budget Update 2020-2021, City of Alameda, California*, June 4, 2020.

² Ricci Zombeck, Acting Fire Chief, Alameda Fire Department, personal communication, October 14, 2020.

³ *Ibid.*

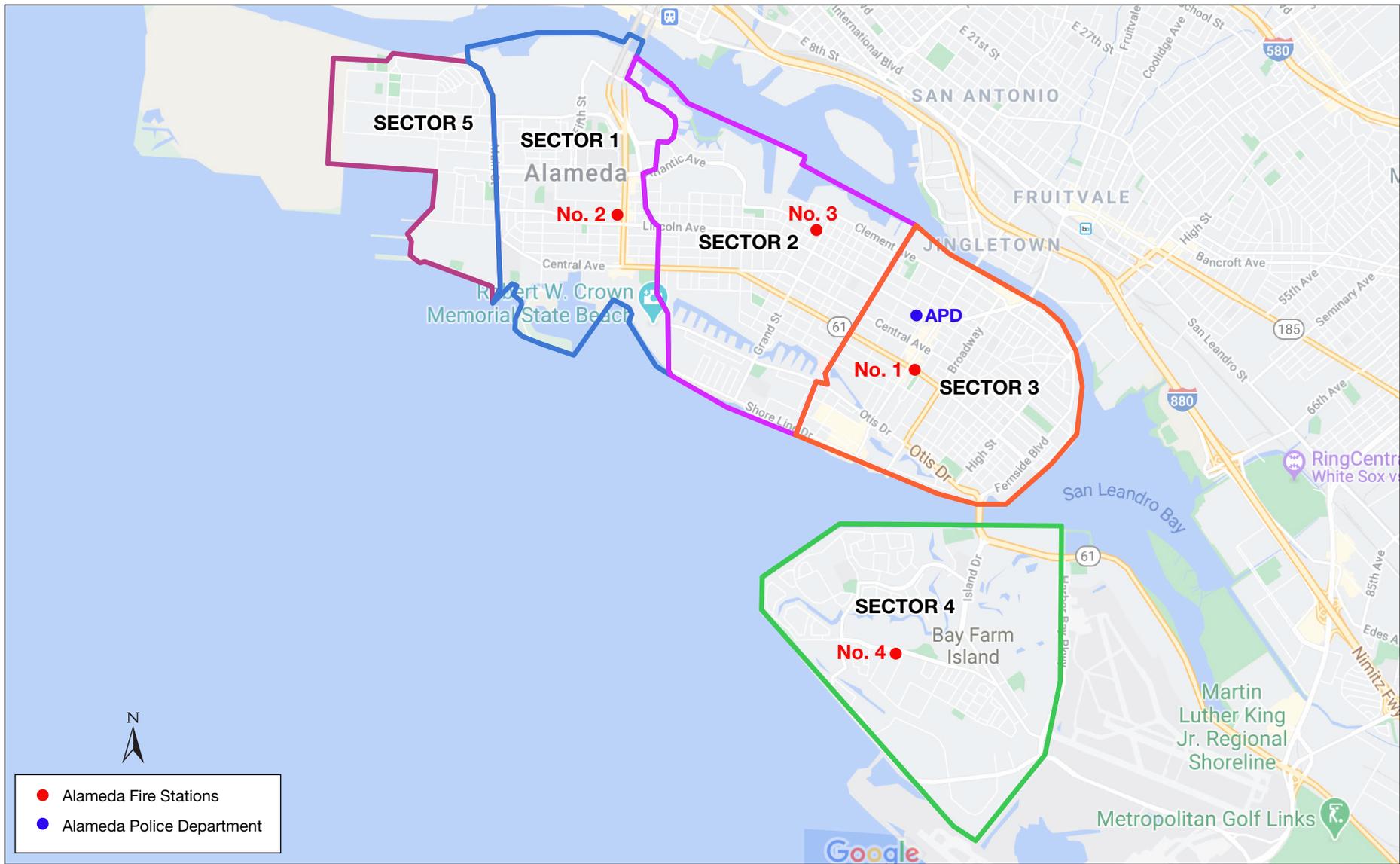


Figure PS-1

Alameda Fire Stations and Police Patrol Sectors

Source: Douglas Herring & Associates; Base Google Maps

division also responds to mutual aid calls from other jurisdictions in the County and State, including wildland fires.

Emergency Medical Services: This division provides emergency medical ambulance transport within Alameda. Each of the AFD's four engine companies are staffed with at least one Emergency Medical Technician (EMT) paramedic at all times. Personnel follow guidelines developed by Alameda County Emergency Medical Services for the delivery of emergency medical and transport services, including specialized treatment and transport to definitive care. Personnel also provide community services including, but not limited to, blood pressure testing, and CPR/AED instruction.

Life Safety: This division provides fire prevention services, which includes inspections of commercial properties, reviews of new and reconstruction building plans, and promotion of public awareness for fire and home safety.

Administration: This division manages the AFD, including budget oversight.

In addition to these operational divisions, the AFD has several special operations programs, including the following:

Technical Rescue: The AFD's Technical Rescue Program provides land-based search and rescue for life and property that employs the use of tools and skills exceeding those normally provided by fire fighters. The personnel in this program specialize in rescue techniques and equipment for building collapse, shipboard rescue, underground vaults and tunnels, auto extrication, and fire fighter survival. Most of the equipment and vehicles in the Technical Rescue Program have been provided by grants from the Federal Emergency Management Agency (FEMA) that were awarded based on the unique hazards Alameda city has by being an island community, along with the potential for strong earthquakes in the region.

Marine Operations: The Marine Operations (MAROPS) Program established in 2011 provides land-based water rescue from shore and boat-based water rescue utilizing inflatable rescue boats and rescue swimmers. The Department has trained all firefighters in shore-based water rescue and currently has 25 lifeguard-certified rescue swimmers. The AFD also has 55 firefighters trained as inflatable rescue boat operators to operate the Department's two inflatable rescue boats, located at Stations 1 and 2.

In addition to water rescue, the MAROPS Program provides marina and waterfront firefighting functions, supported by a fireboat based at the Alameda Marina.

Hazardous Materials (HAZMAT) Program: All Alameda firefighters are trained in hazardous materials response to the First Responder Operational (FRO) level. While firefighters are able to contain and clean up small releases of certain known hazardous chemicals, for large releases of these known chemicals or of unknown substances, the Alameda Fire Department works in conjunction with the Alameda County Fire Department HAZMAT Team and the National Response Corporation (NRC) to mitigate, clean-up, and dispose of these types of hazardous materials.

The AFD also maintains a Tactical Medics team, in partnership with the Alameda Police Department, that consists of four firefighter/paramedics who function as “Tactical Medics” for the Police Department’s Critical Incident Response Team (CIRT). These Tactical Medics provide medical services for law enforcement special operations, enabling rapid care for injured officers and civilians. The CIRT is composed of a Commander, Special Weapons and Tactics (SWAT) Liaison Officer, SWAT Operators, Scout Snipers, Crisis Negotiation Team, Tactical Medics, and Tactical Dispatcher.

POLICE PROTECTION SERVICES

Police protection services in Alameda are provided by the Alameda Police Department (APD), which operates out of headquarters located at 1555 Oak Street. The APD budgeted positions for 88 sworn officers and 33 non-sworn personnel, though actual current staffing levels are lower.⁴ Staffing shortfalls are made up through overtime work by existing officers. The APD’s target staffing ratio is one officer per thousand population. Patrol officers are assigned to one of five patrol sectors, illustrated on Figure PS-1. The department-wide average response time for Priority 1 calls is under 3 minutes. The APD maintains a fleet of 74 police vehicles, including an ambulance and eight motorcycles.

The APD is organized into two bureaus: the Bureau of Operations includes the Patrol Division, Traffic Division, and Investigations Division, while the Bureau of Services includes a Technical Services and Administrative Services. There are also specialized police units within the Bureau of Operations, including the Critical Incident Response Team (C.I.R.T.), which is responsible for providing a rapid response of specialized personnel and equipment to incidents of a critical nature, such as hostage incidents, high-risk arrests, barricaded subjects, rescue incidents in areas endangered by gunfire, and police and/or fire units engaged with mobs, looters, and arsonists. Other specialized units include a canine (K9) unit, marine patrol, housing authority, investigations (with separate property crimes, violent crimes, and special investigations units), and school resource officers who liaise with the Alameda Unified School District at Encinal High School and Alameda High School.

In 2019 the APD had 2,778 reported Part I crimes—which include murder, rape, robbery, assault, burglary, petty theft, grand theft, auto theft, and arson—and 2,276 Part II (all other) crimes. The Part I crimes included 8 rapes, 94 robberies, 62 assaults, 217 burglaries, and 404 auto thefts, but no murders.

SCHOOLS

Public school services in Alameda are provided by the Alameda Unified School District (AUSD), which has nine elementary schools, four middle schools, and four high schools serving an enrollment of approximately 9,600 students. The attendance boundaries for AUSD’s elementary schools are shown on Figure PS-2. The middle school and high school boundaries are shown on

⁴ Ryan DeRespini, Police Lieutenant, Alameda Police Department, personal communication, October 5, 2020.

Figures PS-3 and PS-4, respectively. The District has experienced modest growth since 2013 and expects continued growth in response to new development and natural population growth.

District-wide enrollment in the 2018/2019 school year was 9,287 students, including 4,445 kindergarten/elementary school (K-5) students, 1,873 middle school (6-8) students, and 2,969 high school (9-12) students. District-wide enrollment was projected to be 9,618 students in the 2020/2021 school year, increasing incrementally each year to 10,304 students by the 2028/2029 school year.⁵

In 2018, the most recent year for which this data was available, the AUSD's elementary schools had a combined student capacity of 5,733 students, demonstrating considerable excess capacity, given the K-5 enrollment of 4,445 students that school year. Similarly, the combined middle school capacity of 2,202 students (versus 1,873 enrolled students) and high school capacity of 4,899 (versus 2,969 enrolled students) demonstrated a comfortable buffer of unused capacity.⁶

LIBRARIES

Library services in Alameda are provided by the Alameda Free Library, which has a main branch located at 1550 Oak Street, a West End Branch located at 788 Santa Clara Avenue, and a Bay Farm Island branch located at 3221 Mecartney Road. At the time of preparation of this EIR, all library branches are operating with special operating procedures due to the COVID-19 coronavirus.

The mission statement of the Alameda Free Library is to provide an inviting and comfortable place where people of all ages develop and enjoy a love of learning and reading, connect to the online world, and find the information they need for daily living. The Alameda Free Library provides programs and activities dedicated to children and teens, including story times for toddlers and elementary students, children's reading programs and activities, teen book reviews, and teen activities. The Alameda Free Library also has an adult literacy program (Alameda Reads), with a reading room provided at 2203 Central Avenue (Room 350).

6.3 Standards of Significance

Based on Appendix G of the *CEQA Guidelines*, project impacts on public services would be considered significant if the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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 fire protection, police protection, schools, parks, or other public

⁵ Alameda Unified School District, *Fall 2019-2028 Student Population Projections, by Residence*, January 29, 2019.

⁶ Alameda Unified School District, *School Capacity Assessment*, September 2018.

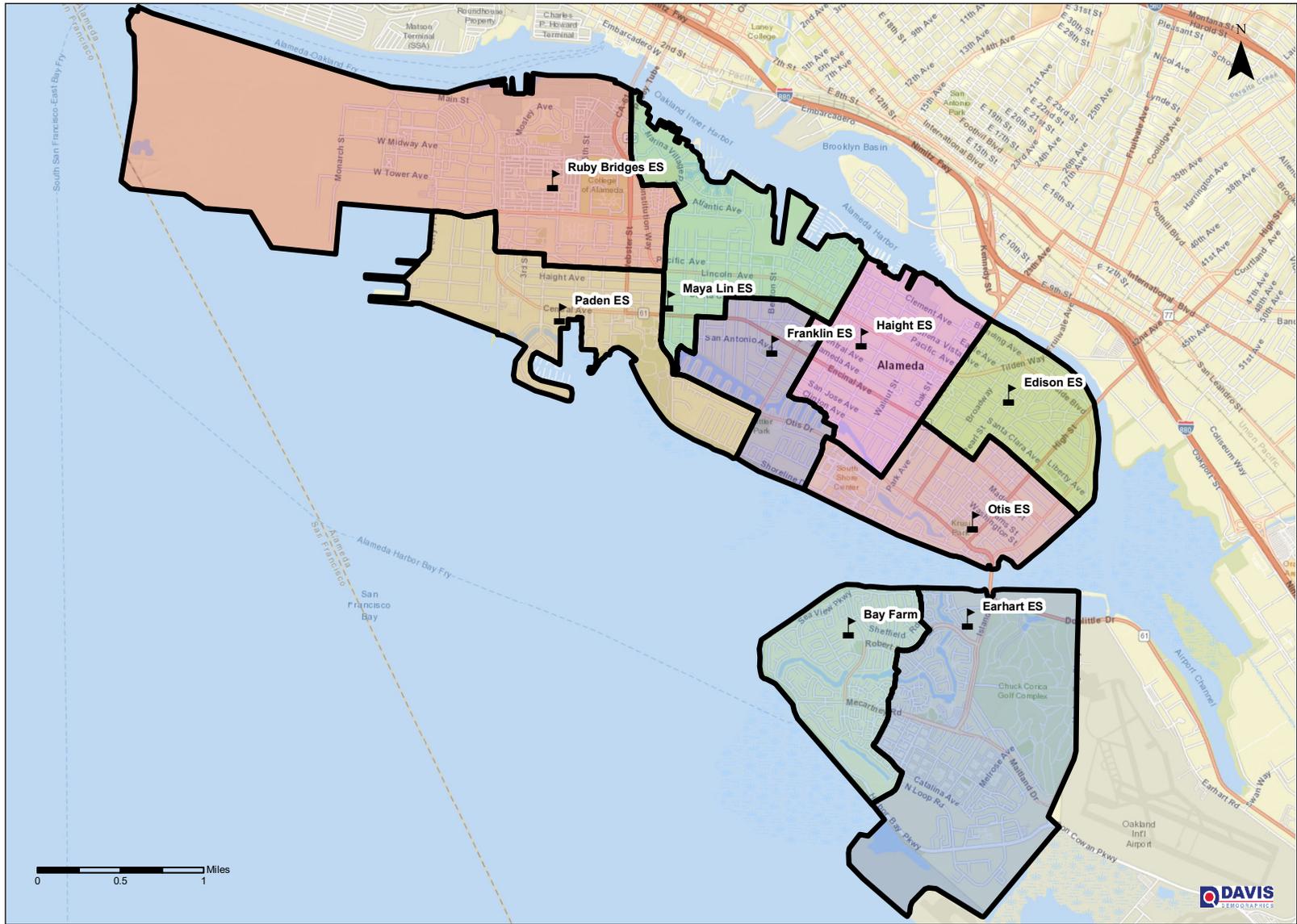


Figure PS-2

AUSD Elementary School Attendance Boundaries

Source: Alameda Unified School District, 2018

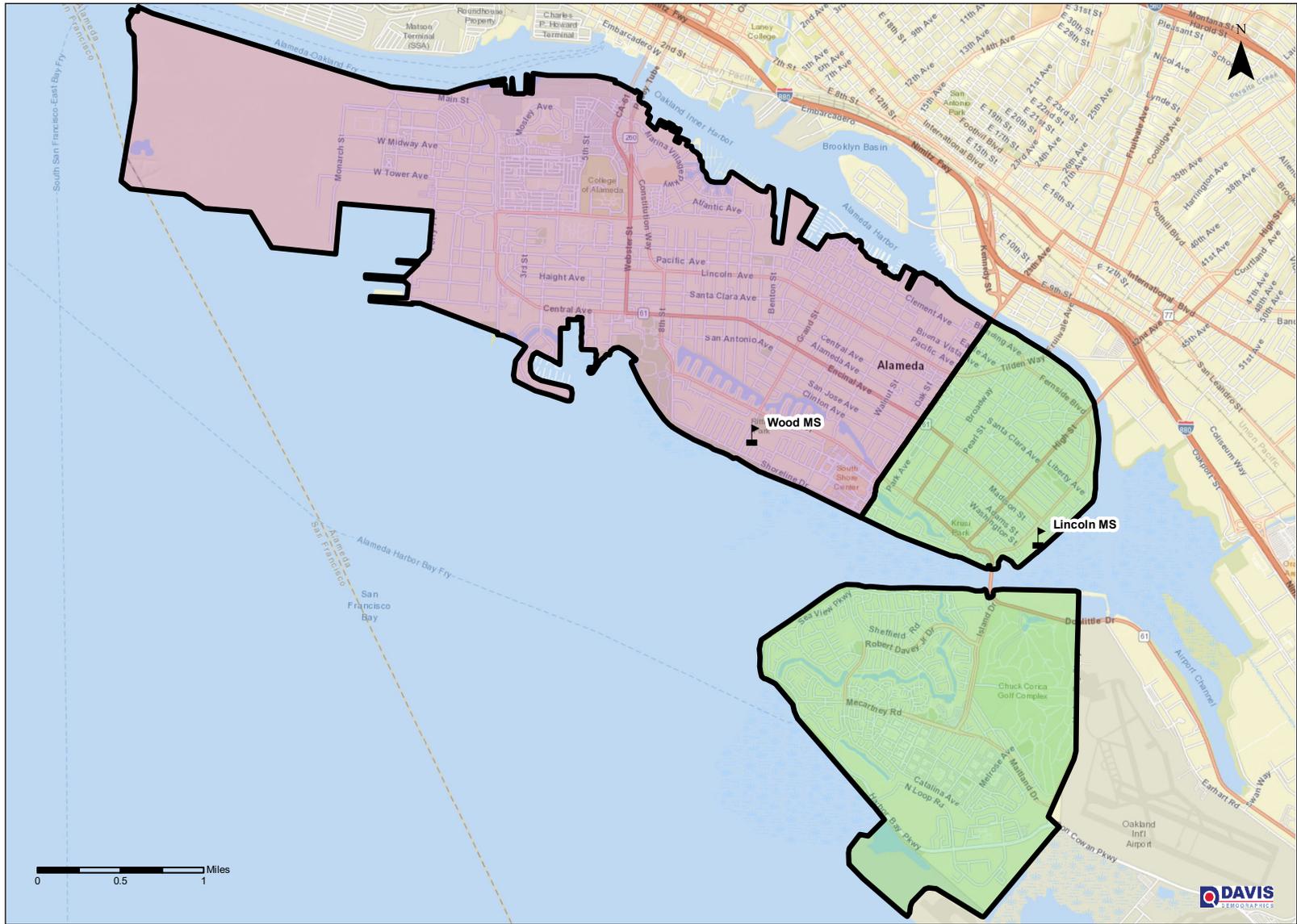


Figure PS-3

AUSD Middle School Attendance Boundaries

Source: Alameda Unified School District, 2018

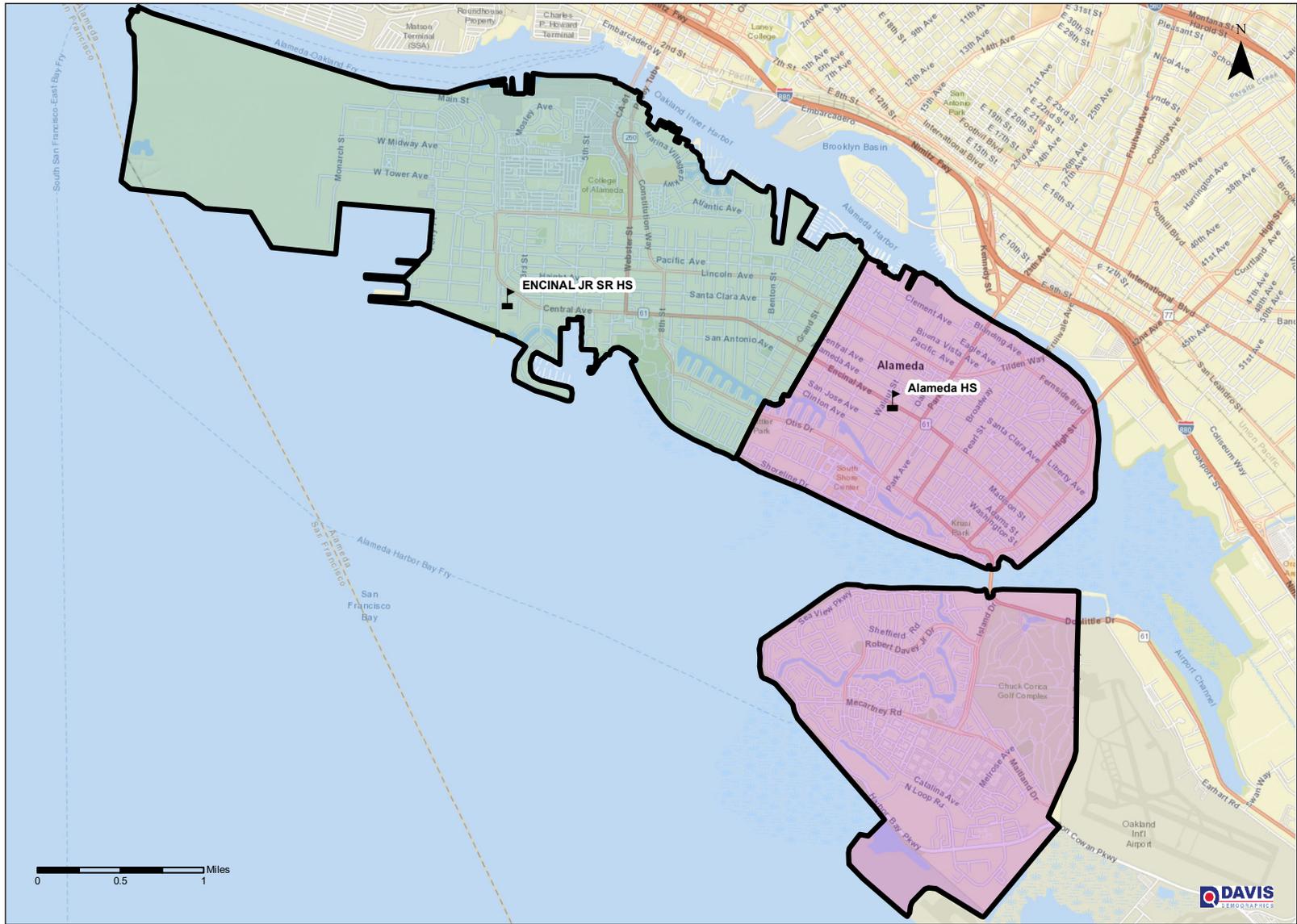


Figure PS-4

AUSD High School Attendance Boundaries

Source: Alameda Unified School District, 2018

facilities.⁷ These standards of significance are adopted for use in this EIR. Potential impacts on parks are addressed separately in Chapter 8, Parks and Recreation.

6.4 Impacts and Mitigation Measures

This section identifies environmental impacts that could result from the construction and/or operation of new or physically altered governmental facilities, constructed in order to maintain acceptable service ratios, response times, or other performance objectives as the result of increased demands on services generated by population growth facilitated by the General Plan.

The proposed Safety and Noise Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to protect the health, safety, and general welfare of Alameda residents, workers, and visitors, and to minimize disruption of essential public services, facilities, and infrastructure as the result of natural disaster. It also identifies policies and strategies for reducing exposure to and impacts from natural disasters and hazards, which are addressed in Chapter 16, Hazards and Hazardous Materials, and in Chapter 14, Geology and Soils.

Specific policies of the Safety and Noise Element that would reduce impacts to public services include the following:

Policy HS-3 Mutual Aid Agreements. Coordinate local emergency preparedness efforts with the Federal Emergency Management Agency (FEMA), Coast Guard, United States Maritime Administration Ready Reserve Fleet (MARAD), the San Francisco Bay Area Water Emergency Transportation Authority (WETA), the Port of Oakland, adjacent jurisdictions, the Alameda Unified School District, the various private schools in Alameda, local hospitals, housing facilities for seniors or individuals with disabilities, and other local and regional police, fire and public health agencies in preparation for natural and man-made disasters, and ensure that the City's disaster response communication technologies are compatible with other agency communication technologies.

Policy HS-4 Public Communication. Maintain and promote community programs to train volunteers, support groups for seniors and individuals with disabilities, food banks, and other local aid organizations to assist police, fire, and civil defense personnel during and after a major earthquake, fire, or flood.

⁷ Governor's Office of Planning and Research, *CEQA Guidelines*, Appendix G, Section XV, as amended December 28, 2018.

FIRE PROTECTION SERVICES

Impact 6-1

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* could result in increased calls for fire protection services, including emergency medical response, which could require the provision of 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. (LTS)

Construction of new residential, commercial, office, light industrial, and other development projects allowed under the proposed General Plan would increase the population of Alameda and create new jobs, both of which could result in increased calls for fire protection and emergency medical response services. As discussed in Chapter 5, Population and Housing, implementation of the proposed General Plan is expected to add up to 10,000 new housing units by 2040, which could increase the City's population by 23,500 residents, representing a 28.9-percent increase in population compared to the existing 2020 population. This could potentially cause a comparable increase in the number of calls for fire protection and emergency medical response services. In addition, the operation of new industrial facilities could lead to an increase in structure and equipment fires, also requiring emergency response by the Alameda Fire Department.

There are currently adequate fire-fighting resources within the AFD and through automatic aid and mutual aid agreements with neighboring fire-fighting districts to provide fire protection and emergency medical response services to existing homes and businesses within Alameda. Future population growth facilitated by the proposed General Plan could require the AFD to acquire new equipment and add firefighting staff, and construction of new facilities to house this staff and equipment could be required. The AFD is hoping to construct a new fire station at 950 West Tower Avenue to improve response times to Alameda Point and the Northern Waterfront, where a significant portion of new residential and commercial development facilitated by the proposed General Plan would be located.

The AFD is expected to increase staffing, equipment, and facilities as needed to meet growth in demand for fire protection services resulting from new development. New residential, industrial, and commercial development would be required to pay the City's development impact fees, which would provide needed funding for increased staffing, equipment, and facilities. The First District Court of Appeal ruled in 2015 that the need for additional fire protection services is not an environmental impact under CEQA (*City of Hayward v. Board of Trustees of the California State University* (242 Cal.App.4th 833, 843, 2015)). The Court stated that "the obligation to provide adequate fire and emergency medical services is the responsibility of the city. (Cal. Const., art. XIII, §35, subd. (a)(2) ['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.']) The need for additional fire protection services is not an environmental impact that CEQA requires a project proponent to mitigate."

Regarding a possible new fire station, when and if the City makes a decision to build new facilities, such a proposal will be subject to separate environmental review. There is currently no concrete proposal to build a new fire station. Therefore, the proposed General Plan update would have a **less-than-significant impact** on fire protection services.

Mitigation Measure 6-1

None required.

POLICE PROTECTION SERVICES

Impact 6-2

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* could result in increased calls for police protection services, which could require the provision of 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. (LTS)

Construction of new residential, commercial, office, light industrial, and other development projects allowed under the proposed General Plan is projected to increase the population of Alameda by 23,500 residents and add approximately 13,000 new jobs in the City by 2040. This increased population and development would generate increased calls for police protection services, which would require the Alameda Police Department to add additional police officers to the force in order to maintain an adequate staffing ratio. The APD has a target staffing ratio of one officer per thousand population, which means that the projected population growth could require the APD to add 23 new officers.

To accommodate this growth in staff, it is likely that construction of new police facilities could be required in the future. The APD reports that its existing police administration building (PAB) located at 1555 Oak Street is already constrained due to outdated technological systems constructed in 1974 and an inadequate parking area.⁸ The APD currently has a small parking area at the PAB for marked vehicles and it leases land for unmarked vehicles, with no secured parking available for employees, representing a security threat. The addition of new police officers and support staff to meet future growth in the City would further exacerbate overcrowding of the existing PAB in the locker room and charging areas for batteries, cameras, flashlights, and other equipment, as well as in overall office space. The plumbing, sewer, and electrical systems are also overburdened and unreliable.⁹ Expansion of the PAB on its current site is not feasible.

While a centralized location for the PAB was previously important, many of the in-person services provided at the Police Department have migrated online, reducing demand at the front counter. The closure of the jail in 2011 also reduced the need for the PAB to be located downtown. Given

⁸ Ryan DeRespini, Technical Services Division Commander, Alameda Police Department, personal communication, September 28, 2020.

⁹ *Ibid.*

the increased space needs for an all-in-one PAB/public safety center, construction of a new, modern facility with adequate parking for police vehicles is likely to be pursued in the future at Alameda Point, where there is substantial available land. However, there are currently no plans for construction of a new PAB, and any future project for this purpose would be subject to separate environmental review under CEQA.

As discussed under Impact 6-1, above, the First District Court of Appeal ruled in *City of Hayward v. Board of Trustees of the California State University* that the provision of adequate public safety services is the responsibility of local governments and is not an environmental impact requiring mitigation. Furthermore, new development is required by the City's Development Impact Fee Ordinance to contribute to the development of public facility improvements necessary to maintain adequate levels of police and fire protection services, and this fee is adjusted each year to reflect the change in the appropriate Construction Cost Index. The mandatory payment of this fee by future development facilitated by the proposed General Plan would offset the effects that such development would have on the need for new police protection facilities to house an expanded police force. Therefore, the proposed General Plan update would have a ***less-than-significant impact*** on police protection services.

Mitigation Measure 6-2

None required.

SCHOOLS

Impact 6-3

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* could result in increased demand for school services, which could require the provision of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable class sizes. (LTS)

New residential and commercial development allowed under the proposed General Plan is expected to result in the construction of up to 10,000 new single-family and multi-family residential units in Alameda by 2040. As discussed in Chapter 5, Population and Housing, this is expected to add up to 23,500 new residents to the City during this timeframe, which would generate new school-age students who would seek enrollment in Alameda public schools.

The Alameda Unified School District (AUSD) has calculated student yield factors from new residential development for purposes of projecting and planning for future growth in the District. The yield factors were determined from an analysis of current student records correlated with tax assessor records geocoded by address. The current K-12 yield factor is 0.252 students per residential unit (single-family and multi-family). This aggregate yield factor is based on yield factors of 0.145 students/unit for kindergarten and elementary (K-5) schools, 0.033 students/unit for middle school (6-8) schools, and 0.074 students/unit for high (9-12) schools. Applying these student generation rates to the assumed buildout of 10,000 new residences, the growth planned in the

General Plan could result in an additional 2,520 K-12 students in Alameda, including 1,450 kindergarten/elementary school students, 330 middle school students, and 740 high school students.

As discussed in Section 6.2, there is currently excess capacity in Alameda schools. As of 2018, when the latest analysis by the AUSD was performed, there was an excess capacity of 1,288 elementary school students, 329 middle school students, and 1,930 high school students. Thus, a considerable amount of the growth in student population that would be facilitated by the proposed General Plan could be accommodated in the AUSD's existing school facilities.

Pursuant to Senate Bill 50, the State has determined that with payment of applicable school impact fees, proposed development projects would have a less-than-significant impact on schools.¹⁰ The current school impact fee in the AUSD is \$4.08 per square foot for new residential development and \$0.66 per square foot for new commercial/industrial construction.¹¹ Future development would be required to pay the current fees, which are typically increased incrementally each year. In accordance with SB 50, payment of the fees would ensure that future residential, commercial, and industrial development consistent with the *Alameda General Plan 2040* would have a ***less-than-significant impact*** on schools.

Mitigation Measure 6-3

None required.

LIBRARIES

Impact 6-4

The increased population generated by future residential development allowed under the *Alameda General Plan 2040* could result in increased demand for library services, which could require the provision of new or physically altered library facilities, the construction of which could cause significant environmental impacts. (LTS)

The population of Alameda is projected to increase by approximately 23,500 residents by 2040, which would result in increased demand for library services. Depending on the level of increased demand, construction of new library facilities could be required to meet the demand. While it is currently unknown whether and where new or physically altered library facilities may be required in the future to meet demand created by new development facilitated by the *Alameda General Plan 2040*, any new or physically altered facilities proposed in the future would be subject to separate environmental review under CEQA. Absent a specific proposal for a specific location, it is not possible to provide a detailed analysis of environmental effects in this programmatic EIR. However, some of the expected impacts from future growth are evaluated at a programmatic level in this EIR, such as increased traffic (Chapter 10) and increased emissions of air pollutants (Chapter 11) and

¹⁰ Senate Bill (SB 50), Leroy F. Greene School Facilities Act of 1998, Statutes 1998, Chapter 407.

¹¹ Shariq Khan, Chief Business Officer, Alameda Unified School District, re: School Developer Fees (letter to Alameda City Manager Eric Levitt), February 26, 2020.

greenhouse gases (Chapter 12), and implementation of mitigation measures to reduce identified impacts would help reduce impacts associated with increased demand for library services and construction of new or physically altered facilities. Because no new facilities are currently proposed or anticipated, the proposed *Alameda General Plan 2040* would have a ***less-than-significant impact*** on library services.

Mitigation Measure 6-4

None required.

CUMULATIVE IMPACTS

Implementation of the proposed *Alameda General Plan 2040* is not expected to result in significant cumulative impacts to public services. As an island community, there is little overlap with service providers outside of Alameda. Neighboring cities, including Oakland, San Leandro, and Emeryville, each have their own public service providers responsible for providing these services within their jurisdictional boundaries. While some incidents of emergencies and natural disasters may call for the engagement of emergency responders from other agencies pursuant to mutual aid or automatic aid agreements, such occurrences are very infrequent, and any incremental increase in outside response that might result from future growth consistent with the proposed General Plan would not require construction of new facilities that could have adverse environmental effects. While the general growth in demand for public services within Alameda facilitated by the General Plan could, over time, require construction of new facilities that could have significant adverse environmental effects, each project would be required to mitigate those impacts to a level of insignificance as part of the environmental review process, and the payment of impact fees required by the Alameda Development Impact Fee Ordinance would further reduce those impacts. With each individual project being required to largely or wholly reduce construction impacts to a less-than-significant level, the impacts from future development consistent with the proposed General Plan would not be cumulatively considerable.

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7. UTILITIES AND SERVICE SYSTEMS

7.1 Introduction

This chapter describes the existing provision of utilities and service systems in the City of Alameda, including water supply and treatment, stormwater drainage, wastewater treatment and disposal, solid waste disposal, electricity, natural gas, and telecommunications. Potential project impacts on utilities and service systems are identified and measures to reduce or eliminate potentially significant impacts are recommended.

7.2 Setting

REGULATORY FRAMEWORK

Federal

Water/Wastewater

Clean Water Act of 1972

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating water quality standards for surface waters. The stated purpose of the CWA was to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Originally enacted in 1948 as the Federal Water Pollution Control Act, it was significantly reorganized and expanded in 1972 as the Clean Water Act. Among other provisions, the CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under the National Pollutant Discharge Elimination System (NPDES), which regulates both point and non-point discharges. This represented a shift from a primary focus on ambient water quality standards to establishment of specific technology-based effluent limits that are enforceable as permit conditions. However, ambient water quality standards are still an important component of the CWA.

Municipal wastewater treatment plants are among the categories of point discharges requiring an NPDES permit. Although the NPDES program is a federal permit program under the CWA, it is administered in the Bay Area by the San Francisco Bay Regional Water Quality Board (RWQCB). The permits set limits on the quality of the wastewater discharges and require ongoing monitoring and reporting. Most permits are adopted by the RWQCB in public hearings and are designed to protect the beneficial uses of the receiving waters.

All sewage treatment plants and large industries are required to have NPDES discharge permits, while smaller industries that discharge to sewer systems are regulated by the local systems. The discharge of contaminated groundwater is also regulated by NPDES permits. Industrial and municipal stormwater discharge is also covered by NPDES permits, as discussed in Chapter 15, Hydrology and Water Quality.

Safe Drinking Water Act of 1974

The Safe Drinking Water Act (SDWA) enacted in 1974 was established to protect the quality of drinking water in the U.S. The law encompasses all waters actually or potentially designated for drinking use, including rivers, lakes, reservoirs, springs, and groundwater wells, although it does not regulate private wells that serve fewer than 25 individuals. The SDWA authorizes the U.S. Environmental Protection Agency (EPA) to establish minimum standards to protect tap water against both naturally-occurring and man-made contaminants and requires all owners or operators of public water systems to comply with these primary health-based standards. Originally, the SDWA focused primarily on treatment as the means of providing safe drinking water at the tap.

The drinking water standards adopted by the EPA vary depending on the type and size of water system. The most broadly applied standards pertain to Community Water Systems, which are public water systems that serve the same people year-round. Most residences including homes, apartments, and condominiums in cities, small towns, and mobile home parks are served by Community Water Systems; there are approximately 54,000 of them in the U.S. The National Primary Drinking Water Regulations set enforceable maximum contaminant levels for particular contaminants in drinking water and stipulate required methods for treating water to remove contaminants. Each standard also includes requirements for water systems to test for contaminants in the water to make sure standards are achieved.

The law was amended in 1986 and 1996, with the 1996 amendments greatly enhancing the law by requiring source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. The 1996 amendments require EPA to consider a detailed risk and cost assessment, and best available peer-reviewed science, when developing drinking water standards.

EPA's Office of Ground Water and Drinking Water (OGWDW) oversees implementation of the Safe Drinking Water Act, but the EPA, states, tribes, and public water utilities work together to make sure that these standards are met. In addition to setting these standards, the EPA provides guidance, assistance, and public information about drinking water, collects drinking water data, and oversees state drinking water programs.

America's Water Infrastructure Act of 2018

America's Water Infrastructure Act (AWIA) of 2018 includes a variety of provisions intended to improve drinking water and water quality, increase infrastructure investments, enhance public health and quality of life, increase jobs, and bolster the economy. The AWIA provisions are the most far-reaching changes to the Safe Drinking Water Act since the 1996 Amendments, with over 30

mandated programs. The AWIA provides funding to assist public water systems in small and disadvantaged communities with reducing lead in drinking water systems, provides financial assistance to homeowners for lead line replacement, and funds the testing of drinking water in schools and child care facilities for lead. It requires community water systems serving more than 3,300 people to develop or update risk assessments and emergency response plans (ERPs).

Solid Waste

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. §6901 *et seq.*) gives the EPA the authority to control hazardous waste from cradle to grave, encompassing the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. Under RCRA, the EPA has developed regulations, guidance, and policies for ensuring the safe management and cleanup of solid and hazardous waste, and has established programs that encourage source reduction and beneficial reuse.

RCRA is actually a combination of the first federal solid waste statutes and all subsequent amendments. The Federal Hazardous and Solid Waste Amendments (HSWAs) of 1984 focused on waste minimization and phasing out land disposal of hazardous waste, and established corrective actions for accidental releases. The HSWAs provided increased enforcement authority to the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

The RCRA regulations are in Title 40 of the Code of Federal Regulations (CFR), Parts 239 through 282. Subtitle C focuses on hazardous solid waste, while Subtitle D contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the Federal landfill criteria. Subtitle D sets minimum federal criteria for the operation of municipal waste and industrial waste landfills, including design criteria, location restrictions, financial assurance, corrective action (cleanup), and closure requirements. States play a lead role in implementing these regulations and may set more stringent requirements.

State

Water Supply and Conservation

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code §13000 *et seq.*) passed by the California Legislature in 1969 established the State Water Resources Control Board (SWRCB) as the State water pollution control agency for all purposes stated in the federal CWA. The Act also divided California into nine regional water quality control boards charged with promulgating water quality regulations, preparing and adopting regional water quality control plans, and performing

enforcement actions, such as issuing cleanup and abatement orders, among other responsibilities. Each regional board reports to and coordinates with the SWRCB. The SWRCB serves as the appellate body for most judicial decisions of the regional boards. The regional boards review and approve closure and post-closure plans for solid waste landfills in the State, and ensure that water quality is protected during the closure and post-closure maintenance periods. The City of Alameda is located in Region Two, administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB).

The Porter-Cologne Water Quality Control Act requires each regional board to adopt a water quality control plan for the region based on a watershed management approach, subject to approval by the SWRCB, that sets water quality objectives to ensure reasonable protection of past, present, and probable future beneficial uses of water. The plans must identify and define all beneficial uses subject to protection. The water quality plans must establish a program for achieving the water quality objectives along with a time schedule for achieving them and a program for monitoring to determine compliance with the objectives. The most recent water quality control plan for the San Francisco Bay Basin (also known as the Basin Plan) was adopted on November 5, 2019. It is the seventh comprehensive revision to the Basin Plan since the first plan was approved by the SWRCB in 1975. The Basin Plan establishes water quality standards pursuant to the Clean Water Act, and must be approved by the EPA in addition to the SWRCB.

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to issue waste discharge requirements (WDRs) for facilities and projects requiring an NPDES permit. The WDRs cover all discharges that could affect the quality of waters of the State, including both surface water and groundwater. SWRCB Order No. 2013-0058 prescribes WDRs for sanitary sewer systems that are intended to reduce water quality impacts resulting from sanitary sewer overflows (SSOs). The regional water boards and the SWRCB are required by Water Code Section 13193 *et seq.* to collect and make public data on SSOs, including the cause, estimated volume, location, date, time, duration, whether or not the SSO reached or may have reached waters of the State, and the response and corrective action taken.

On May 2, 2006, the SWRCB adopted Order 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems," to comply with Water Code Section 13193 and to establish the framework for the Statewide SSO Reduction Program. On July 26, 2013, the SWRCB amended Order 2006-0003-DWQ with Order 2006-0058-EXEC, which defines (in Attachment A of Order 2006-0058-EXEC) three categories of SSOs related to the degree of harm they may pose to waters of the State. An operator is required to notify the California Office of Emergency Services within 2 hours of a Category 1 SSO of 1,000 gallons or more, with less stringent reporting requirements applicable to smaller Category 1 SSOs or Category 2 or 3 SSOs. A Category 1 SSO is one that discharges to waters of the State or to a Municipal Separate Storm Sewer System (MS4).

California Urban Water Management Planning Act

Prior to the adoption of the Urban Water Management Planning Act in 1983 (California Water Code §§10610-10656), there were no specific requirements that water suppliers conduct long-term

resource planning. Following passage of the Act, all urban water suppliers within California that serve more than 3,000 customers or provide over 3,000 acre-feet (AF)¹ of water annually are required to prepare and adopt an urban water management plan (UWMP) and update it every five years, and submit the plan to the California Department of Water Resources (DWR), which ensures that it complies with the statutory requirements. The UWMP provides the basis for a water supplier's short- and long-term water management and planning, including preparation for droughts or other water supply shortage circumstances, such as emergency outages. UWMPs may also serve as the foundation for other documents that incorporate water analyses, including a supply and demand analysis within a General Plan; a Water Supply Assessment prepared pursuant to Senate Bill (SB) 610; a Water Supply Verification (SB 2213 Verification); the technical basis for environmental analysis required under CEQA; Integrated Regional Water Management (IRWM) Plans; Groundwater Sustainability Plans (GSPs); and other assessments. UWMPs provide essential information to DWR and the State in assessing progress toward achieving the goal of a Statewide 20-percent reduction in per-capita water use by the year 2020.

A UWMP must clearly define the water agency's service area, including geographic boundaries, current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. Population must be projected in five-year increments for at least 20 years, based on data provided by local or regional land use planning agencies. Using those same five-year increments, the UWMP must project water demand under normal rainfall years, single-year droughts, and multi-year droughts lasting at least five years, and must identify and quantify all existing and planned water supplies to meet projected demand under each of the rainfall scenarios. For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies must be provided.

If groundwater is identified as an existing or planned source of water available to the supplier, the UWMP must describe the groundwater basin or basins from which the urban water supplier pumps groundwater, and identify the current version of any groundwater sustainability plan or alternative adopted pursuant to Water Code Section 10735.2 *et seq.* The UWMP must disclose the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years, along with projections on future amounts projected to be extracted. Retail urban water suppliers must also break down water usage by water use sectors, including the following:

- Single-family residential
- Multifamily
- Commercial
- Industrial
- Institutional and governmental
- Landscape

¹ An acre-foot is the amount of water necessary to cover 1 acre of land to a depth of 1 foot, and is equivalent to 325,851.43 gallons, or 43,560 cubic feet.

- Sales to other agencies
- Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof
- Agricultural
- Distribution system water loss

Another required component of a UWMP is a water shortage contingency plan that addresses six water shortage levels of 10-, 20-, 30-, 40-, 50-, and greater than 50-percent supply shortages, as well as an analysis of water supply reliability. In September 2014, the Act was amended by Senate Bill (SB) 1420 to require urban water suppliers to provide descriptions of their water demand management measures and report on their distribution system water loss. Most water agencies have adopted a wide range of water demand management measures, such as plumbing retrofits, water audits, leak detection, high-efficiency appliance rebates, landscape conservation programs and incentives, public information programs, school education programs, and more.

Senate Bills 610 and 221

Senate Bills 610 and 221, both passed in 2001, amended State law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires a lead agency conducting environmental review of a “water-demand project” pursuant to CEQA to prepare or obtain a Water Supply Assessment (WSA) prepared by the applicable urban water supplier that demonstrates an adequate water supply for the proposed project. The WSA is to be incorporated into the CEQA document. If there is an adopted UWMP that accounts for water demand projected for the proposed project, the CEQA review can draw on that analysis and a separate WSA is not required.

A “water-demand project” includes any of the following:

- A residential development of more than 500 dwelling units;
- A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A hotel or motel, or both, having more than 500 rooms;
- An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects listed above; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

If a project would be served by a public water system with fewer than 5,000 service connections, then a “water-demand project” is: 1) a residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of a public water system’s existing service connections; or 2) a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

SB 221, a companion measure to SB 610, was intended as a ‘fail safe’ mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should, i.e., before construction begins. Under SB 221, approval by a city or county of residential subdivisions of more than 500 dwelling units requires a written verification of sufficient water supply from the water supplier. Similar to SB 610, a verification is also required for a project that would be served by a water supplier that has fewer than 5,000 service connections, if the subdivision would increase the number of the public water system’s existing service connections by 10 percent or more. The verification must be demonstrated prior to the adoption of the final subdivision map, which ensures that the sufficient water supply is available to serve a new subdivision before construction begins. The verification can use information from the WSA prepared for the project.

Water Conservation Act of 2009

The Water Conservation Act of 2009 (Senate Bill X7-7) requires that all water suppliers increase their water use efficiency and reduce urban water consumption by 20 percent by 2020, compared to its base daily per-capita water use. The base daily per-capita water use is determined differently depending on the characteristics of the water supplier, but for the majority it is calculated as the average over a continuous 10-year period ending no earlier than December 31, 2004 and no later than December 31, 2010. SB X7-7 also established an interim conservation target of a 10-percent reduction in demand by December 31, 2015. All water suppliers were required to submit conservation plans to DWR by July 1, 2011 outlining how they would meet the conservation targets.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code) is the first statewide “green” building code in the U.S. The first edition adopted in 2008 was intended to assist the State in meeting the greenhouse gas (GHG) reduction goals established by AB 32, which required Statewide reduction of GHG emissions to 1990 levels by 2020. Updated every three years by the California Building Standards Commission, the most recent CALGreen Code was adopted in 2019.

Codified in Title 24, Part 11 of the California Code of Regulations, the purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental quality. The CALGreen Code applies to the siting, planning, design,

operation, construction, use, and occupancy of every newly constructed building or structure. It requires the recycling or salvaging for reuse of a minimum of 65 percent of nonhazardous construction and demolition waste generated during project development, and also includes requirements for stormwater control during construction. CALGreen includes mandatory measures for residential and non-residential construction, as well as a wide range of voluntary measures.

With respect to water efficiency, the CALGreen Code requires residential and non-residential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside the building by 20 percent. The 20-percent water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20-percent reduced flow rate specified in the CALGreen Code, or (2) by demonstrating a 20-percent reduction in water use from the building “water use baseline.” The CALGreen Code also requires diversion of at least 65 percent of the construction waste generated during most new construction projects. Agencies currently enforcing building codes are responsible for enforcement of the CALGreen Code.

California Model Water-Efficient Landscape Ordinance

The Water Conservation and Landscaping Act of 1990 (AB 325) required DWR to develop a Model Water-Efficient Landscape Ordinance (MWELo) that local agencies could adopt for purposes of reducing water consumption in landscaping, which comprises about half of urban water consumption in California. The first MWELo was adopted in 1993; an updated MWELo was adopted in 2010. At the height of the drought in 2015, Governor Edmund G. Brown issued Executive Order B-29-15 directing DWR to update the State’s MWELo through expedited regulation. The California Water Commission approved the revised MWELo on July 15, 2015. The updated Model Landscape Ordinance requires cities and counties to have adopted landscape water conservation ordinances by February 1, 2016 or to have adopted their own ordinance that is at least as effective in conserving water as the updated Model Ordinance. Alameda Municipal Code Section 30-58.4 requires projects to comply with the provisions of the current version of the California MWELo.

The current version of the MWELo applies to new landscape projects equal to or greater than 500 square feet (the previous threshold was 2,500 square feet) and rehabilitated landscape projects equal to or greater than 2,500 square feet. The ordinance sets restrictions on the amount of water that can be used to irrigate the landscape project, determined by the evapotranspiration rate applicable to the project site. A detailed Landscape Documentation Package must be prepared that shows how the project landscaping will achieve its allotted water budget. For landscape projects less than 2,500 square feet, a streamlined Prescriptive Compliance Approach may be used that employs a checklist of landscape standards that must be met and documented on the landscape plan. These standards include incorporating compost, limiting plant water use, adding mulch, limiting turf area, and requirements for irrigation systems.

Senate Bill 7

Senate Bill 7 (2016) is intended to encourage responsible water use and conservation. It requires water meters and submeters to be installed in individual apartments and other multi-family rental

housing buildings constructed after Jan. 1, 2018. According to the law, owners of such properties must provide residents with accurate information about the volume and cost of their water use, and water bills must be based on actual usage rather than by estimation or other methodology.

Solid Waste

California Integrated Waste Management Act

Intended to address the problem of decreased landfill capacity in California, the Integrated Waste Management Act of 1989 (AB 939) mandated a 25-percent Statewide reduction in solid waste disposal by 1995 and a 50-percent reduction by 2000 through source reduction, recycling, and composting. It required each city and county to prepare a Source Reduction and Recycling Element (SRRE), a component of the Integrated Waste Management Plan (IWMP) required of each county. The IWMP must identify waste transformation and/or disposal facilities with sufficient capacity to provide at least 15 years of solid waste disposal for the jurisdiction.

AB 939 created the California Integrated Waste Management Board (CIWMB), which subsequently became the California Department of Resources Recycling and Recovery (CalRecycle), and established a comprehensive Statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities. CalRecycle administers and provides oversight for all of California's State-managed non-hazardous waste handling and recycling programs, and provides training and support for the Local Enforcement Agencies (LEAs), which have responsibility for regulating and inspecting California's active and closed solid waste landfills, as well as materials recovery facilities, solid waste transfer stations, compost facilities, and more.

Senate Bill 1016

Senate Bill 1016 (2008) modified the waste diversion requirement established by AB 939 by requiring jurisdictions to report per-capita waste disposal in order to evaluate successful implementation of waste diversion. This was a shift away from the previous approach that relied on calculated waste generation and estimated diversion, and it both simplified and improved the accuracy of waste diversion calculations.

Assembly Bill 341

Assembly Bill 341 (2011) expanded the waste diversion mandate established by AB 939, setting a new target of diverting 75 percent of the State's solid waste from disposal by January 1, 2000. AB 341 also requires commercial businesses—including public entities—generating 4 cubic yards or more of solid waste per week to arrange for recycling services, which can include self-hauling or a subscription pick-up service. It also required each jurisdiction to create by July 1, 2012 a commercial waste recycling program to divert solid waste from businesses, unless the jurisdiction had already adopted such a program.

Assembly Bill 1826

Assembly Bill 1826 (2014) requires businesses to recycle their organic waste by April 1, 2016 and requires local jurisdictions across the State to implement by January 1, 2016 an organic waste

recycling program to divert organic waste generated by businesses, including multi-family residential dwellings that consist of five or more units. Organic waste subject to this law includes food waste, green waste, landscape and pruning waste, non-hazardous wood waste, and food-soiled paper waste that is mixed in with food waste. However, multi-family residential dwellings are not required to divert food waste.

Senate Bill 1383

Senate Bill 1383 (2016) establishes a Statewide methane emissions reduction target in order to reduce emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. As it pertains to solid waste generation, SB 1383 establishes targets to achieve a 50-percent reduction in the level of the Statewide disposal of organic waste from the 2014 level by 2020 and a 75-percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

Assembly Bill 827

State law AB 827 (2019) went into effect on July 1, 2020 and requires businesses and multifamily properties to provide customers with recycling and/or composting containers adjacent to each garbage container. Bins must be clearly labeled with educational signs.

California Green Building Standards Code (CALGreen)

The California Green Building Standards Code (CALGreen) (California Code of Regulations, Title 24, Part 11) mandates that 65 percent of all construction and demolition (C&D) debris generated at construction sites be recycled by a certified C&D debris processor. Project sponsors must prepare a Construction Waste Management Plan that lists the C&D materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale, and identifies the diversion facilities where the C&D debris will be taken. The plan must also specify construction methods that will be employed to reduce the amount of C&D debris generated, and must quantify by weight or volume the amount of C&D debris to be diverted from disposal. Reporting forms demonstrating compliance with the 65-percent diversion requirement must be filed with the enforcing agency, i.e., the local building department.

Natural Gas and Electricity

Senate Bill 100

Passed in 2018, Senate Bill (SB) 100 establishes an ambitious Statewide renewable energy commitment by requiring 100 percent of electric retail sales to end-use customers to be from zero-carbon sources by December 31, 2045. SB 100 also increases and accelerates California's interim Renewables Portfolio Standard (RPS) targets. The bill requires Statewide renewable power generation to comprise at least 50 percent of retail electric sales by 2026, and 60 percent of retail electric sales by 2030. A report to the California Legislature on progress toward these goals is required every four years, commencing with January 1, 2021.

Clean Energy and Pollution Reduction Act

The Clean Energy and Pollution Reduction Act (SB 350, 2015) establishes clean energy, clean air, and GHG reduction goals, including reducing GHG to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050. SB 350 establishes annual targets for Statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of Statewide energy efficiency savings in electricity and natural gas final end uses by January 1, 2030. To help meet these goals, large utilities are required to develop and submit Integrated Resource Plans (IRPs) that detail how utilities will meet their customers' resource needs, reduce GHG emissions, and ramp up the use of clean energy resources using cost-effective and feasible methods.

Regional/Local

EBMUD Wastewater Control Ordinance

The East Bay Municipal Utility District (EBMUD) adopted its Wastewater Control Ordinance in August 2013 to regulate the interception of wastewater and industrial wastes and to control wastewater to provide the maximum public benefit of its wastewater disposal facilities. The regulations include provisions for source control in order to monitor and control quantity, quality, and flow of wastewater and industrial waste. The Wastewater Control Ordinance establishes fees for use of EBMUD's wastewater treatment facilities and includes provisions for enforcement and penalties for violations.

The ordinance only allows community sewers to connect to EBMUD interceptors, and prohibits the discharge of stormwater or groundwater without authorization. Discharge of garbage or wastewater that creates a fire or explosion hazard is prohibited. The ordinance also establishes discharge limits on pH, temperature, heavy metals, oil and grease, chlorinated hydrocarbons, and cyanide.

EBMUD Private Sewer Lateral Ordinance

In 2011 EBMUD established a Regional Private Sewer Lateral Program, intended to help fix old, cracked sanitary sewer pipes that need repair to prevent the infiltration of rainwater, which can overwhelm wastewater treatment facilities and lead to the release of partially treated wastewater into the Bay. EBMUD adopted a Regional Private Sewer Lateral (PSL) Ordinance that year that requires affected property owners to obtain a certificate from EBMUD certifying that all of their PSLs are leak-free. To obtain certification, a contractor has to conduct a closed-circuit television (CCTV) inspection of the PSL that must be witnessed by an EBMUD inspector and must pass an EBMUD verification test.

The PSL Ordinance applies to Alameda property transfers, building permits, remodeling permits (for projects over \$100,000), or changes to meter size occurring on or after January 1, 2015. Owners are exempt from the ordinance if their PSL is less than 10 years old, verified by the permitting agency, at the date of final permit sign-off. EBMUD also encourages property owners to voluntarily seek certification of their PSLs without meeting any of the mandatory triggers. Other cities in the EBMUD service area were subject to the ordinance on earlier dates, with August 22, 2011 being the earliest

effective date. The City of Berkeley has its own PSL ordinance, and is not subject to the EBMUD ordinance.

Alameda County Mandatory Recycling Ordinance

The Waste Reduction and Recycling Act of 1990 (Measure D), a charter amendment passed by the voters of Alameda County, established the Alameda County Source Reduction and Recycling Board and adopted the goal of reducing the total tonnage of landfilled materials generated in Alameda County by 75 percent by a date to be chosen by the Recycling Board. The Recycling Board was also charged with establishing a date (or dates) to reduce, recycle, and compost further percentages of discarded materials. In 2003, the Recycling Board and Authority approved 2010 as the date by which 75-percent diversion was to be achieved, and in July 2010 the Recycling Board established the target year 2020 for reducing the amount of readily recyclable and compostable materials originating in Alameda County and deposited in landfills to no more than 10 percent of total materials originating in Alameda County and disposed of in landfills.

In furtherance of this goal, the Alameda County Waste Management Authority (ACWMA) passed Ordinance 2012-01, the ACWMA Mandatory Recycling Ordinance, on January 25, 2012. The ordinance requires businesses, institutions, and multi-family properties with five or more units to sort their recyclables from their trash. Multi-family property owners as well as businesses and institutions that generate food waste, such as restaurants and grocery stores, must also sort compostables from their trash. These requirements are effective within participating areas of Alameda County, including the City of Alameda.

On January 28, 2009 the ACWMA also passed a Plant Debris Landfill Ban Ordinance (No. 2008-01) that requires landscape professionals, residents, and businesses to separate all plant debris—including grass, leaves, shrubbery, vines and tree branches—from garbage. Those subscribing to 4 or more cubic yards of weekly on-site garbage service must place plant debris in the designated green waste bin, and those who haul to their local facility must deposit plant debris in the disposal facility's designated "clean green" area. The Plant Debris Landfill Ban Ordinance covers all cities and unincorporated areas in Alameda County.

Alameda Water Reuse Ordinance

The Alameda Water Reuse Ordinance (Municipal Code Chapter XXX, Article IIIA, Section 30.57 *et seq.*) requires new industrial, commercial, and residential subdivisions requiring a tentative map or parcel map, and that are located within a City-Designated Water Reuse Area, to provide a separate plumbing system to serve recycled water uses in the common landscape areas of the subdivision, such as golf courses, parks, greenbelts, and landscaped medians. This system must be independent of the plumbing system serving the domestic, residential, and other potable uses in the subdivision. City-Designated Water Reuse Areas are generally designated by EBMUD, though they can be modified by the City Council.

Alameda Bay-Friendly and Water-Efficient Landscape Ordinance

The Alameda Bay-Friendly and Water-Efficient Landscape Ordinance (Municipal Code Chapter XXX, Article IV, Section 30-58.1 *et seq.*) is intended to achieve the following:

- a) Promote quality, water-efficient landscaping, while recognizing Alameda's unique climate, soil conditions, and development patterns;
- b) Support EBMUD in its efforts to promote and implement water conservation measures;
- c) Implement the most recently adopted State MWELo;
- d) Establish standards for sustainable landscape practices in accord with the current version of the StopWaste.Org Bay Friendly Landscape protocols;
- e) Divert plant debris from landfills;
- f) Promote the use of greywater systems; and
- g) Discourage the planting of invasive plants.

The ordinance adopts and codifies the requirements of the California MWELo, discussed above.

Alameda Climate Action and Resiliency Plan

In addition to providing a roadmap for the City of Alameda to follow in reducing the City's GHG emissions and assist the State in meeting the GHG reduction goals established by AB 32 and SB 32 and also help the City address the growing threats posed by climate change, such as sea level rise, the *Alameda Climate Action and Resiliency Plan (CARP)*, adopted in September 2019, includes GHG reduction measures that will contribute to water conservation and reduce the City's overall water demand. For example, a measure calling for increasing the urban forest by planting 1,500 new trees in Alameda, in addition to the 2,000 new trees previously committed to, will decrease water use for drought-tolerant plants. In another example, water consumption will also be reduced by the City, in cooperation with EBMUD, promoting a system for rapidly detecting, reporting, and repairing water leaks. The City will also implement water-saving technologies at all City-owned buildings.

The CARP also includes measures to reduce solid waste generation, thereby reducing demand for landfill disposal capacity. For example, the application of compost to Alameda parks and open spaces is projected to divert 13,238 tons of organic waste from landfill disposal by 2030. The CARP also identifies actions intended to ensure resilience and long-term functionality of the City's stormwater and sewer systems, which will reduce demand for wastewater treatment (e.g., by reducing infiltration).

Alameda Municipal Code – Solid Waste and Recycling

Chapter XXI of the Alameda Municipal Code requires the occupant or owner of any premises in the City where solid waste is generated to contract with and pay the City's franchised waste hauler for weekly collection of solid waste and separate weekly collection, respectively, of recyclable materials and organic materials, unless exempted due to negligible waste generation. The City's franchise agreements require the franchisee to recycle recyclable waste, compost compostable waste, and

provide quarterly and annual reports to the Public Works Director on the tonnage and quantities, by type, of materials diverted from landfill disposal.

Article VI of Chapter XXI of the Alameda Municipal Code (Section 21-24 *et seq.*) requires sponsors of all construction projects in the City that will cost \$100,000 or more to prepare and implement a Waste Management Plan (WMP) that details provisions for the diversion of at least 50 percent of the project-generated construction and demolition debris from landfill disposal. It also encourages voluntary compliance by projects that will cost less than \$100,000 to construct. The requirements of Article VI apply to City-sponsored projects as well as private projects.

WATER SUPPLY, TREATMENT, AND DISTRIBUTION

Potable water is provided to the City of Alameda by EBMUD, which serves incorporated and unincorporated areas in much of Contra Costa and Alameda counties, encompassing 332 square miles of land area. The District serves 20 cities and 15 unincorporated communities, with a service population of about 1.4 million people. EBMUD's water system infrastructure includes a network of storage reservoirs, pumping plants, aqueducts, and 4,200 miles of delivery pipes.² In addition to five major storage reservoirs with a total capacity of 151,670 acre-feet (AF) of water,³ the distribution network includes 165 neighborhood reservoirs storing treated potable water, with a combined total capacity of 830 million gallons.

Water Treatment

The District operates six treatment facilities with a combined daily capacity of 375 million gallons per day (mgd). Two plants—the Walnut Creek Water Treatment Plant (WTP) and the Orinda WTP—operate year-round, while the Lafayette WTP, Sobrante WTP, and Upper San Leandro WTP are seasonal WTPs. The San Pablo WTP is a standby plant, and was not in operation in 2019.⁴ Each water treatment plant provides filtration, disinfection, fluoridation, and corrosion control. Water delivered to the City of Alameda is treated at both the Orinda and Upper San Leandro WTPs.

As of December 2020, the Orinda, Lafayette, and Walnut Creek WTPs were all operating at less than half their capacity, while the Upper San Leandro WTP was operating at about 65 percent capacity.⁵ The output from all of the EBMUD treatment plants exceeds the State or federal drinking water quality goals for total coliform, turbidity, and hazardous contaminants including aluminum,

² East Bay Municipal Utility District (EBMUD), Water Resources Planning Division, *Urban Water Management Plan 2015*, page 14, July 2016.

³ An acre-foot is the amount of water necessary to cover 1 acre of land to a depth of 1 foot, and is equivalent to 325,851.43 gallons, or 43,560 cubic feet.

⁴ East Bay Municipal Utility District (EBMUD), *2019 Annual Water Quality Report for January Through December*, [undated].

⁵ East Bay Municipal Utility District (EBMUD), Water Supply Engineering Daily Report for June 15, 2020, Water Production and Demand, accessed June 16, 2020 at: <https://www.ebmud.com/water/about-your-water/water-supply/water-supply-reports/daily-water-supply-report/>.

fluoride, bromate, chloramine as chlorine, total organic carbon, haloacetic acids, and trihalomethanes. The levels of these contaminants in EBMUD's treated water are substantially lower than the allowed maximum contaminant levels (MCLs) established by the EPA or RWQCB.⁶

Water Supply

The EBMUD obtains about 90 percent of its water supply from the Mokelumne River watershed in the Sierra Nevada, with the remainder collected from protected watershed lands in the East Bay area.⁷ The District has water rights to a maximum of 325 mgd of Mokelumne River water, subject to availability of Mokelumne River runoff, senior water rights of other users, and downstream fishery flow requirements.⁸ Local runoff provides 15 to 25 mgd of EBMUD's water supply during normal rainfall years, but it provides a negligible amount during drought years. Although the water supply is currently adequate to meet demand within the EBMUD, in the long term, the Mokelumne River supply cannot meet projected customer demand, even with mandatory water use restrictions.

EBMUD had a baseline per-capita water consumption of 161 gallons per day (gpd) averaged over the five-year period from 2003 to 2007.⁹ In response to Senate Bill X7-7, the Water Conservation Act of 2009, the District has adopted a minimum 5-percent reduction goal for 2020 of 153 gpd. It should be noted that District-wide demand was reduced by 20 percent in 2014 and by 28 percent in 2015 in response to calls for conservation and drought surcharges implemented due to the State's four-year drought.

EBMUD's planning to ensure an adequate water supply during both wet and dry years is based on future growth projections through 2040, determined by a *2040 Demand Study* completed in 2009, based on land use projections from local planning agencies. The district-wide land use analysis was conducted prior to the 2007-2009 economic recession, when there was an expectation that the economic expansion occurring prior to the recession would continue. Therefore, increased water demand associated with economic and population growth is likely to occur more slowly than projected in EBMUD's *2040 Demand Study*. The adjusted planning-level demand is 217 mgd in 2020 and 230 mgd in 2040, which does not reflect projected reductions as a result of conservation and recycling programs.¹⁰

EBMUD's *Urban Water Management Plan 2015*, prepared in compliance with the California Urban Water Management Planning Act of 1983, documents the District's planning activities to ensure adequate water supplies to meet existing and future demands for water. Its drought planning is based on modeling of rainfall runoff that occurred in 1976 and 1977, the driest recorded two-year

⁶ East Bay Municipal Utility District (EBMUD), *2019 Annual Water Quality Report for January Through December*, [undated].

⁷ East Bay Municipal Utility District (EBMUD), *WSMP 2040: Water Supply Management Program 2040 Plan*, page 3-1, Final April 2012.

⁸ EBMUD (2016), *op. cit.*, page 8.

⁹ EBMUD (2016), *op. cit.*, Table G-2.

¹⁰ EBMUD (2016), *op. cit.*, pages 48-52.

period, and also factors in the runoff from the 2014-2015 drought. EBMUD typically uses a three-year drought planning sequence (DPS) to assess the adequacy of its water supply. The first and second years of the DPS are modeled on the actual runoff that occurred in 1976 and 1977, respectively, and the third year is the average runoff from those two years, or 185 thousand acre-feet (TAF).

The UWMP determined that EBMUD would have sufficient water supplies to meet customer demand through 2040 during normal years and up to two dry years of a multi-year drought, but would need supplemental water supplies to meet projected demand during a third dry year after 2020 (supplies would be adequate through 2020). During a third year of drought there would be shortfalls of 2 TAF in 2025, 13 TAF in 2030, 24 TAF in 2035, and 48 TAF in 2040.¹¹ There would be sufficient excess supply during normal years for the District to recharge groundwater, either locally or at the off-site Semitropic Groundwater Bank, for later use during dry years.

During multi-year droughts when demand could exceed supply by up to 10 percent, EBMUD would rely on local and off-site groundwater storage to make up the shortfall. If there were insufficient local groundwater storage or the District was unable to recover its full contractual amount from the Semitropic Groundwater Banking Program, the District would look to secure additional supplies through a California Department of Water Resources (DWR) drought water bank or similar water purchase/transfer program.

Water shortages during prolonged droughts or due to short-term emergencies would also be addressed through implementation of EBMUD's Water Shortage Contingency Plan (WSCP), required by Section 10632 of the California Water Code. EBMUD adopted its first WSCP in 1992 and it has continued to evolve since. It was last updated in the 2010 UWMP to reflect the 2007-2010 drought, the completion of the Freeport Regional Water Facility (discussed below), and numerous other changes, and is updated again in the current UWMP.

In order to meet projected water demand during future drought years, in 2006 the EBMUD modified a prior contract executed in 2000 with U.S. Bureau of Reclamation (USBR) for delivery of Central Valley Project (CVP) water from the American River. The Long Term Renewal Contract (LTRC) that EBMUD executed with the USBR allows EBMUD to take delivery of CVP water during dry periods from an intake in the Sacramento River rather than the American River. Pursuant to the original contract, the Freeport Regional Water Authority (FRWA), a joint powers agency created by EBMUD and the Sacramento County Water Agency (SCWA) in 2002, developed the Freeport Regional Water Project (FRWP), bringing it online in 2011. Among other facilities, the FRWP includes a 185-mgd water intake (with fish screens) and pumping plant on the Sacramento River near Freeport, approximately 20 miles of 72-inch-diameter pipeline, and two 100-mgd inline pumping plants to transport Sacramento River water to EBMUD's Mokelumne Aqueducts.

The LTRC provides for delivery of up to 133,000 acre-feet (AF) in a single qualifying year, not to exceed a total of 165,000 AF in three consecutive qualifying years. Qualifying years are those in

¹¹ EBMUD (2016), *op. cit.*, Table 4-5.

which EBMUD's total stored water supply is forecast as of March 1 to be below 500 TAF on September 30 of that year. EBMUD exercised its LTRC for the first time during the 2014-2015 drought and delivered CVP water to its customers. The District received 18,641 AF of CVP supply in 2014 and another 33,250 AF of CVP water in 2015.¹²

In addition to these water supply sources, since 2010 EBMUD has been operating the Bayside Groundwater Facility to provide an additional water supply source during droughts. During normal rainfall years, potable water is injected into the South East Bay Plain Groundwater Basin (SEBPGB) in the vicinity of the City of Hayward. The District can draw on this stored water during dry years via extraction wells that can produce 2 mgd over a 6-month period. This supplemental supply can produce about 1,120 AF/year (AFY), which the District plans to expand to up to 10,080 AFY in the future. Although the injection of surplus water into the SEBPGB is expected to exceed the quantity of water extracted during dry years, EBMUD has not yet made groundwater injections due to the drought of the past four years.¹³

The District also continues to explore a variety of other long-term supplemental water supplies, including expansion of surface water storage in the Contra Costa Water District's Los Vaqueros Reservoir, partnerships with other water agencies, and the possibility of a jointly-owned regional desalination facility to produce potable water from ocean, Bay, and/or brackish water.

Pursuant to EBMUD's Water Supply Availability and Deficiency Policy 9.03, by March 1st of each year the District presents to the EBMUD Board of Directors a preliminary assessment evaluating the adequacy of that year's water supply. Following this preliminary assessment, the Board of Directors adopts a final Water Supply Availability and Deficiency Report before May 1st that updates the water supply projections based on the April 1st snow survey by DWR. Based on these reports, the Board of Directors decides whether to declare a water shortage emergency and implement a drought management program, institute mandatory water use reductions, and/or obtain/pursue supplemental supplies. The preliminary report can also be used as the basis for requesting CVP water that year if EBMUD's water supply is projected to be deficient. EBMUD continues to monitor the water supply throughout the year and assess the effects on demand of any voluntary or mandatory rationing policy.

The WSCP contains a variety of other provisions for addressing water supply shortfalls, including demand reduction strategies and agreements obtaining emergency water supplies from neighboring agencies, including the Contra Costa Water District (CCWD), San Francisco Public Utilities Commission (SFPUC), Dublin San Ramon Services District (DSRSD), and City of Hayward (Hayward).

¹² EBMUD (2016), *op. cit.*, Sections 1.4 and 1.5.

¹³ EBMUD (2016), *op. cit.*, page 63.

Recycled Water

EBMUD Policy 9.05 requires that customers use non-potable water, including recycled water, for non-domestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health, and not injurious to plant, fish, and wildlife, in order to offset demand on EBMUD's limited potable water supply. Appropriate recycled water uses include landscape irrigation, commercial and industrial process uses, toilet and urinal flushing in non-residential buildings, and other applications. Although EBMUD does not currently have any recycled water service in Alameda, the City is located within EBMUD's East Bayshore Recycled Water Project service boundaries. As part of EBMUD's long-term water supply planning, future expansion plans will extend recycled water to the City, and could potentially serve a significant portion of the General Plan area.¹⁴ EBMUD will assess and consider the feasibility of providing recycled water to individual projects within the General Plan area for appropriate non-potable uses, including landscape irrigation, commercial and industrial process uses, and toilet and urinal flushing.

Distribution

The system of water supply pipelines that run under Alameda streets to provide potable water to the City's residents and businesses is owned, operated, and maintained by EBMUD. One exception is that the pipes in Alameda Point, the former Naval Air Station, are owned by the City, but they are maintained and operated by EBMUD.¹⁵ Water is delivered to the City via four underwater pipeline crossings at three separate locations between the City of Oakland, Alameda Island, and North Bay Farm Island. There are actually a total of seven pipelines, but only four remain in service. Because the pipelines are located in soils that have a high liquefaction potential, there is a concern that one or more of the pipelines could be ruptured by seismic shaking during a strong earthquake on one of the region's active faults, which could lead to an interruption in Alameda's water supply. Consequently, EBMUD is planning to remove all of the existing aging pipelines and construct three new pipeline crossings to ensure long-term reliability of the water distribution system, meet existing and future water needs, and facilitate repair and replacement of aging infrastructure. The sections of pipeline installed underwater would have an inner diameter of 24 inches and an outer diameter of 30 inches, constructed of fused high-density polyethylene (HDPE). The pipelines installed in streets would be steel or HDPE with an approximate outer diameter of 30 inches. The replacement pipelines would be constructed below the liquefaction zone, within more stable soils (Old Bay Mud), to ensure their resiliency in a strong earthquake.¹⁶ Project design features would further enhance the seismic resiliency of the pipelines. The environmental impacts associated with construction of these pipelines were previously disclosed in an EIR prepared by EBMUD, so further

¹⁴ David J. Rehnstrom, Manager of Water Distribution Planning, East Bay Municipal Utility District, re: Notice of Preparation of an Environmental Impact Report – Alameda General Plan 2040, Alameda [letter], August 27, 2020.

¹⁵ Bill Maggiore, Senior Civil Engineer, East Bay Municipal Utility District, Water Distribution Planning Group, personal communication, January 8, 2021.

¹⁶ *Ibid.*

analysis of the impacts of that project are not required.¹⁷ The locations of the existing and planned replacement pipelines are shown on Figure US-1.

Alameda is served by EBMUD's Central Pressure Zone, which has a service elevation range between 0 and 100 feet. The water supply to the City is entirely gravity fed, with no pump stations required within the City.¹⁸

STORMWATER DRAINAGE

The City operates and maintains a complex stormwater drainage system comprised of integrated storm drainage pipes, inlets, outfalls, culverts, pump stations, lagoons, sea walls, and perimeter levees, all intended to prevent flooding. Alameda is divided into eight major drainage areas, excluding Alameda Point, as shown on Figure US-2.

Due to Alameda's relatively flat geography, pump stations are a critical component to managing storm runoff and preventing flooding. The City operates ten pump stations distributed throughout the two islands that convey storm runoff to San Francisco Bay; their locations are shown on Figure US-3.

The Natural Resources Conservation Service (NRCS) classifies all soils into four hydrologic soil groups (A,B,C, and D) according to their infiltration rate, which correlates to the ability of the soil to absorb and transmit water, and therefore affects the amount of runoff during storms. NRCS has classified all soils within the City of Alameda as group D, which have very slow infiltration rates. This factor increases the volume and rate of runoff during peak storm events, amplifying the magnitude of flood risk experienced throughout the City.

Rainwater that isn't absorbed into the ground is collected in catch basins and inlets located in city streets. Once storm flow enters a storm drain via these inlets, it travels through storm drain pipes until discharging to a lagoon, surrounding waters (i.e. San Francisco Bay, Oakland Estuary, or San Leandro Bay), or reaching a pump station. The tributary areas for each drainage sub-area in Alameda and the total length of associated storm drain pipes (12 inches and larger) and pump stations are listed in Table US-1. The majority of pipes that discharge directly to the Bay do not have flap gates. The lagoons in Alameda, discussed in more detail below, eventually drain to surrounding waters through a system of storm drain pipes and weirs. Although generally not fitted with flap gates, weir structures and slide gates moderate backflow into the lagoons from the surrounding waters.

While the pump stations on Alameda Island are critical for providing flood protection, Bay Farm Island relies almost entirely on gravity flow outlets and storage in lagoons for flood protection. There are three pump stations (one automated and two manually controlled) that empty and

¹⁷ East Bay Municipal Utility District, *Alameda-North Bay Farm Island Pipeline Crossings Project Draft Environmental Impact Report*, July 2016.

¹⁸ Bill Maggiore, EBMUD, *op cit*.



Figure US-1

Existing and Planned Water Supply Pipeline Crossings

Source: Panorama Environmental, Inc. and EBMUD, 2016

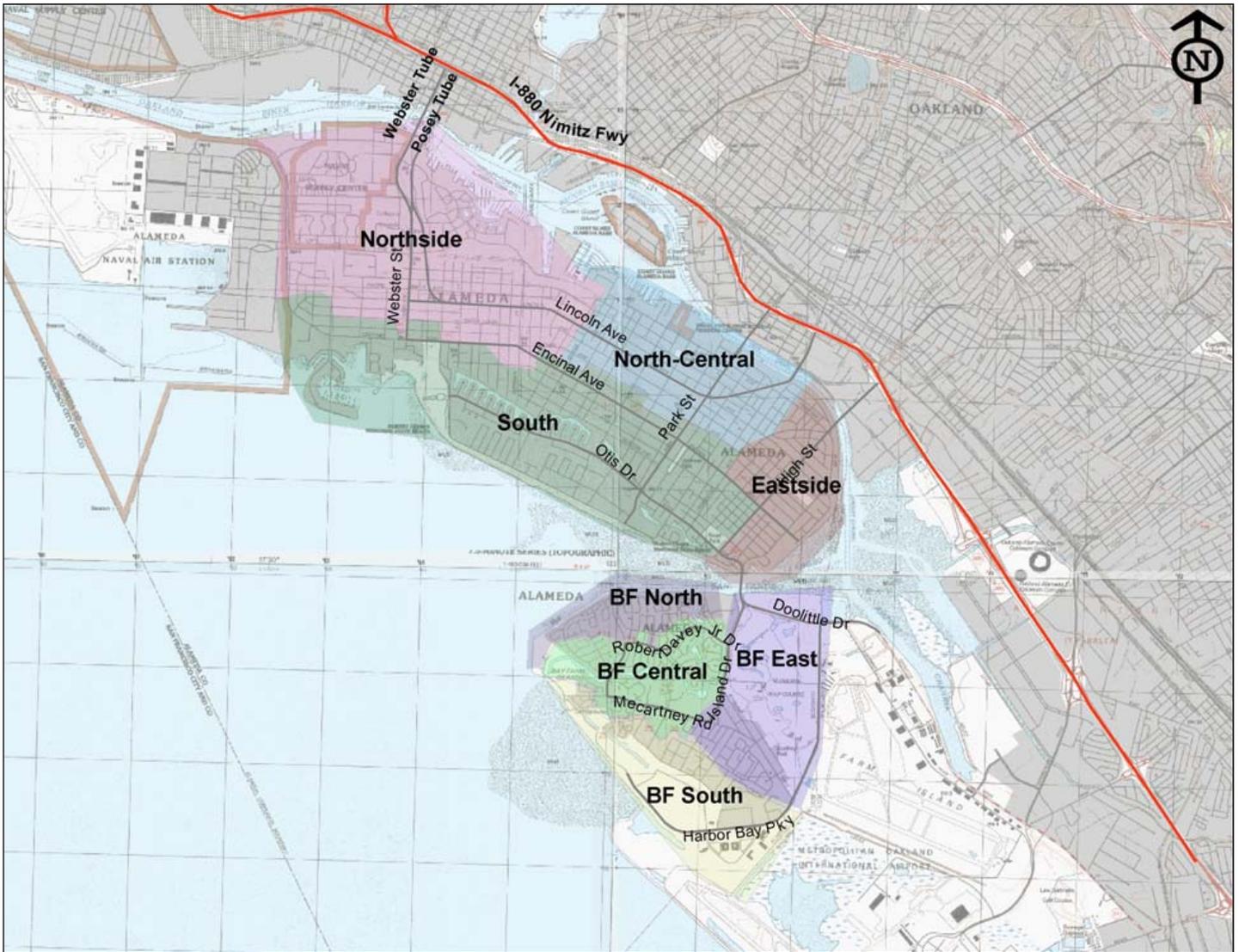


Figure US-2

Stormwater Drainage Sub-Areas

Source: Schaaf and Wheeler, 2008



Figure US-3

Pump Station Locations

Source: Schaaf and Wheeler, 2008

control water elevation in the lagoons. The two manual pump stations are operated to manage the Harbor Bay lagoon water surface elevations both for flood protection and seasonal recreational activities.

Table US-1
Pump Stations and Length of Storm Drain Pipe in Alameda Watershed Areas

Watershed Sub-Area	Area (square miles)	Pipe (linear miles)	No. of Pump Stations
Alameda Eastside	0.72	4.9	1
Alameda North-Central	1.0	6.2	0
Alameda Northside	2.3	24.9	6
Alameda South	2.4	11.2	0
Bayfarm East	0.93	5.1	1
Bayfarm North	0.38	3.7	1 (manual)
Bayfarm Central	0.58	11.1	0
Bayfarm South	0.85	8.2	1 (manual)
TOTAL	9.2	75.3	8 Automated 2 Manual

Source: Schaaf and Wheeler, 2008

In the 1950s, the Utah Corporation created five connected lagoons along the southwest shoreline of Alameda Island, between the original coast and the then-new South Shore Development. The lagoon system is shown on Figure US-4. The South Shore Lagoon system brings in salt-water from the San Francisco Bay and supports diverse wildlife, including egrets, cranes, night herons, blue herons, terns, coots, cormorants, many varieties of both resident and migratory ducks, and visiting geese. Although the lagoons are privately owned and can be used for recreational uses by the adjacent property owners and members of the Alameda West Lagoon Homeowners' Association (AWLHOA), the lagoon system is also a storm drainage retention and treatment pond for portions of Alameda Island, and their maintenance is shared 50/50 with the City of Alameda.

In 2000 the City commissioned preparation of a Long-Term Management Plan for the lagoons that lays out practices for vegetation management, lagoon maintenance, and sediment management. The vegetation management procedures address nitrogen management, aeration, chemical

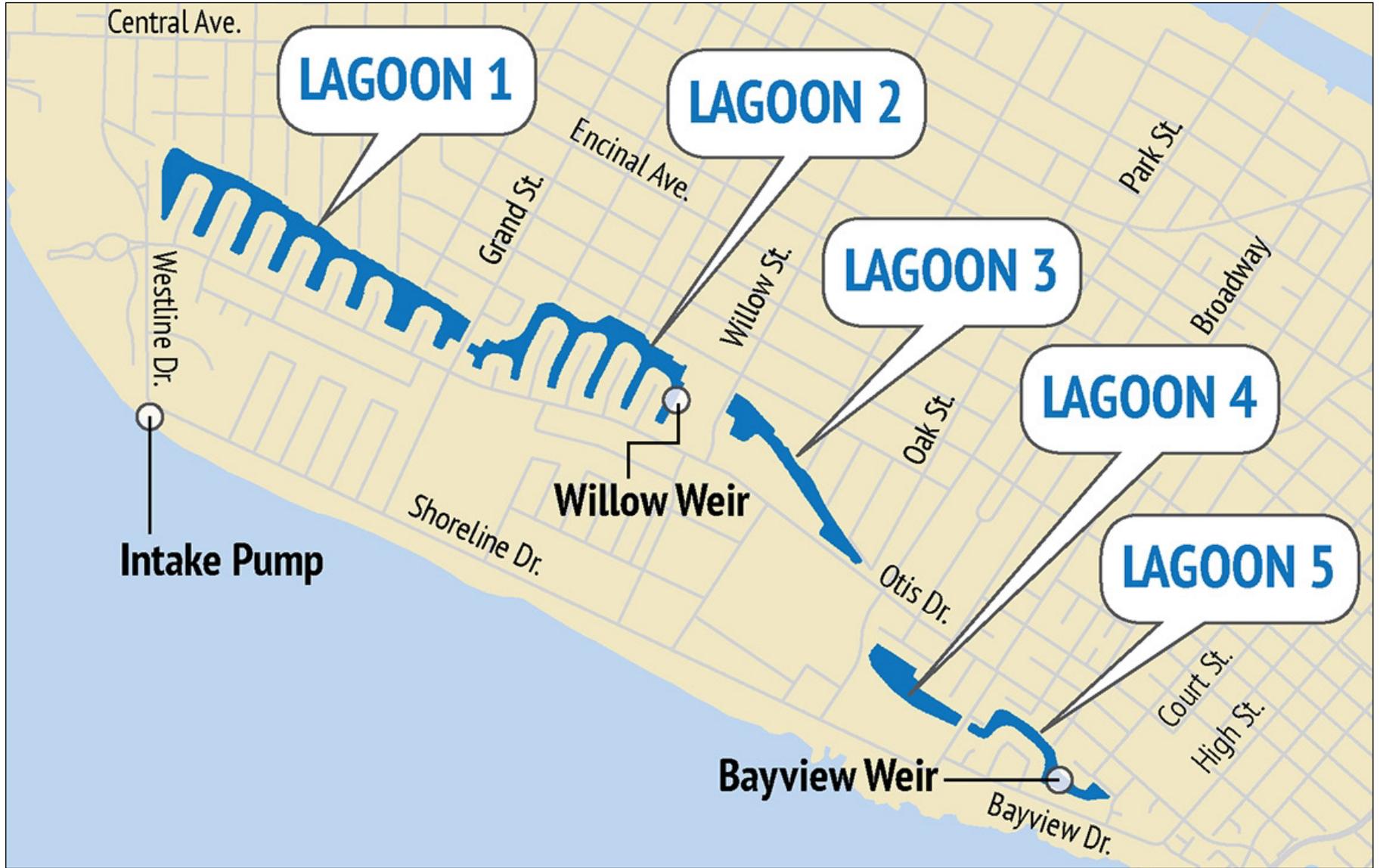


Figure US-4

Alameda Island Lagoon System

Source: Alameda West Lagoon Homeowners Association

controls, and harvesting of periphyton.¹⁹ It also addresses best management practices for homeowners, including landscaping and fertilization practices, maintenance of docks and watercraft, and prohibited activities. The use of aquatic pesticides within the Alameda Lagoons is necessary to manage the lake and maintain the beneficial uses that in addition to storm water retention include fishing, swimming, boating, aesthetics, and a habitat and resting place for waterfowl and migratory birds.

The 2008 *Storm Drain Master Plan* (SDMP) commissioned by the City established performance standards for new storm drainage systems and for upgrades or new tie-ins to existing systems. Improvement recommendations were developed with the goal of reducing 10-year flooding to the established standard of a hydraulic grade line no greater than the top-of-curb elevation. The SDMP provides an evaluation of drainage problem areas throughout the City. Based on identified deficiencies, the SDMP recommends improvements and assigns a priority of the improvements of Low, Medium, or High Priority. Recommended improvements include increasing capacity of pump stations, extension of storm drain pipes to areas not currently served, and expansion of the capacity of existing storm drain pipes. Recommended pipe diameters range from 15 inches to 60 inches. While recognizing its importance, the SDMP does not address in detail pump station maintenance or the maintenance of or periodic replacement of aging pipelines, which are ongoing responsibilities of the Public Works Department. The Capital Improvement Program (CIP) recommendations in the SDMP were updated in 2017.

WASTEWATER COLLECTION AND TREATMENT

Treatment

Wastewater in Alameda is collected in a network of sewer pipes and conveyed to EBMUD's South Interceptor in Oakland via inverted siphon pipelines underneath the Oakland Estuary; from there the flow is conveyed north to EBMUD's Main Wastewater Treatment Plant (WWTP) located near the eastern terminus of the San Francisco-Oakland Bay Bridge. The EBMUD plant treats wastewater from the cities of Alameda, Albany, Berkeley, El Cerrito, Emeryville, Kensington, Oakland, Piedmont, and part of Richmond, serving approximately 685,000 people in an 88-square-mile service area.

The WWTP provides secondary treatment for a maximum flow of 168 million gallons per day (MGD). Primary treatment is provided for up to 320 MGD. Storage basins provide plant capacity for a short-term hydraulic peak of 415 MGD. On average, about 63 million gallons of wastewater is treated every day.

EBMUD's laboratory analyzes samples of treated wastewater; the tests range from cyanide, metals, and polychlorinated biphenyls (PCBs) to bioassays using juvenile fish. The treated water is chlorinated for disinfection, then dechlorinated to protect marine life before being discharged underwater 1 mile off the East Bay shore into San Francisco Bay.

¹⁹ Periphyton is a complex mixture of freshwater organisms including algae and cyanobacteria that are attached or cling to plants and other objects projecting above the bottom sediments of aquatic ecosystems.

The solids that are removed, or biosolids, undergo a separate treatment process, where they are heated to a high temperature for an extended period of time in “digesters,” to reduce disease-causing organisms and break down the organic matter into a soil-like material. Approximately 60,000 to 70,000 wet tons of biosolids are produced annually by EBMUD, which are beneficially reused as a soil amendment at nearby non-food crop farm sites and as alternative daily cover at local landfills. The biosolids are regularly monitored and tested to ensure that they meet or surpass the strict quality and safety standards established by the EPA, State of California, and local governments.

Collection

There are approximately 140 miles of City-owned sanitary sewers and 42 sewage pump stations in Alameda, including 14 miles of pipes and 9 pump stations located in Alameda Point, the former Alameda Naval Air Station site. In addition, there are over 10 miles of pipelines and 7 pump stations located in Alameda that are part of the EBMUD wastewater system, which serves as the “backbone” of Alameda’s sewer network. Wastewater collected in the system is conveyed to EBMUD’s WWTP via the South Interceptor, as described above. During periods of wet weather when the capacity of the interceptor is exceeded, flows in the South Interceptor may be diverted to EBMUD’s Oakport and San Antonio Creek Wet Weather Facilities (WWFs) in Oakland for storage and/or discharge. (EBMUD operates a third WWF at Point Isabel in El Cerrito, which serves its northern service area.)

Figures US-5 and US-6 show the existing Alameda sewer system. More than 90 percent of the sewer pipes have a diameter of 12 inches or less, and over 75 percent of the pipes are 8-inch diameter or less. Although some portions of the collection system date to the early 1900s, more than 30 percent of the system has been rehabilitated or replaced in the past 30 years. Most older sewers are constructed of clay pipe materials, while plastic materials are used for newer sewer construction and rehabilitation. In order to reduce the problem of infiltration and inflow (I/I) into the City’s wastewater collection system through cracks in pipelines, the City adopted an upper lateral compliance program in the late 1980s to provide for repair or replacement of private sewer laterals at the time of property sale, transfer, or major remodel. This program has resulted in the rehabilitation or replacement of over 6,000 private laterals city-wide since the program was instituted. In 2011 the City joined the EBMUD Regional Private Sewer Lateral Program, described above.

The sewer system also includes approximately 19,000 private sewer laterals, where the property owner is responsible for maintenance and repair of the entire service lateral to the connection to the City’s sewer main. However, the City takes responsibility for replacement of the lower portion of the lateral (within the public right-of-way) when the public sewer main to which it is connected is rehabilitated or replaced, or if the lower lateral fails, whichever occurs first. The sewer system also includes a number of private sewer systems, primarily on Harbor Bay Isle and in new developments on the western side of Alameda Island; these private systems are the responsibility of individual Homeowner Associations.



Figure US-5

Existing Sewer Network on Alameda Island

Source: RMC Water and Environment, 2015



Figure US-6

Existing Sewer Network on Bay Farm Island

Source: RMC Water and Environment, 2015

Historical Problems with the Wastewater Collection System

Starting in 2007, the EPA issued a series of regulatory decisions that resulted in the remand of EBMUD's permit for its WWFs by the SWRCB because the WWFs were not providing full secondary treatment prior to discharge, and were therefore operating in violation of the federal Clean Water Act. In response, the SWRCB issued a Cease and Desist Order (CDO) to EBMUD, requiring it to eliminate discharges from its WWFs, and subsequent compliance orders to both EBMUD and the Satellite agencies (its tributary agencies, including Alameda). A Findings of Violation and Order for Compliance, or Administrative Order (AO), was issued to each of the Satellites in November 2009 that required the agencies to develop and implement programs necessary to reduce SSOs and further reduce I/I, which causes or contributes to discharges from EBMUD's WWFs. For Alameda, the requirements of the AO included development of an Asset Management Implementation Plan (AMIP); a PSL Inspection and Repair/Replacement Program; Flow Monitoring and I/I Assessment Plan; Inflow Identification and Elimination Plan; Pump Station Improvement Plan; and a Sewer Cleaning and Inspection Program. The requirements of the AO were converted to a Stipulated Order for Preliminary Relief (SO) in September 2011.²⁰

Since 2009, Alameda has prepared the plans and reports and implemented the programs required under the AO and SO. The City also completed a *Sanitary Sewer System Hydraulic Analysis* in 2010, including development of a hydraulic model to evaluate system capacity and identify any needed sewer capacity improvements, and a *Sanitary Sewer Pump Station Assessment Report* to identify needed structural and reliability improvements to the City's sewer pump stations. To address the capital demands of its aging sewer system, the City also completed a sewer rate study in 2010 and adopted a 14-percent annual increase to its sewer service charge for a three-year period.

In 2013, EBMUD and the seven Satellite agencies entered into negotiations with the EPA, SWRCB, and RWQCB (Plaintiffs) and two non-governmental organizations, San Francisco Baykeeper and Our Children's Earth Foundation (Intervenor Plaintiffs), on a Consent Decree (CD) intended to eliminate discharges from the WWFs over an approximate 20-year period through programs designed to reduce I/I in the Satellite collection systems, as initiated under the AO and SO. The CD incorporates the requirements of the Satellite and EBMUD SOs, as well as a program to accelerate the identification and elimination of inflow and "rapid infiltration" sources, and processes for documenting compliance toward reducing WWF discharges and eliminating them by the required compliance dates. The CD also imposes monetary penalties for non-compliance with any of the requirements. For the Satellites, including Alameda, the CD requires specified annual amounts of sewer rehabilitation, inspection, and cleaning; continued implementation of PSL compliance and inflow elimination programs; and, for Alameda, the pump station renovation plan. The CD became final in September 2014. In response, the City updated its sewer rate study in October 2014 to reflect the requirements of the CD, and adopted a sewer service charge increase of 3 percent per year for the next five years, effective Fiscal Year 2015/2016.²¹

²⁰ City of Alameda, *Sewer Master Plan*, Section 1.3: Background, November 2015.

²¹ *Ibid.*

Although the Alameda Point portion of the City's sewer system is not specifically covered by the requirements of the CD (other than for repair of "acute" defects and "hot spot" cleaning of areas with a history or at risk for SSOs), the CD does state that the City must require rehabilitation of existing sewer mains and laterals in Alameda Point as a condition of approving building permits for any property that is developed, redeveloped, or re-used. Accordingly, the City's Master Infrastructure Plan (MIP) for Alameda Point provides for rehabilitation and replacement of the sewer infrastructure as part of redevelopment of the former base.

Alameda Sewer Master Plan

The City adopted a Sewer Master Plan (SMP) in November 2015 that is intended to confirm that the wastewater collection system has adequate capacity to handle peak wet-weather flows, as required for the System Evaluation and Capacity Assurance Plan element of the Sewer System Management Plan (SSMP). It is also intended to satisfy the Rehabilitation and Replacement Plan requirements of the SSMP and CD and establish a firm basis for project priorities and budgets in the City's 20-year Capital Improvement Program.

Hydraulic modeling was performed as part of the SMP to simulate the actual performance of the sewer system during both dry and wet weather conditions. Peak I/I flows were simulated under a 7-hour historical storm (the "EBMUD design event"), which occurs approximately every five years. The modeling indicated that overall, the Alameda system has adequate capacity to convey peak wet-weather flows. Only two potential capacity deficiencies were identified, both located within and/or downstream of the Harbor Bay Business Park area. Proposed sewer capacity improvements were developed for these areas, consisting of pipe upsizing along Harbor Bay Parkway and Beach Road.

The modeling also provided updated estimates of peak wet-weather flows to the modeled system pump stations, which were compared to the existing and planned station firm capacities (firm capacity is the capacity of the pump station with the largest pump out of service). A number of the system pump stations have already been planned for capacity upgrades as part of the City's Pump Station Renovation program. The results indicated that all of the pump stations (except those with only a single pump) have adequate existing or planned firm capacity to handle estimated peak wet-weather flows. However, all of the pump stations with only one pump have high-level gravity bypass pipes that can prevent overflows if the pump is out of service or pump capacity is exceeded.

The SMP also concluded that while climate change and predicted sea level rise may result in increased rainfall and higher groundwater levels in the system in the future, thereby increasing I/I potential, the City will continue to rehabilitate and replace sanitary sewers, and property owners will continue replacing their private service laterals, consistent with the PSL Ordinance, and these actions are expected to provide continued improvements to the City's sewer capacity that will provide the necessary adaptation to the changing climate.

Alameda Point Sewer System

The sewer system serving Alameda Point is hydraulically separate from the system serving the rest of the City. Wastewater flows from Alameda Point discharge to EBMUD's Pump Station R, located on the north side of Alameda Point, from where they are pumped directly to the inlet of the Alameda siphons in the Oakland Estuary. As part of the preparation of the City's *Master Infrastructure Plan* (MIP) for Alameda Point, a hydraulic model of the future trunk sewer system was developed by the environmental engineering firm RMC in order to estimate system flows and confirm the sizing of the backbone sewer infrastructure proposed in the MIP. The flow estimates were based on the ultimate development of approximately 1,400 residential units and 5.5 million square feet of commercial floor space. The sewer improvements would be constructed in phases, with completely new sewer infrastructure constructed initially in the designated Development Area of Alameda Point, and incremental rehabilitation and replacement of the infrastructure in the designated Reuse Area. The model analysis found the proposed backbone sewer network defined in the MIP to be adequate to convey the wastewater flows anticipated to be generated in Alameda Point.²²

SOLID WASTE COLLECTION AND DISPOSAL

Collection and Processing

Commercial and residential solid waste generated in Alameda is collected by Alameda County Industries (ACI), a franchised hauling company that provides waste collection services to the cities of Alameda (excluding the Oro Loma Sanitary District), and San Ramon, and to the Castro Valley Sanitary District. ACI also collects organic/green waste and recyclable materials, including plastic containers (Nos. 1–7), cardboard, mixed paper, aluminum and metal containers, scrap metal, and aseptic containers.

Garbage collected throughout Alameda is hauled to the Davis Street Transfer Station in San Leandro, where it is loaded into higher-capacity trailer trucks and hauled to Altamont Landfill in eastern Alameda County. Recyclable materials, which are collected from residential and commercial customers in separate bins, are hauled to ACI's Aladdin Materials Recovery Facility (MRF) and Transfer Facility in the City of San Leandro, which sorts, separates, and bundles the recyclables for sale to secondary markets. The Aladdin MRF processes 11,572 tons of materials annually.²³ In operation since 1995, the capacity of the facility was expanded in 2019 from a permitted capacity

²² Carlson, Barbee & Gibson, Inc., *Master Infrastructure Plan: Alameda Point, Alameda, California*, March 31, 2014.

²³ StopWaste, Alameda County Materials Flow Map [interactive map], Accessed January 5, 2021 at: <http://flowmap.stopwaste.co/>.

of 412 tons per day (TPD) to 620 TPD, with an allowance for temporary exceedances up to 10 percent for a maximum of 20 days per year.^{24, 25}

Organic green waste and food waste is also collected by ACI from dedicated collection bins and hauled to the Aladdin MRF, where it is transferred to larger trucks and hauled to the Newby Island Resource Recovery Park in Fremont. This facility, operated by Republic Services, includes a landfill disposal facility, construction and demolition (C&D) debris processing facility, foam recycling drop-off, and organics composting facility. The composting facility processes an average of 625 TPD of organic waste, producing more than 100,000 cubic yards of compost, mulch, and wood chips each year for sale to markets throughout northern California.²⁶

Disposal

As noted above, garbage in Alameda is hauled to the Davis Street Transfer Station, then transferred to Altamont Landfill, operated by Waste Management, Inc. (WMI). Altamont Landfill occupies 2,170 acres of hilly land outside of Livermore. This Class II/III landfill accepts mixed municipal waste as well as tires (shredded and whole), other designated waste, industrial waste, green waste, contaminated soil, C&D debris, asbestos-containing waste, and ash. It has a daily permitted capacity of 11,150 TPD and remaining capacity of 65,400,000 tons.²⁷

ELECTRICITY

Electric service in Alameda is provided by Alameda Municipal Power (AMP), which was founded in 1887 and is the oldest municipal electric utility in California. AMP owns local distribution lines and has joint ownership of generation and transmission resources with other municipally-owned utility members of the Northern California Power Agency (NCPA), a joint powers agency. AMP provides electric power to nearly 35,000 residential and commercial customers via a distribution network that includes:

- 178.1 circuit miles of underground distribution lines
- 86.1 pole miles of overhead distribution lines
- 6.8 miles of overhead transmission lines
- 1.9 circuit miles of underground transmission lines

²⁴ City of San Leandro, *ACI Materials Recovery Facility and Transfer Facility Expansion Project Final Initial Study-Mitigated Negative Declaration*, October 2017.

²⁵ Chris Valbusa, General Manager, Alameda County Industries, Inc. (ACI), personal communication, January 5, 2021.

²⁶ Republic Services, Welcome to Republic Services Newby Island Resource Recovery Park, Accessed January 5, 2021 at: <https://www.republicservices.com/municipality/newby-island>.

²⁷ CalRecycle, Solid Waste Information System (SWIS), Altamont Landfill & Resource Recovery (01-AA-0009), Accessed January 5, 2021 at: <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/7?siteID=7>.

AMP purchases power from a variety of generators, providing 100 percent clean power to Alameda. The renewable sources include hydroelectric (46.5 percent), geothermal (9.6 percent), wind (5.8 percent), and landfill gas-generated turbines (9 percent). The remaining power is provided from unspecified sources, but AMP states that all of its power is 100 percent clean as of January 1, 2020.²⁸

Most of AMP's long-term power purchase agreements will expire by 2030, driving a need for the utility to identify significant new power sources by then. To tackle this task, AMP prepared an Integrated Resource Plan (IRP), completed in July 2020, that identifies a strategy for procuring short- and long-term clean energy purchases to meet existing and future electrical demand during the 2021-2045 planning period.²⁹ It is intended to be a living, dynamic document that will be modified over time to respond to changing conditions and direction from the Public Utilities Board (PUB) that governs AMP. The IRP evaluates future resource procurement for three periods:

- **Short-Term Procurement:** to meet near-term load growth and any unexpected generation shortfalls;
- **Transition Period:** as resource contracts expire, short-term and/or long-term procurement may be used;
- **Long-Term Procurement:** to replace expiring contracts and meet any sustained load growth.

Among the objectives of the IRP is procuring a diverse set of reliable clean energy resources to minimize risk exposure. Implementation of the IRP is a key component to meeting the City's greenhouse gas reduction goals established in its *Climate Action and Resiliency Plan*. The IRP notes that projected future residential and commercial growth in Alameda is one of the more important drivers of AMP's resource planning. In the short term, growth projections include over 2,000 new residential customers over the next five years, as well as significant commercial growth at Alameda Point, Harbor Bay Business Park, and other coastal areas. The IRP also anticipates increased demand due to growth in ownership of electric vehicles and from switching from natural gas to electricity for heating new and retrofitted buildings. Peak demand in the AMP service area is forecast to grow from 62 megawatts (MW) in 2021 to 80 MW by 2045.

Although most of Alameda's electricity comes from off-island sources, AMP has partial ownership in a NCPA combustion turbine located on Alameda Island that runs on natural gas. This unit currently provides increased reliability in local power, such as during an interruption of electric transmission to the island, but it is used intermittently, typically for only a few hours at a time. It is an aging unit that is expected to be removed from the AMP power portfolio by 2030, but it comprises just 1 percent of AMP's power capacity.

²⁸ Alameda Municipal Power, Power Content Label, Accessed December 28, 2020 at: <https://www.alamedamp.com/336/Power-Content-Label>.

²⁹ Alameda Municipal Power, Energy Resources Planning Division, *25-Year Integrated Resource Plan (IRP)*, July 9, 2020.

Based on current projections, AMP currently has enough capacity to meet its load through 2025 with some additional short-term clean purchases to balance short-term variations in load and resources. Beyond 2025, projected load begins to surpass available resources as AMP's long-term power purchase agreements (PPAs) begin to expire. The IRP projects that AMP will require approximately 175,000 megawatt-hours (MWh) by 2030, or 45 percent of projected load, and 16 MW of additional carbon-free resource capacity. AMP's resource need will continue to vary by season and time of day, but it generally ranges from an average low of 15 MW during the early morning summer hours to an average high of 43 MW in the evening during peak winter season.

Due to the intermittent nature of many clean energy resources, maintaining the balance of supply and demand can be challenging and will require a diverse portfolio of resources to ensure AMP's sustainability goals are met. The strategy includes baseload resources used to meet some or all of the City's continuous energy demand, which currently come from geothermal and landfill gas generation; winter-only resources to meet peak demand, which currently come from geothermal sources; and intermittent renewable resources, including wind, solar photovoltaic (PV), and solar PV with battery storage. Distributed energy resources (DERs), such as local solar PV and storage batteries, are expected to meet an increasing share of energy demand. The IRP projects solar PV installations at customer locations to increase from an installed solar capacity of 0.3 MW and a load of 0.5 gigawatt-hours (GWh) in 2020 to a capacity of 8.5 MW and load of 13.7 GWh by 2040.

One DER AMP expects to add to its portfolio is a 2-MW solar PV facility on top of Doolittle Landfill on Bay Farm Island. Environmental review of this project was recently completed, and the Planning Commission approved a Use Permit for the facility in November 2020.

AMP provides a variety of incentives to its customers to increase use of DERs, including rebates for purchase of electric vehicles (EVs) and commercial purchase or lease of electric forklifts; providing free, fast, direct current (DC) EV chargers at the AMP Service Center; rebates for installation of EV charging stations in homes and multi-family apartments/condominiums; and promoting increased EV awareness through a variety of programs and public workshops.

The IRP concludes that AMP will have a significant need for new electricity resources by 2030, primarily due to the expiration of PPAs, which will occur from 2024 to 2030. To meet this need and the increased demand from residential and commercial growth in Alameda, the utility will be looking to either renew the PPAs and/or add new resources to the portfolio. AMP will also be seeking new resources for renewable energy sources with NCPA.

NATURAL GAS

Natural gas service is provided in Alameda by Pacific Gas & Electric Company (PG&E), which provides service throughout central and northern California in a service area encompassing approximately 70,000 square miles. The company services 5.4 million electric customer accounts and 4.3 million gas customer accounts, delivering energy across 106,681 circuit miles of electric distribution lines, 18,466 circuit miles of interconnected transmission lines, 42,141 miles of natural

gas distribution pipelines, and 6.438 miles of gas transmission pipelines.³⁰ PG&E provides 970 billion cubic feet of natural gas to its customers each year, representing 27 percent of the company's power mix.³¹ In 2019, PG&E delivered 4.971 billion therms of natural gas to its customers.³²

According to the biannual California Gas Report prepared by California's gas and electric utilities in accordance with California Public Utilities Commission (CPUC) requirements, total natural gas demand in California is projected to decline at an average rate of 1 percent each year through 2035, while residential demand is expected to decrease at an average rate of 1.7 percent each year and commercial demand is expected to decline at an average rate of 1.5 percent each year over the same time period. During average temperature and hydroelectric generation conditions, Statewide gas demand is projected to drop from an average of 5,205 million cubic feet of gas per day (MMcf/d) in 2020 to 4,343 MMcf/d by 2035.³³ Demand for natural gas is declining in response to the Statewide efforts to reduce GHG emissions, which is driving the development of electric generation sources that produce few or no carbon emissions, leading to a reduction in gas-fired generation. Aggressive energy efficiency programs are also a factor driving reduced gas demand.

The *2020 California Gas Report* identifies projects undertaken by the natural gas industry over the past five years to improve the safety, accessibility, and reliability of the natural gas supply. The State's gas supplies are derived from the following sources:

- onshore and offshore wells in California;
- Southwestern U.S. (Permian, Anadarko, and San Juan basins);
- Rocky Mountains; and
- Canada.

Natural gas is conveyed to California utilities in a variety of interstate pipelines.

TELECOMMUNICATIONS

A variety of competitive telecommunications companies provide services to Alameda residents, including cellular phone service, internet, television, security systems, and internet-based phone service. Companies providing services in Alameda include Sprint, T-Mobile, Verizon, Xfinity, AT&T, EarthLink, Viasat, Sonic, DirectTV, Dish, Etheric Networks, HughesNet, Covalt Communications, Comcast, Suntech, Allred Communications, and more. Most telecommunications companies expand their cable networks and equipment in response to growth in demand.

³⁰ Pacific Gas & Electric Company, Company Profile, Accessed December 28, 2020 at: https://www.pge.com/en_US/about-pge/company-information/profile/profile.page.

³¹ Pacific Gas & Electric Company, Discover the Basics of Our System by the Numbers, Accessed December 28, 2020 at: https://www.pge.com/en_US/safety/how-the-system-works/natural-gas-system-overview/natural-gas-system-overview.page.

³² California Energy Commission, Energy Reports, Gas Consumption by Planning Area, Accessed December 31, 2020 at: <http://www.ecdms.energy.ca.gov/gasbyplan.aspx>.

³³ Southern California Gas Company, Pacific Gas and Electric Company, *et al.*, *2020 California Gas Report*, [undated].

7.3 Standards of Significance

Appendix G of the *CEQA Guidelines* identifies a number of significant environmental impacts related to utilities and service systems. A project may have a significant impact on utilities and service systems if it would include any of the following:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- 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
- Conflict with federal, state, and local management and reduction statutes and regulations related to solid waste.

These standards of significance are adopted for use in this EIR.

7.4 Impacts and Mitigation Measures

The assessment of utilities and service systems impacts identified in this chapter is based on the standards of significance listed in Section 7.3. This section identifies utilities and service systems impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan, including increased demands on utilities generated by population growth facilitated by the General Plan.

The proposed Conservation and Climate Action Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to reduce the community's GHG emissions. Specific policies of the Conservation and Climate Action Element that would reduce impacts to utilities and service systems are listed below (not all supporting actions are included). Many policies from the Conservation and Climate Action Element that are not listed below, as well as policies in the Mobility Element, would generally reduce GHGs and/or shift away from fossil fuels, which would contribute to the overall reduction in demand for energy resources and to a reduction in demand for water use associated with energy production. (Water is a significant component in most sectors of energy production. Researchers at University of Southern California determined that the U.S. energy system uses an estimated 58 trillion gallons of water annually, including 3.5 trillion gallons

of freshwater.)³⁴ There are also policies in the Health and Safety Element, listed below, that would reduce impacts on the City's stormwater drainage system.

Conservation and Climate Action Element

Goal 1: Empower community action, partnership and leadership to address local and global environmental and climatic emergencies.

Policy CC-4 **Net Zero Greenhouse Gas Emissions.** Take actions to make Alameda a net zero GHG community.

Actions:

- **Partnerships.** Continue to partner on greenhouse gas emission reduction and adaptation strategies with other agencies, including, but not limited to, Caltrans, AC Transit, Bay Conservation and Development Commission, Water Emergency Transit Agency, East Bay Regional Park District, Port of Oakland, East Bay Municipal Utility District, Pacific Gas & Electric, and the US Department of Veterans Affairs.
- **Alameda Climate Action and Resiliency Plan Annual Review and Funding Priorities.** Implement and update as necessary Alameda's Climate Action and Resiliency Plan (CARP) to reduce GHG emissions to 50 percent below 2005 levels by 2030 and achieve net zero GHG emissions as soon as possible. Implement adaptation strategies to address sea level and ground water rise, storm surges, inland stormwater system flooding, drought, extreme heat, and unhealthy wildfire smoke..
- **Annual Review.** Annually review and re-evaluate programs, projects, and annual budget for climate action measures and evolving climatic and public health threats, such as groundwater rise, wildfire smoke events, and global pandemics.
- **100% Renewable Energy Goal.** Support powering Alameda with 100% renewable energy by promoting the generation, transmission and use of a range of renewable energy sources such as solar, wind power and waste to meet current and future demand. Support Alameda Municipal Power's efforts to provide power from 100% clean, non-fossil fuel sources to all residential and commercial users in Alameda.
- **On-Island Generation.** Support development of on-island solar power generation and on-island wind power with appropriately sized generation, storage, and microgrid distribution infrastructure to be able to provide power for a range of uses, including essential functions. Permit renewable energy generation facilities by right in zones with compatible uses and remove financial disincentives associated with the installation of clean energy generation and storage equipment.

³⁴ USC News, "The U.S. Energy System Uses a Lot of Water – But Exactly How Much?" Accessed January 7, 2021 at: <https://news.usc.edu/148541/energy-consumption-requires-a-lot-of-water-but-just-how-much/>.

- **Local Climate Impact Mitigations.** Require any carbon neutral goals and initiatives to reduce or sequester greenhouse gas emissions locally and not use taxpayer money to purchase carbon credits from outside the City of Alameda.

Policy CC-5 Clean Energy Infrastructure. Actively support and advocate for improvements to the regional and local electric power infrastructure to reduce its vulnerability to high winds and other climatic conditions.

Action:

- **Undergrounding Utilities.** Underground utilities to increase resilience of the electric grid, reduce conflicts with street trees and contribute to enhancing neighborhood character.

Goal 2: Reduce the community’s greenhouse gas emissions, which are contributing to global warming, climate change, and environmental and social impacts.

Policy CC-6 Climate-Friendly Vehicles and Equipment. Reduce transportation greenhouse gas emissions by promoting, and when appropriate, requiring the use of low and zero emission vehicles and equipment and taking action to support use of micro-mobility devices to reduce energy use and carbon emissions from personal vehicles.

Actions:

- **EV Charging.** Support the increase in supply of publicly accessible electric vehicle charging stations in Alameda.
- **New Development.** Require electric vehicle charging stations in all new development.
- **Permitting.** Streamline local permitting for hydrogen fueling and electric vehicle charging infrastructure.
- **City Fleet Vehicles.** Replace public fleet vehicles with zero emission vehicles.
- **Buses.** Encourage AC Transit to continue its efforts to replace diesel buses with clean zero emission buses.
- **Ferries.** Encourage WETA to replace diesel ferries with low or zero emission ferries.
- **EV Action Plan.** Prepare and adopt an Electric Vehicle Adoption Plan that provides a path forward for increased EV adoption in Alameda, including:
 - Bolstering charging infrastructure availability,
 - Driving community awareness,
 - Facilitating EV adoption, and
 - Supporting EV services and innovation.

Policy CC-13 Alameda’s Building Stock. Reduce greenhouse gas emissions from natural gas combustion and natural gas leaks.

Actions:

- **Construction Regulations.** Prepare and adopt citywide regulations limiting use of natural gas and encouraging the use of clean energy electricity.
- **New Construction Reach Codes.** Adopt reach codes that ban the use of fossil-fuels in all new buildings constructed in Alameda.
- **Renovation to Clean Energy.** Develop regulations and incentives to facilitate the conversion of existing buildings with natural gas infrastructure to clean energy alternatives.
- **Development on City Land.** Limit the use and expansion of natural gas infrastructure on city land to the extent feasible and practicable.
- **Rebate Programs.** Support programs that encourage homeowners/commercial building owners to implement electrification retrofits, with an emphasis on Alameda's most vulnerable residents.
- **Partners.** Partner with PG&E and other utility companies to plan for the safe transition from natural gas to clean energy alternatives, including removal of infrastructure that pose hazards when not in use.

Policy CC-14 Energy Efficiency and Conservation. Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment.

Actions:

- **Weatherization and Energy Efficient Building Renovations.** Streamline permitting requirements for energy-efficient building renovations.
- **Public Facilities.** Incorporate renewable energy and energy efficiency into public facilities capital improvements.
- **Low Carbon Materials.** Require or promote low-carbon building materials where available.
- **Energy Audits.** Consider requirements for energy audits or updates at major renovation or time of sale.
- **Incentives.** Incentivize use of the Living Community Challenge, LEED for Neighborhood Development, or similar third-party certification system to certify climate friendly construction.
- **Solar Panels.** Encourage installation of solar panels and energy storage equipment in new development.
- **Low Carbon Materials.** Seek low-carbon alternatives to conventional construction materials.

Policy CC-15 Neighborhood Resilience Coordination. Consider piloting building electrification, water conservation and other climate initiatives at a block or neighborhood level to more cost effectively transition to climate friendly energy, water, and resource use similar to the EcoBlocks model in Oakland.

Policy CC-16 Water Efficiency and Conservation. Minimize water use in new construction and landscaped areas to make Alameda more resilient to drought and generate less wastewater.

Actions:

- **Water Efficient Landscape Requirements.** Maintain up-to-date water-efficient landscaping regulations and ordinances to reduce water use in both private and public landscapes.
- **Bay-Friendly Landscapes.** Require new developments to include native plant species, and non-invasive drought tolerant/low water use plants in landscaping.
- **Water-Efficient Buildings.** Require low-flow fixtures, such as low-flow toilets and faucets in new construction.
- **Recycled and Reclaimed Water.** Coordinate the production and usage of recycled and reclaimed water for potable and non-potable uses.

Policy CC-17 Zero Waste Culture. Create a zero waste culture by implementing the City of Alameda’s 2018 Zero Waste Implementation Plan.

Actions:

- **Zero Waste Awareness.** Promote a zero waste culture by developing programs and campaigns that recognize the shared responsibility for each individual to reduce and divert waste from landfill disposal.
- **Single-Use Plastics.** Work toward eliminating single-use plastic products. Promote and require compostable, recyclable and/or reusable products.
- **Technical Assistance.** Provide targeted technical assistance for commercial and multi-family waste generators, which have the greatest opportunity to reduce waste sent to landfill.
- **Food Recovery.** Work with waste management partners to create a food recovery program and enhance organics management to reduce organic material disposal in landfills and reduce greenhouse gas emissions.
- **Salvageable Materials.** Update the City’s construction and demolition debris recycling ordinance to include specific incentives or requirements for deconstruction (rather than demolition) of existing buildings to salvage usable building components (lumber, doors, fireplaces, brick) on homes of a certain age.
- **CAL Green.** Implement CALGreen building code requirements to divert and recycle construction and demolition waste, and to use locally-sourced building materials and recycled content building materials, including mulch/compost.
- **Franchise Agreements.** Expand the high diversion franchise agreement with waste management partner(s) related to recycling, organics and construction and demolition waste to further support Alameda in reaching its zero waste goal.

Policy CC-18 Building Renovation and Reuse. To reduce construction waste and GHG emissions associated with construction material manufacture and transportation, encourage and facilitate renovation and rehabilitation of existing buildings instead of demolition and new construction.

Policy CC-22 Critical Public Assets. Implement improvements to move or protect critical public assets threatened by sea-level rise or rising groundwater.

Actions:

- **Storm Water.** *Identify funding sources to improve the public stormwater infrastructure and ensure it meets current needs and is prepared for the effects of sea level rise and climate change.*

Policy CC-32 Lagoons. Continue to preserve and maintain all lagoons as natural habitat as well as an integral component of the City's green infrastructure network and flood control system.

Policy CC-33 Green Infrastructure. Protect San Francisco Bay, San Leandro Bay, and the Alameda Oakland Estuary by promoting, requiring, and constructing green infrastructure that improves stormwater runoff quality, minimizes stormwater impacts on stormwater infrastructure, improves flood management, and increases groundwater recharge.

Actions:

- **Green Streets and Infrastructure Plan.** *Implement Alameda's Green Infrastructure Plan, the purpose of which is to guide the identification, implementation, tracking, and reporting of green infrastructure projects within the City.*
- **Capital Improvement Program (CIP).** *Include green infrastructure design elements in the initial design stages of all public CIP project planning efforts. Implement Green Stormwater Infrastructure (GI) design standards, guidance, and typical details, as presented in the City's GI Plan, as feasible and appropriate, for public CIPs, Complete Streets street design processes, and the infrastructure management of stormwater.*
- **Open Space.** *Utilize and maintain the lagoon systems, public open spaces, wildlife habitat, and other natural areas as integral components of the citywide green infrastructure network.*
- **Storm Water Runoff.** *Promote the reduction of stormwater runoff into the Bay with the use of pervious materials, retention basins, bioswales and similar methods.*
- **Alameda Countywide Clean Water Program.** *Continue to remain an active member agency of the Alameda Countywide Clean Water Program (ACCWP) working to control the discharge of pollutants from urban runoff to ensure continued improvement of San Francisco Bay water quality, water quality monitoring, public education, pollution prevention oversight, regional coordination, and the development of technical guidance and pollution prevention tools.*

- **Municipal Stormwater Permit.** Continue to comply with the requirements of the Municipal Regional Stormwater NPDES Permit (MRP), issued to the City by the California Regional Water Quality Control Board and the San Francisco Bay Region (Regional Water Board), to guide the City's efforts to prevent pollutant discharges and to protect Bay water quality.

Health and Safety Element

Policy HS-17 Public Infrastructure Priorities. Identify public transportation, open space, and stormwater and wastewater facilities, shoreline assets, and other public assets vulnerable to sea level rise and groundwater rise and flooding hazards, and prioritize projects for adaptation funding.

Action:

- **Shoreline Facilities Program.** Implement a program for Resilient Shoreline Facilities, including performing appropriate seismic, storm, flooding and other safety analyses based on current and future use for all City-owned shoreline facilities, including dikes, shore protection (rip rap), lagoon sea walls, stormwater outfalls, marinas and protective marshlands.

Policy HS-18 Preferred Strategies. Develop sea level and groundwater rise adaptive strategies for different areas of the City for public discussion and evaluation, including but not limited to: avoidance/planned retreat, enhanced levees, setback levees to accommodate habitat transition zones, buffer zones, beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood-proofing structures, and/or provisions for additional floodwater pumping stations, and inland detention basins to reduce peak discharges.

Action:

- Develop for public discussion and evaluation potential financing strategies and partnership opportunities with regional and state agencies such as the Municipal Oakland International Airport, and other agencies to fund and build selected adaptive strategies.

Policy HS-19 Public Infrastructure. Protect and upgrade public infrastructure, including but not limited to streets, wastewater systems and pump stations, stormwater systems and pump stations and electric systems and facilities to ensure capacity and resilience during storm events, high tides, and groundwater and sea level rise, to decrease the chance of flooding of nearby streets, utilities, and private property.

Policy HS-21 Resilient Rights-of-Way and Open Space. Design street rights-of-way, parks, other public spaces, street trees and landscaping to be resilient to temporary flooding.

Policy HS-22 New Development. Require new development to design for sea level and associated ground water rise based upon the most current regional projections.

Action:

- **Waterfront Setbacks.** Require new development to provide adequate setbacks along waterfront areas for the future expansion of seawalls and levees to adapt to sea level rise.

- Policy HS-23 Easements.** Require the creation and maintenance of easements along drainage ways necessary for adequate drainage of normal or increased surface runoff due to storms.
- Policy HS-24 Groundwater Management.** Require and enforce stringent groundwater management programs to prevent subsidence.
- Policy HS-25 Green Infrastructure.** Require the use of “green Infrastructure,” landscaping, pervious surfaces, green roofs, and on-site stormwater retention facilities to reduce surface runoff and storm drain flooding during storm events.

IMPACTS

Impact 7-1

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental impacts. (LTS)

Water

Water main extensions may be required to serve new development facilitated by the proposed General Plan, particularly in Alameda Point. EBMUD will require project sponsors of new development to fund main extensions, pipeline and fire hydrant relocations and replacements, and off-site pipeline improvements that are required to serve the proposed development. Project applicants will be required to submit a request for water service to EBMUD's New Business Office, along with soil and groundwater quality data for the project site and any offsite locations where excavation for new water infrastructure will be required. If no soil or groundwater quality data exists, or the information supplied by the project sponsor is insufficient, EBMUD may require the project sponsor to perform sampling and analysis to characterize the soil and groundwater that may be encountered during excavation, or EBMUD may perform such sampling and analysis at the project sponsor's expense. If any remediation of soil or groundwater is required, that work will need to be completed before new water infrastructure is constructed. During project development, if evidence of contamination is discovered during EBMUD work on the project site, work may be suspended until such contamination is adequately characterized and remediated to EBMUD standards.

EBMUD requires a minimum 20-foot-wide right-of-way for installation of new and replacement water mains. Additional utilities installed in the right-of-way with the water mains must be located such that the new water mains meet the minimum horizontal and vertical separation distances as set forth in the California (Waterworks Standards) Code of Regulations, Title 22, Section 64572 (Water Main Separation) and EBMUD requirements for placement of water mains within a right-of-way. The minimum horizontal separation distance requirements include, but are not limited to, 10 feet between the water main and sewer, 5 feet between the water main and storm drain, 7 feet

from the face of the curb, and 5 feet from the edge of the right-of-way. In addition, water mains must be vertically located a minimum of one foot above sewers and storm drains.

Individual development projects will be subject to separate environmental review that will address potential environmental impacts that could result from the construction of new water main extensions or other water service infrastructure that may be required to provide domestic water service to the proposed development. Other than these currently unknown potential impacts, no new water supply infrastructure would be required to serve the future residential, commercial, and industrial development that could occur under the *Alameda General Plan 2040*. The project would have a ***less-than-significant impact*** on water facilities.

Wastewater

Alameda's wastewater is treated at EBMUD's WWTP located near the eastern terminus of the San Francisco-Oakland Bay Bridge. The WWTP has primary treatment capacity of 320 MGD and secondary treatment capacity of 168 MGD. On average, about 63 million gallons of wastewater is treated every day, demonstrating that there is currently significant excess capacity. Based on the EPA's estimate that nationwide per-capita wastewater generation is 70 gallons per day,³⁵ it can be estimated that Alameda's current population of 81,312 people, as reported by the California Department of Finance, generates 5,691,840 gallons of wastewater per day, or 5.691 MGD. EBMUD reports that its wastewater system serves approximately 685,000 people;³⁶ Alameda residents thus comprise about 11.9 percent of EBMUD's wastewater customers. Projected buildout under the *Alameda General Plan 2040* would add approximately 25,000 new residents to the City, which would increase wastewater generation citywide to about 7.441 MGD, which would represent an increase of about 11.8 percent in EBMUD's current wastewater throughput. The net increase would represent just 0.5 percent of the WWTP's primary treatment capacity and about 1 percent of its secondary treatment capacity.

The rest of EBMUD's wastewater treatment service area includes the cities of Albany, Berkeley, El Cerrito, Emeryville, Kensington, Oakland, Piedmont, and part of Richmond. Conservatively assuming that all of Richmond's population is included, EBMUD's wastewater treatment service area is projected to grow to 1,021,505 persons by 2040.³⁷ Even accounting for growth in the rest of EBMUD's service area, total wastewater demand in 2040 would be approximately 78.95 MGD, which is an over-estimate because wastewater from all of the City of Richmond is included. Thus, without expanding capacity, EBMUD is expected to have more than enough excess wastewater treatment capacity to accommodate the growth in demand that would result from implementation of the proposed General Plan. This conclusion was confirmed by EBMUD in the NOP response letter

³⁵ U.S. Environmental Protection Agency, Office of Water, Office of Research and Development, *Onsite Wastewater Treatment Systems Manual*, EPA/625/R-00/008, February 2002.

³⁶ East Bay Municipal Utility District, Wastewater Collection and Treatment, Accessed January 8, 2021 at: <https://www.ebmud.com/wastewater/collection-treatment/>.

³⁷ Association of Bay Area Governments, *Plan Bay Area Projections 2040: A Companion to Plan Bay Area 2040*, Data Tables for Alameda County and Contra Costa County, November 2018.

it submitted to the City.³⁸ The project would therefore have a ***less-than-significant impact*** on wastewater treatment capacity.

Stormwater

The City's *Storm Drain Master Plan* identifies stormwater infrastructure improvements necessary to address drainage problem areas and ensure adequate storm drainage capacity for the City, including for future development that could be constructed consistent with the *Alameda General Plan 2040*. The City has been implementing the priority projects identified in the SDMP and will continue to do so in the future. Individual development projects would be required to demonstrate adequate capacity in the storm drain network that would serve the projects, and could be required to install higher capacity and/or replacement storm drains, which would be subject to separate environmental review pursuant to CEQA.

New development at Alameda Point, the former Naval Air Station (NAS) Alameda, would require construction of a new stormwater system that would be owned and operated by the City. The stormwater system would include new pipelines, pump stations, multi-purpose basins, and outfalls with water quality treatment features that are designed to meet current City, County of Alameda and San Francisco Bay RWQCB design criteria. Within the Development Area of Alameda Point, an entirely new stormwater system that consists of gravity storm drain pipes ranging in size from 12 to 60 inches in diameter and 5 new outfalls would be constructed at existing outfall locations. Within the Reuse Area—which overlaps with the NAS Alameda Historic District at Alameda Point, where existing development will be adaptively reused—new trunk stormwater lines, multi-purpose basins, pump stations, and outfalls would be installed incrementally over time within the various sub-Districts in accordance with a previously adopted Master Infrastructure Plan (MIP) for Alameda Point. While construction of the new stormwater system could result in potentially significant environmental effects, these effects were previously disclosed in the *Alameda Point Project Draft Environmental Impact Report* (SCH No. 2013012043), certified by the City on February 5, 2014.

Construction activities of the new and expanded storm drainage facilities would include in-street trenching and excavation work. Such activities would be phased as development occurs. In order to comply with the requirements of the RWQCB concerning discharges of stormwater during project construction, the future project applicant would be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for construction activities and execute a Stormwater Pollution Prevention Plan (SWPPP) that would specify construction stormwater quality management practices based on the Alameda County Clean Water Program (ACCWP) Stormwater Quality Management Plan. The SWPPP would describe erosion control measures similar to those recommended by the ACCWP which are designed to reduce the potential for pollutants to contact stormwater and eliminate or reduce discharge of materials to stormwater during on-land construction.

³⁸ David J. Rehnstrom, Manager of Water Distribution Planning, East Bay Municipal Utility District, re: Notice of Preparation of an Environmental Impact Report – Alameda General Plan 2040, Alameda [letter], August 27, 2020.

In-water construction activities for the proposed outfalls would include removal and disposal of potentially contaminated sediment, which could result in turbidity and other adverse water quality effects within the Inner Harbor and the Bay. In-water construction activities would be required to adhere to Sections 401 and 404 of the Clean Water Act and the future project applicant would also be required to obtain necessary permits and approvals from the U.S. Army Corps of Engineers, RWQCB, and San Francisco Bay Conservation and Development Commission (BCDC). Additionally, excavation for installation of utilities (including storm water drainage facilities) would entail soil disturbance that could disperse and expose workers, the public, or the environment to contamination. Any temporary dewatering activities for utilities construction could also encounter contamination which may require treatment prior to discharge. Mitigation measures to address these impacts were previously adopted upon certification of the Alameda Point EIR, and will be enforced as applicable when specific development projects are proposed at Alameda Point.

The following proposed General Plan policies would reduce impacts related to stormwater drainage: CC-22, HS-17, HS-18, HS-19, HS-23, and HS-25. Aside from already programmed improvements in the SDMP and improvements at Alameda Point described above, no major stormwater infrastructure would be required to accommodate the growth in demand that would result from implementation of the proposed General Plan. The project would have a ***less-than-significant impact*** on stormwater facilities.

Electric Power

Future residential, commercial, and industrial growth in Alameda will drive increased demand for electric power. Because the generation of electric power results in a significant portion of Alameda's greenhouse gas (GHG) footprint, the City's recently-adopted *Climate Action and Resiliency Plan* includes actions to reduce electrical demand, including encouraging use of energy-efficient appliances and requiring at least 10 percent of roof areas on new development in Alameda Point to be green roofs. However, the CARP also includes actions to shift energy use in buildings from natural gas to electricity and to increase electric vehicle ownership, both of which will result in additional increased electrical demand.

Alameda Municipal Power's Integrated Resource Plan completed in July 2020 incorporates the CARP's electrification goals into its long-range load forecasting. The IRP also takes into consideration the effects of California's increasing annual wildfire risk on regulatory requirements pertaining to the production and purchase of energy resources. The IRP identifies a strategy for procuring short- and long-term clean energy purchases to meet existing and future electrical demand during the 2021-2045 planning period. Peak demand in the AMP service area is forecast to grown from 62 MW in 2021 to 80 MW by 2045. The IRP is a dynamic document that will be modified over time to respond to changes in demand and in the availability of renewable energy resources.

In addition to working to procure new sources of clean power, AMP intends to construct new clean energy infrastructure within the City to help meet Alameda's growing power needs. A 2-MW solar farm is planned for the former Doolittle Landfill site on Bay Farm Island that will require new substations, transformers, and extension of transmission line. Inverters and transformers would be

mounted on pre-cast concrete pads at grade. All solar equipment, including arrays of 7,500 photovoltaic solar panels, would be installed at or above grade, with no ground penetrations. At the end of the useful life of the solar facility (i.e., up to 25 years), the solar facility will be dismantled, and the City intends to convert the site to a public park, as shown on the Land Use Diagram of the proposed General Plan (see Figure 2). The environmental impacts from construction and operation of this facility were previously evaluated in an Initial Study/Mitigated Negative Declaration, so potential impacts of the project have been previously disclosed and no further analysis is required in this EIR.³⁹

Because the City is fairly built out, there won't be a need for substantial expansion or improvement to the City's electric power distribution system in the future, other than the solar project referenced above. New development would be accommodated with just minor improvements to build out underground infrastructure, such as manholes and transformers. The most substantial anticipated improvement is a transformer that may be added to a substation near Main Street.⁴⁰

As discussed in Section 7.2, new development facilitated by the proposed General Plan would be required to comply with the CALGreen Code, which includes numerous requirements intended to increase energy efficiency both by the consumer and in building heating and cooling. Additionally, proposed General Plan Policy CC-4 would reduce demand for gas- and coal-fired electric power generation by AMP continuing to procure 100-percent renewable energy sources, proceeding with the development of the on-island solar power facility, and encouraging development of an on-island wind power facility and other renewable energy generation facilities. Similar to the solar facility, any future development of such facilities will be subject to separate environmental review pursuant to CEQA. With no concrete proposals before the City now, it would be speculative to identify and evaluate potential environmental effects that could result from the implementation of currently unknown energy facilities. Based on the above assessment, the proposed General Plan would have a ***less-than-significant impact*** on electric power facilities.

Natural Gas

As discussed in Section 7.2, total natural gas demand in California is projected to decline at an average rate of 1 percent each year through 2035, while residential demand is expected to decrease at an average rate of 1.7 percent each year and commercial demand is expected to decline at an average rate of 1.5 percent each year over the same time period. During average temperature and hydroelectric generation conditions, Statewide gas demand is projected to drop from an average of 5,205 million cubic feet of gas per day (MMcf/d) in 2020 to 4,343 MMcf/d by 2035. Implementation of the *Alameda General Plan 2040* will contribute to this reduction in demand through implementation of Policy CC-4, promoting the shift to 100-percent clean energy in Alameda; Policy CC-5, supporting development of local infrastructure for clean energy; Policy CC-13, calling

³⁹ City of Alameda Planning, Building and Transportation Department, *Initial Study and Mitigated Negative Declaration: Alameda Municipal Power Solar Project, Alameda Doolittle Landfill Site, Project No. PLN19-0601*, January 2020.

⁴⁰ Andre Basler, Assistant General Manager, Engineering and Operations, Alameda Municipal Power, personal communication, January 5, 2021.

for a reduction in natural gas consumption in buildings; and Policy CC-14, promoting energy conservation in new buildings.

There is adequate natural gas infrastructure to serve new development facilitated by the proposed General Plan, while the policies cited above will contribute to a substantial Citywide reduction in demand for natural gas. Therefore, the proposed General Plan would have a ***less-than-significant impact*** on natural gas facilities.

Telecommunications Facilities

Most telecommunications companies expand their cable networks and equipment in response to growth in demand. There is a multiplicity of different telecommunications companies serving the residents and businesses in Alameda. To meet growing future demand, some of these companies may expand their infrastructure, but this infrastructure generally consists of computer servers, wires, cables, optical fiber, switching equipment, transformers, microwaves, satellites, towers, poles, networking hardware, and other similar equipment, and installation of these types of equipment would not have significant impacts on the environment. Infrastructure such as towers for mounting cellular and other equipment is typically shared among telecommunications companies, minimizing the need for duplicative construction. Expansion of telecommunications facilities to accommodate future growth in Alameda consistent with the proposed General Plan is likely to be limited to new equipment in existing buildings, on existing towers and poles, and within existing utility trenches. In the event a company decides to implement more substantial expansion of its facilities, such as by erecting a new cellular tower or constructing a new building, such a project would be subject to separate environmental review. Therefore, the proposed General Plan would have a ***less-than-significant impact*** on telecommunications facilities.

Mitigation Measure 7-1

None required.

Impact 7-2

There would be sufficient water supplies available to serve future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* during normal, dry and multiple dry years. (LTS)

Construction of new residential, commercial, office, light industrial, and other development projects allowed under the proposed General Plan is projected to increase the population of Alameda by approximately 25,000 residents and add up to 14,000 new jobs in the City by 2040. The increased residential and commercial development driving this growth would generate increased demand for potable water that would be supplied by EBMUD. Based on EBMUD's baseline per-capita water consumption of 161 gpd, the additional residents could increase the City's water demand by 4,025,000 gpd.

In its long-range water supply planning, EBMUD bases water demand projections on Land-Use Unit Demands (LUDs) that are levels of per-acre water demand, based on the type of land use. The LUDs are based on seven different categories of residential uses (single-family home, townhome, apartment unit, etc.), four mixed-use categories, and 12 non-residential categories. Based on 2005 consumption data, the LUDs are then adjusted for historical weather effects (e.g., drought), non-weather effects (e.g., economic conditions), and other factors to produce “normalized” demand rates. As discussed in more detail in Section 7.2, EBMUD prepared demand projections in five-year intervals through 2040 in its most recent Urban Water Management Plan.

The UWMP determined that EBMUD would have sufficient water supplies to meet customer demand through 2040 during normal years and up to two dry years of a multi-year drought, but would need supplemental water supplies to meet projected demand during a third dry year after 2020. During a third year of drought there would be shortfalls of 2 TAF in 2025, 13 TAF in 2030, 24 TAF in 2035, and 48 TAF in 2040. The water demand projections in the UWMP factor in anticipated growth in the region, based on consultation with all of the planning agencies within EBMUD’s service area.

During multi-year droughts when demand could exceed supply by up to 10 percent, EBMUD would rely on local and off-site groundwater storage to make up the shortfall. The Semitropic Groundwater Bank would be recharged during normal rainfall years to provide additional supply during dry years. If there were insufficient local groundwater storage or the District was unable to recover its full contractual amount from the Semitropic Groundwater Banking Program, the District would look to secure additional supplies through a California Department of Water Resources (DWR) drought water bank or similar water purchase/transfer program. Water shortages during prolonged droughts or due to short-term emergencies would also be addressed through implementation of EBMUD’s Water Shortage Contingency Plan.

The proposed General Plan is a broad policy document and this EIR provides a programmatic assessment of environmental effects that could occur from implementation of the General Plan over the next 20 years. As such, it does not analyze specific developments that could be proposed consistent with the General Plan that would trigger the need for a Water Supply Assessment. Among other thresholds, a project is required to prepare a WSA if it would: (1) be a business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space, or (2) demand an amount of water equal to, or greater than, the amount of water needed to serve a 500-dwelling unit residential project. If projects are proposed in the future that exceed these thresholds, they would be required to have EBMUD prepare a WSA to demonstrate adequate water supply to serve the project as part of the project-specific environmental review.

While it cannot be definitively determined in 2021 that there will be sufficient water supply to meet all existing and future demand in 2040, including growth facilitated by the proposed General Plan, EBMUD conducts ongoing water supply planning to ensure it can continue supplying domestic water to its customers even during periods of extended drought. Every ten years EBMUD conducts a comprehensive analysis of future water demand forecasts where the planning horizon is extended out an additional 10 years from the most recent prior forecasts. Every five years following a

comprehensive analysis, EBMUD completes a Mid-Cycle Update to adjust forecasts, if needed, for known significant development changes. The last completed Demand Study forecasts water demand to the year 2050.⁴¹

The District's *Water Supply Master Plan 2040* identifies strategies to ensure adequate water supplies while minimizing impacts on EBMUD customers during dry years. The WSMP 2040 places a strong emphasis on increased conservation and recycling to reduce customer demand, anticipating that 50 MGD of future supply will be provided by these components. The plan also includes a variety of supplemental supply options that could be explored in the future, including water transfers, groundwater storage, desalination, and regional surface storage. These components are estimated to provide another 82 MGD of additional water supply.

EBMUD's most recent Urban Water Management Plan concludes that the District has, and will have, adequate water supplies to serve existing and projected demands within the Ultimate Service Boundary during normal and wet years but that deficits are projected for drought years. During multi-year droughts, the District may require significant customer water use reductions and may also need to acquire supplemental supplies to meet customer demand. The 2015 UWMP includes Drought Management Program (DMP) Guidelines that establish the level of water use restrictions the District may implement under varying conditions. Under the DMP Guidelines, water use restrictions may be determined based upon either projected end-of-September Total System Storage (TSS) or water use restriction mandates from the State Water Resources Control Board. When State-mandated water use restrictions exceed the reductions that would otherwise be called for based upon the end-of-September TSS, the District's water use reduction requirements may be guided by the applicable State mandates. Under either scenario, while the District strives to keep water use reductions at or below 15 percent, if the drought is severe, mandatory water use reductions could exceed 15 percent.⁴²

Alameda's water demand would be reduced by General Plan Policy CC-16, which encourages water efficiency and conservation. As discussed above, EBMUD's water planning factors in projected growth in Alameda and the other cities it serves, and continues to adjust its water demand forecasts in response to changing conditions. As also noted above, large development projects that could be proposed consistent with the General Plan would be required to demonstrate adequate water supply for the project via a WSA conducted by EBMUD. Based on all of these considerations, the proposed General Plan would therefore have a ***less-than-significant impact*** on water supply.

Mitigation Measure 7-2

None required.

⁴¹ Bill Maggiore, East Bay Municipal Utility District, personal communication, January 8, 2021.

⁴² *Ibid.*

Impact 7-3

Future residential, commercial, and industrial development allowed under the *Alameda General Plan 2040* would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (LTS)

EBMUD's Main Wastewater Treatment Plant treats an average of about 63 million gallons of wastewater per day. With a service population of approximately 685,000 people, this is equivalent to a per-capita wastewater generation rate of roughly 92 gpd. Because this rate is based on the total daily flow at the WWTP, this generation factor includes wastewater generated by commercial and industrial uses. Applying this wastewater generation rate to Alameda's current population of approximately 79,000 residents, Alameda is estimated to generate 7,268,000 gallons of wastewater per day, citywide, representing about 11.5 percent of the daily flow at the WWTP. Buildout under the proposed General Plan could increase Alameda's population by 25,000 people by 2040, which would add another 2,300,000 gpd of wastewater flow. The increased flow would represent about 3.6 percent of the current daily flow at the WWTP, which has secondary treatment capacity of 168 million gallons per day (MGD) and primary treatment capacity of 320 MGD. The WWTP currently has excess secondary treatment capacity of 105 MGD and excess primary treatment capacity of 257 MGD. The additional 2.3 MGD of flow that could result from implementation of the *Alameda General Plan 2040* would thus be about 2.1 percent of the available secondary treatment capacity and about 0.9 percent of the available primary treatment capacity.

EBMUD approved a \$2.5 billion Capital Improvement Program (CIP) for fiscal years 2020 through 2024, including \$184 million in improvements to its wastewater system. The District will continue to make improvements to components of the WWTP such as drains, reactor piping, clarifiers, digesters, grit handling, concrete structures, and building systems to maintain EBMUD's strong record of regulatory compliance. Given the District's ongoing improvements to its wastewater infrastructure and that the WWTP operates at well under half of its permitted capacity, the small incremental increase in the City's wastewater generation that would result from buildout under the proposed General Plan would have a ***less-than-significant impact*** on wastewater treatment capacity.

Mitigation Measure 7-3

None required.

Impact 7-4

The increased population generated by future residential development allowed under the *Alameda General Plan 2040* would not result in generation of 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, and would not conflict with federal, State, or local management and reduction statutes and regulations related to solid waste. (LTS)

In measuring California’s progress in meeting the 75-percent waste diversion goal established by AB 341, CalRecycle now measures waste generation rates on a per-capita basis, expressed as pounds per person per day. Because this rate is based on the total waste disposed, this generation factor includes solid waste generated by commercial and industrial uses. Based on 2017 statewide disposal data, CalRecycle determined that the per-capita waste disposal rate in California is 6.2 pounds per person per day.⁴³ This rate includes “disposal-related” materials which accounted for 6.6 million tons of the State’s 37.8 million tons of waste landfilled in 2017. When the “disposal-related” materials are not included, California had a waste disposal rate of 5.2 pounds per person per day, which is the rate CalRecycle reports in measuring its waste diversion progress.⁴⁴ Applying this rate to Alameda’s current population of approximately 79,000 residents indicates that the City generates 410,000 pounds of solid waste per day. Population growth facilitated by the proposed General Plan would increase this to about 540,800 pounds of solid waste per day by 2040, an increase of about 32 percent.

Waste collected in the City first goes to the Davis Street Transfer Station (DSTS) in San Leandro. This facility currently has a maximum permitted throughput of 5,600 TPD. With a maximum capacity of 9,600 TPD, the increased waste generated in Alameda over the planning period of the *Alameda General Plan 2040* could be readily accommodated at the DSTS without requiring construction of new facilities.⁴⁵ The waste transferred from the DSTS is disposed of at Altamont Landfill, which recently completed a modification to its Solid Waste Facility Permit, updating the estimated closure date of the landfill to 2070. The current daily throughput at Altamont Landfill is approximately 3,600 TPD, about 2,000 TPD under its permitted capacity.⁴⁶ Thus, there is more than sufficient excess capacity at the landfill to accommodate waste generated in Alameda during implementation of the proposed General Plan.

⁴³ CalRecycle, California’s 2017 Per Capita Disposal Rate Estimate, Accessed January 17, 2021 at: <https://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/mostrecent/>.

⁴⁴ CalRecycle, California’s Statewide Per Resident, Per Employee, and total Disposal Since 1989, Accessed January 17, 2021 at: <https://www.calrecycle.ca.gov/LGCentral/GoalMeasure/DisposalRate/Graphs/Disposal/>.

⁴⁵ CalRecycle, Solid Waste Information System (SWIS), SWIS Facility/Site Activity Details, Davis Street Transfer Station (01-AA-0007), Accessed January 19, 2021 at: <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/5?siteID=5>.

⁴⁶ Wing Suen, Senior Registered Environmental Health Specialist, Alameda County Department of Environmental Health, Solid/Medical Waste Management and Body Art Programs, personal communication, January 20, 2021.

Recyclables collected in Alameda are hauled to ACI's Aladdin MRF in San Leandro for sorting and processing for secondary materials markets. With a design capacity of 940 TPD, the functional capacity of the Aladdin MRF is substantially higher than its current permitted capacity of 620 TPD. While ACI does not currently anticipate a need for further expansion, it would pursue additional permitted capacity if the need arose in the future.⁴⁷

The City of Alameda has been and continues to be proactive in reducing its waste generation. Alameda has the most restrictive foodware controls in the region, requiring all take-out utensils and containers to be fully compostable.⁴⁸ Alameda's waste generation will be further reduced by implementation of proposed General Plan Policy CC-19, which calls for the creation of a zero-waste culture. In addition to carrying out the City's Zero Waste Implementation Plan (ZWIP), the supporting actions to Policy CC-19 include updating the City's C&D debris recycling ordinance, creating a food recovery program, and expanding the high-diversion franchise agreement with the City's waste management partner. The City will also be providing targeted technical assistance for commercial and multi-family waste generators, which have the greatest opportunity to reduce waste sent to landfill. The ZWIP includes measures to reduce the City's waste disposal rate to 1.2 pounds per person per day, which is projected to reduce Alameda's annual GHG emissions by 3,416 metric tons of carbon dioxide equivalents by 2030.⁴⁹ The City also ensures that CALGreen building code requirements pertaining to waste reduction are enforced.

Although development facilitated by the proposed General Plan would result in increased generation of solid waste in Alameda, future commercial and multi-family residential projects would be required to recycle all recyclable materials, and residents would be encouraged by the City to participate in recycling, which is also encouraged by ACI, the City's franchised hauling company. Landfill disposal of waste would be further reduced by the City's curbside collection of green and food waste, which is composted. Solid waste disposal would also be reduced by reuse, recycling, or other diversion of C&D debris generated by construction projects, mandated by both CALGreen and the Alameda Municipal Code.

There is adequate waste disposal capacity to accommodate growth facilitated by the proposed General Plan, and new development proposals consistent with the General Plan would be required to comply with applicable statutes and regulations related to solid waste, including the City's C&D debris recycling ordinance and relevant CALGreen requirements. Implementation of the project would not conflict with federal, State, or local management and reduction statutes and regulations related to solid waste; rather, it would enhance compliance with those regulations. Therefore, the proposed *Alameda General Plan 2040* would have a **less-than-significant impact** on solid waste management and regulation.

⁴⁷ Chris Valbusa, ACI, *op cit*.

⁴⁸ Kerry Parker, Program Specialist II, Public Works Department, City of Alameda, personal communication, January 5, 2021.

⁴⁹ City of Alameda, *Alameda Climate Action and Resiliency Plan*, Table 3-3: Alameda's Already Committed to GHG Emissions Reduction Actions, Co-Benefits, and Reductions, September 2019.

Mitigation Measure 7-4

None required.

CUMULATIVE IMPACTS

Water Supply

Increased water demand that would result from growth facilitated by the proposed *Alameda General Plan 2040* would contribute to an increased cumulative demand for domestic water supply in the region as growth occurs in other Bay Area cities and counties. Because EBMUD is a large, regional water supplier, increased water demand in Alameda would primarily have a cumulative impact on water supplies procured by EBMUD for its service area, which includes most of Contra Costa and Alameda counties. As discussed under Impact 7-2, EBMUD regularly conducts long-range water supply planning based on water demand projections that factor in planned and anticipated residential, commercial, and industrial growth in its service area. EBMUD's most recent UWMP determined that EBMUD would have sufficient water supplies to meet customer demand through 2040 during normal years and up to two dry years of a multi-year drought, but would need supplemental water supplies to meet projected demand during a third dry year after 2020. The UWMP details the actions the District would take both to reduce demand and procure additional water supplies during an extended drought, including implementation of its Water Shortage Contingency Plan.

Future new development elsewhere in EBMUD's service area would be subject to separate environmental review, which would include evaluation of potential water supply impacts. When large water-demand projects are proposed, they would be required to commission preparation of a Water Supply Assessment in accordance with SB 610 to demonstrate an adequate water supply to serve the project. All cumulative development throughout the EBMUD service area would be required to comply with the CALGreen Code provisions for water efficiency and conservation, including installation of low-flow plumbing fixtures. While implementation of the proposed General Plan would contribute to the cumulative regional water demand, the growth would not exceed the planned water supply availability and implementation of proposed General Plan Policy CC-18 would further reduce the General Plan's cumulative impact on water supply. Therefore, the proposed General Plan would not have a significant cumulative impact on water supply.

Wastewater Treatment

The EBMUD wastewater service area is smaller than its water supply service area, consisting of just the cities of Alameda, Albany, Berkeley, El Cerrito, Emeryville, Kensington, Oakland, Piedmont, and part of Richmond. Cumulative growth in the EBMUD wastewater service area is not expected to exceed the existing capacity of EBMUD's WWTP. As discussed under Impact 7-1, current wastewater flows at the plant are far below both the primary and secondary treatment capacity. Even factoring in cumulative growth in the other cities in EBMUD's service area, the increased wastewater flow from cumulative development would not exceed the existing capacity of the WWTP, and construction of new wastewater treatment facilities would not be required. Therefore,

the proposed General Plan would not have a significant cumulative impact on wastewater treatment capacity.

Stormwater Facilities

Because Alameda is essentially an island community and all of its stormwater runoff discharges into San Francisco Bay, cumulative impacts on the stormwater collection and discharge system would be confined to Alameda. Therefore, the discussion of stormwater impacts under Impact 7-1 also encompasses the cumulative impact that would result from construction and operation of many development projects allowed under the proposed General Plan. As discussed in Impact 7-1, the City will continue implementing its *Storm Drain Master Plan* and implementation of proposed General Plan policies CC-22, HS-17, HS-18, HS-19, HS-23, and HS-25 would further reduce impacts related to stormwater drainage. Since no major stormwater infrastructure would be required to accommodate the growth in demand that would result from implementation of the proposed General Plan, aside from already programmed improvements, the project (i.e., the *Alameda General Plan 2040*) would have a less-than-significant cumulative impact on stormwater drainage facilities.

Solid Waste Disposal

According to CalRecycle's Solid Waste Information System (SWIS), there are numerous other landfills currently operating in the region that accept solid waste from Bay Area communities, including the following:

- **Vasco Road Landfill** in eastern Alameda County has a daily permitted throughput of 2,518 TPD, and has remaining capacity of 7,379,000 tons.
- **Acme Landfill** in north-central Contra Costa County has a daily permitted throughput of 1,500 TPD, and has remaining capacity of 506,590 tons.
- **Keller Canyon Landfill** in north-central Contra Costa County has a daily permitted throughput of 3,500 TPD, and has remaining capacity of 75,018,280 tons.
- **Redwood Landfill** in northeastern Marin County has a daily permitted throughput of 2,300 TPD, and has remaining capacity of 26,000,000 tons.
- **Potrero Hills Landfill** in south-central Solano County has a daily permitted throughput of 4,330 TPD, and has remaining capacity of 83,100,000 tons.
- **Recology Hay Road Landfill** in central Solano County has a daily permitted throughput of 2,400 TPD, and has remaining capacity of 37,000,000 tons.
- **Clover Flat Resource Recovery Park** in northwestern Napa County has a daily permitted throughput of 600 TPD, and has remaining capacity of 2,560,000 tons.
- **Corinda Los Trancos Landfill (Ox Mountain)** in western San Mateo County has a daily permitted throughput of 3,598 TPD, and has remaining capacity of 60,500,000 tons.

While future growth throughout the Bay Area, including that facilitated by the *Alameda General Plan 2040*, will contribute to cumulative impacts on the regional waste disposal infrastructure, there

is substantial remaining permitted capacity at the region's landfills to accommodate waste generated during the planning horizon of the proposed General Plan. Alameda's contribution to these impacts would be minimized through implementation of its Zero Waste Implementation Plan, General Plan Policy CC-17, and compliance with applicable statutes and regulations related to solid waste, including the City's C&D debris recycling ordinance and relevant CALGreen requirements. Therefore, the City's contribution to impacts on waste disposal capacity would not be cumulatively considerable. The proposed General Plan would not have a significant cumulative impact on waste disposal capacity.

8. PARKS AND RECREATION

8.1 Introduction

This chapter identifies the existing and planned public parks and recreation facilities in Alameda and evaluates impacts to these resources that could result from implementation of the proposed General Plan, such as overcrowding or physical deterioration of facilities.

8.2 Setting

REGULATORY FRAMEWORK

State Regulations

Quimby Act

The Quimby Act of 1975 (California Government Code § 66477) authorizes cities and counties to adopt ordinances requiring that proposed developments involving approval of a tentative or parcel subdivision map dedicate land, or pay in-lieu fees, for park or recreational purposes. An ordinance adopted for this purpose must specify the standard upon which the required land dedication or in-lieu fee is determined, but the mandated amount cannot exceed the proportionate amount necessary to provide 3 acres of parkland per 1,000 residents living in the residential subdivision. However, if the amount of existing parkland already exceeds this limit, a jurisdiction may apply a higher standard that does not exceed the equivalence of 5 acres of parkland per 1,000 residents. Fees collected pursuant to the Quimby Act can only be used for the purpose of developing new or rehabilitating existing neighborhood or community park or recreational facilities to serve the subdivision. In cases where the proposed subdivision meets or exceeds the minimum park standard, the fees can be used for park or recreational facilities in another neighborhood that has less than 3 acres of parkland per 1,000 residents.

Local Regulations

Development Impact Fee Ordinance

Section 27-3 of the Alameda Municipal Code promulgates the City's Development Impact Fee Ordinance consistent with the State Mitigation Fee Act (Government Code Section 66000 *et seq.*). The impact fees established by the ordinance are intended to mitigate the impacts of new residential and new or intensified industrial and commercial development on transportation, parks and recreation, general public facilities, and public safety. The purpose of the parks and recreation component is to fund a portion of the costs associated with construction of new park and recreation

improvements and facilities. The Development Impact Fee Ordinance does not establish a City standard for the provision of parkland, nor does the General Plan. The ordinance identifies fees applied per dwelling unit for residential development and per 1,000 square feet for non-residential development.

Alameda Municipal Code

Chapter XXIII of the Alameda Municipal Code regulates activity in public parks and squares, and includes a prohibition on riding bicycles or skateboards in public parks or on school property, where posted. It requires all skateboarders and skaters using the skate park at Alameda Point to wear a helmet, elbow pads, and knee pads at all times. Chapter XXIII prohibits dogs on the municipal golf course and on school properties, with the exception of service dogs for disabled persons.

EXISTING CONDITIONS

Parks and recreational facilities in Alameda are managed by the Alameda Recreation and Park Department (ARPD), which is the third oldest park system in the State of California. In addition to 24 parks distributed throughout the City, the ARPD has a two swim centers, a teen center, and a senior center that provides services to adults aged 50 and older. In response to the COVID-19 coronavirus pandemic affecting the world in 2020, the ARPD created a Virtual Recreation Center, while its playgrounds and dog parks are closed until they can be safely reopened.

Parks

The City of Alameda maintains nine community parks, representing approximately 98.1 acres of parkland; 17 neighborhood parks, encompassing 66.59 acres; and 7 regional parks, providing 344.93 acres of parkland. Citywide, there are 509.62 acres of parks and recreation facilities; they are listed in Table PR-1 and the locations are shown on Figure PR-1. Many of the parks integrate with the natural habitats in and around Alameda, including San Francisco Bay, Oakland Estuary, San Leandro Bay, and the wetlands, marshes, tidal flats, and beaches located on the fringes of the island city. Consistent with a stated objective in the Parks and Open Space Element of the proposed General Plan, all locations in Alameda are within a 10-minute walk of a public park or recreation area. Some of the larger or more noteworthy existing parks are described below. As shown on Figure PR-1, a large future regional shoreline park is planned for the northwest shoreline area of Alameda Point.

The city has not adopted a standard for the provision of parkland pursuant to the Quimby Act. However, based on the City's January 2020 population of 81,312 people¹ and the 509.62 acres of existing parkland, the City currently has 6.26 acres of park land per 1,000 residents.

¹ California Department of Finance, Table 2: E-5 City/County Population and Housing Estimates, 1/1/2020, May 2020.

TABLE A: City of Alameda Owned and Operated Open Space, Park and Recreational Park Facilities

Community Parks	Approximate Size in Acres
Jean Sweeney Open Space Park	10.64
Krusi Park	7.46
Leydecker Park	5.88
Lincoln Park	7.8
Main Street Linear Park	11
Neptune Park	3.08
Shoreline Park	31.83
Washington Park	14.71
Washington Dog Park	5.7
TOTAL COMMUNITY PARK ACREAGE	98.1
Neighborhood Parks	Approximate Size in Acres
Bayport Park	4.25
Enterprise Park	13.4
Franklin Park	2.98
Godfrey Park	5.45
Jackson Park	2.27
Lexington Fields	6.96
Littlejohn Park	3.45
Longfellow Park	1.14
Main Street Dog Park	1.3
Marina Cove Waterfront Park	3.2
Marina Village Park	4.5
McKinley Park	1.22
Portola Triangle	2.15
Rittler Park	4.81
Tillman Park	4
Towata Park	1.55
Woodstock Park	3.96
TOTAL NEIGHBORHOOD PARK ACREAGE	66.59
Regional Parks	Approximate Size in Acres
Alameda Point City Skate Park + Multipurpose Field	5.35
Bill Osborne Model Airplane Field	1.3
Corica Park and Golf Complex	332
Estuary Park Athletic Fields	4.26
Harrington Soccer Field	2.02
Grand Street Boat Launch Facility	n/a
Encinal Boat Ramp Launch Facility	n/a
TOTAL RECREATION ACREAGE	344.93
TOTAL EXISTING	509.62

Table PR-1**City-Owned Parks, Open Space, and Recreational Park Facilities**

Source: City of Alameda

Washington Park

Located adjacent to Robert W. Crown Memorial State Beach on the southern shoreline, Washington Park is the largest City park on Alameda Island. It provides sports fields, tennis courts, basketball courts, a playground, horseshoe pits, picnic areas, dog park, and recreation center on 14.71 acres of land.

Shoreline Park

Shoreline Park wraps around the outer edge of Bay Farm Island, providing 31.83 acres of open space adjacent to San Francisco Bay, providing unimpeded views of the San Francisco skyline.

Jean Sweeney Open Space Park

Jean Sweeney Open Space Park is a linear park encompassing 10.64 acres that is bordered by Constitution Way, Atlantic Avenue and Sherman Street. It is located on the former Alameda Beltline Railroad property that was secured by the City at its original purchase price due to the advocacy efforts of local resident, Jean Sweeney. In addition to paved trails, it provides a playground, picnic area, and outdoor pavilion. The park includes an approximately 4,000-foot section of trail that will comprise part of the planned Cross Alameda Trail.

Chuck Corica Park and Golf Complex

Located on Bay Farm Island, this 332-acre recreation area includes an 18-hole golf course and a new Par 3 9-hole course, driving range, putting green, golf shop, outdoor pavilion, and restaurant.

Trails

San Francisco Bay Trail

One of the most ambitious trail networks in the United States, the San Francisco Bay Trail follows much of the shoreline of the San Francisco Bay. Planned by the Association of Bay Area Governments (ABAG) pursuant to Senate Bill 10, construction began in 1989, and more than 350 miles of the trail have already been completed. When finished, it is planned to provide over 500 miles of trails running through all nine Bay Area counties, 47 cities, and across seven toll bridges. It is intended to provide opportunities for active and passive recreation for the widest possible range of users while highlighting the wide variety of recreational and interpretive experiences offered by the diverse Bay environment. It runs as close to the Bay shoreline as feasible, subject to constraints of existing development, land ownership, policy restrictions, environmentally sensitive areas, and other factors. It also provides inland spur trails to provide connection to existing park and recreation opportunities as well as points of natural, historic, and cultural interest along the Bay waterfront.

As shown on Figure PR-1, the Bay Trail is planned to encircle the entire Alameda shoreline, and all of the 6-mile Bay Farm Island segment has been completed. With the addition of ferry terminals, the Bay Trail will become a more important commuting corridor, especially in cities like Alameda.

Cross Alameda Trail

When completed, the 4-mile Cross Alameda Trail (CAT) will provide a safe bicycle and pedestrian connection from the planned ferry terminal on Seaplane Lagoon in Alameda Point to the Fruitvale Bridge (see Figure PR-2). Much of the trail is or will be located on vacant property that formerly comprised the alignment of the Alameda Belt Line Railroad. Segment 3, alongside Ralph Appezato Memorial Parkway, opened in February 2020. This included a dangerous two-block gap previously planned between Webster Street and Constitution Way that was incorporated into the trail as a two-way cycletrack along these two blocks due to the advocacy of Bike Walk Alameda. This section of the CAT included construction of a new mid-block pedestrian crossing of the busy roadway, including a flashing beacon, allowing a safer crossing for seniors living in a nearby apartment complex.

Segment 2 in Alameda Point was completed in May 2020, and the Segment 1 connection to Seaplane Lagoon (and the Seaplane Lagoon ferry terminal) was completed in August 2020. Segment 4, which crosses Jean Sweeney Open Space Park, was previously completed in December 2018. Segment 6 along Clement Street near Marina Cove opened in 2017. Completion of the rest of the CAT is anticipated in 2022. The City hopes that the Cross Alameda trail will lead to a significant reduction in car trips and the associated greenhouse gas emissions, while providing improved access to Alameda's parks and key connections to major transportation hubs for the ferry and AC Transit.

Recreational Facilities

Boat Facilities

Taking advantage of its island setting, Alameda's recreation facilities include public boat launches and numerous small boat marinas. The boat launches include the Grand Street Boat Launch on the northern shoreline in the vicinity of Coast Guard Island and the Encinal Boat Ramp on the southern shore, just west of Ballena Isle Marina. Most of the City's small boat marinas line the northern shoreline of Alameda Island, including Mariner Square Marina and Drystack Facility, Marina Village Yacht Harbor, Fortman Marina, Alameda Marina, Grand Marina, Island Yacht Club, Alameda Yacht Club, and the Oakland Yacht Club. The only other existing marinas are the Ballena Isle Marina, located on the southwestern shoreline of the main island, and a small unnamed marina in Alameda Point, just outside Seaplane Lagoon. The planned redevelopment of Alameda Point includes a future marina in Seaplane Lagoon that will include up to 530 boat slips.

Mastick Senior Center

The Mastick Senior Center is located in central Alameda at 1155 Santa Clara Avenue. Currently closed due to the COVID-19 pandemic, the center normally provides a variety of programs in the areas of health, education, fitness, and recreation to adults aged 50 and older. The center operates a thrift shop and provides a weekly Bingo program which are both primary fundraisers. The Mastick Senior Center offers day trips to museums, theater productions, nature preserves, and more. It also

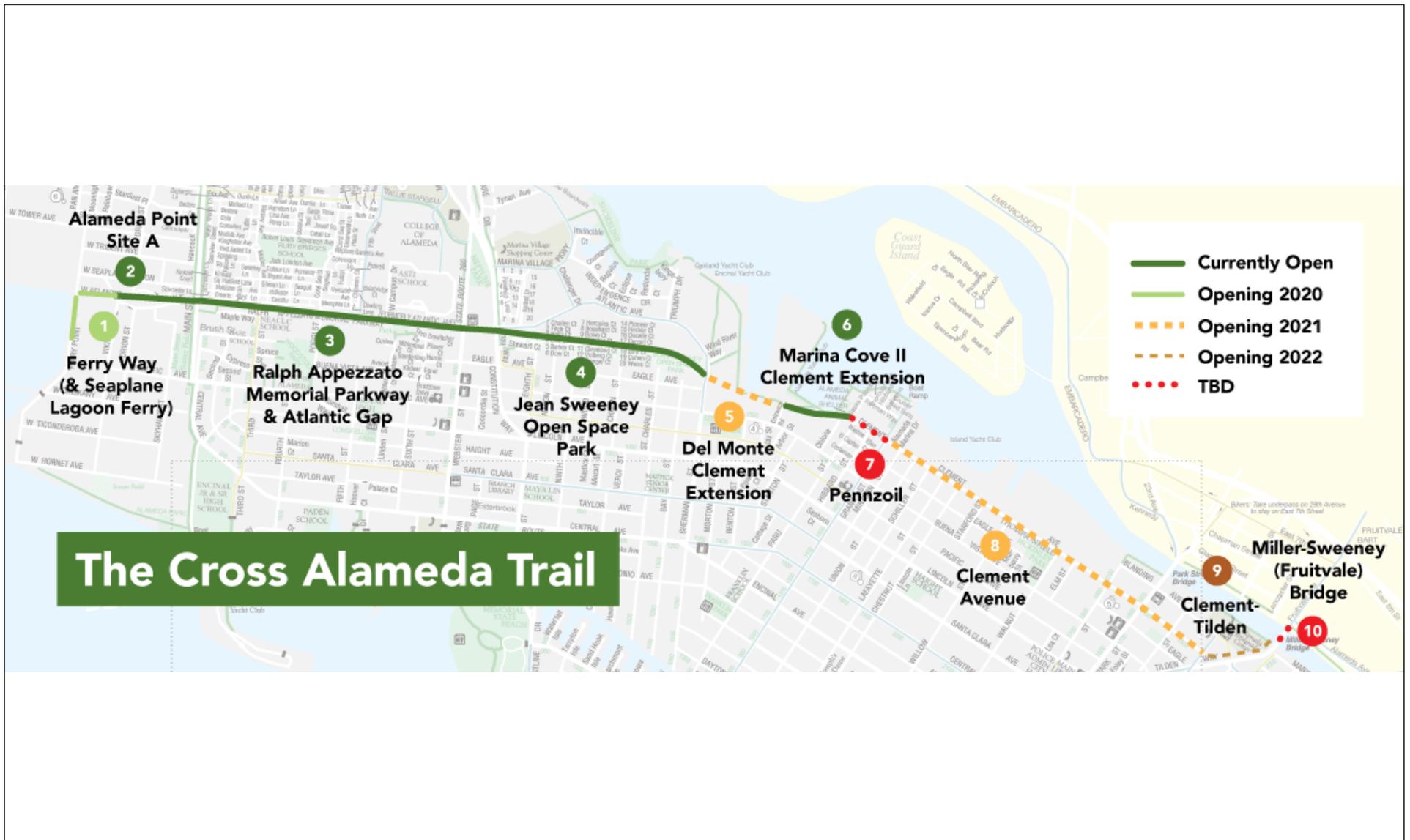


Figure PR-2

Cross Alameda Trail Alignment

Source: Bike Walk Alameda

provides an extended travel program leading trips to such destinations as Yosemite National Park and the Azores archipelago off the coast of Portugal.

Veterans Memorial Building

This historic building located in central Alameda is an event center that citizens can rent for weddings, dance parties, and similar events. This facility hosts a Wee Play program for infants and toddlers that includes arts and crafts, song and music time, and developmental and exploratory play. The ARPD sometimes hosts a haunted house at the Veterans Memorial Building on Halloween.

Underground Teen Center

The Underground Teen Center located in the bottom floor of the Veteran's Memorial Building in central Alameda provides a safe place for tweens/teens to have fun, socialize with friends and participate in enriching activities with adult supervision. The Underground has a big screen TV, pool table, video games, ping pong/shuffleboard, board games, music, and a snack bar.

Swim Centers

The ARPD operates two swim centers in Alameda: the Encinal Swim Center at 230 Central Avenue and the Emma Hood Swim Center at 1327 Oak Street. In addition to lap swimming, the Encinal Swim Center provides water aerobics classes to the public.

Alameda Point Gym

This gym provides four full-size basketball courts, four volleyball courts, and a workout gymnasium.

Bill Osborne Model Airplane Field

Located on Bay Farm Island, this facility provides free flying lessons by appointment and a safe place for residents to fly model airplanes, though proof of personal liability insurance is required.

City View Skate Park

The City View Skate Park is located in Alameda Point near the Oakland Estuary and features a concrete bowl, steel ramps, quarterpipes, and ledges for skateboarders.

Dog Parks

Alameda has three dog parks where dogs can play unleashed with supervision, including the following:

- Alameda Dog Park, 1302 8th Street
- Main Street Dog Park, 2990 Main Street
- Dog Park at Washington Park, 740 Central Avenue

8.3 Standards of Significance

Appendix G of the *CEQA Guidelines* indicates that a project may have a significant parks and recreation impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

These standards of significance are adopted for use in this EIR.

8.4 Impacts and Mitigation Measures

The assessment of parks and recreation impacts identified in this chapter is based on the standards of significance listed in Section 8.3. This section identifies impacts related to increased demand for parks and recreational facilities that could result from residential growth that would be allowed under the proposed General Plan.

The proposed Parks and Open Space Element of the *Alameda General Plan 2040* establishes goals and policies and strategies intended to maintain, enhance, expand, and improve Alameda's system of parks, open spaces, natural refuges, trails, and recreational facilities to address the evolving needs of the growing community, while serving all residents and neighborhoods equitably.

Specific policies of the Parks and Open Space Element that would reduce potential impacts on these resources include the following (not all relevant supporting actions are listed):

Goal 1 **Maintain, enhance and improve the existing system of parks, open spaces, refuges, trails, and recreational facilities.**

Policy OS-1 **Parks and Open Space Funding.** Secure adequate and reliable funding for the development, rehabilitation, programming and maintenance of parks, community and recreation facilities, trails, greenways, and open space areas.

Actions:

- **Equitable Budget Process.** Provide an annual opportunity for a representative group of the public to review the park maintenance budget and comment on upcoming priorities and plans to ensure compliance between the biannual Capital Improvement Program and the General Plan.
- **Maintenance.** Monitor parks and open space and recreational facilities on a regular basis and identify those sites that require repair, renovation and/or improvements. Assign high priority to maintenance and renovation of existing parks and facilities.

- **Assessment Districts.** Consider establishing neighborhood park assessment districts to fund neighborhood park maintenance and improvements.
- **Natural Areas.** Annually consider restoring and preserving natural areas for habitat protection, climate adaptation and passive recreation use such as walking, hiking, and nature study.
- **Recreation Areas.** Annually consider developing areas for recreation use, active transportation and public access along the islands' shorelines and interior. Improve parks and related open space facilities to ensure safety for users and adjacent properties.

Policy OS-2 Partnerships. Pursue and develop partnerships with federal, regional, and local non-profits, agencies, organizations, and districts to reduce the costs borne by the City of Alameda for the acquisition, construction, operations, and or maintenance of parks, open space, facilities and programs.

Actions:

- **Alameda Unified School District (AUSD) Partnerships.** Continue to support and collaborate with the AUSD to ensure that school and park open space joint uses are optimized.
- **East Bay Regional Park District (EBRPD) Partnerships.** Continue to support and collaborate with the EBRPD to ensure and protect the benefits of regional parks in Alameda. Collaborate with the EBRPD to develop, operate and maintain facilities and programs at regional parks including Alameda Point, Northwest Regional Shoreline Park, Encinal Beach, Crown Memorial State Beach and Alameda Beach, portions of the Bay Trail, and the Elsie D. Roemer Bird Sanctuary.
- **Federal Partnerships with the U.S. Veterans Administration and U.S Fish and Wildlife.** Continue to develop and sustain partnerships with the Veterans Administration and the U.S. Department of Fish and Wildlife to ensure the protection and maintenance of the Wildlife Refuge at Alameda Point.
- **Private Sector Partnerships.** Continue to develop public-private partnerships for the development, maintenance and operation of publicly accessible open space and recreational facilities, such as the Corica Park Golf Course Complex, Alameda Point Sports Complex, and the development of new parks at Alameda Point and along the Northern Waterfront.

Policy OS-3 Revenue Generating Opportunities. Pursue and develop revenue generating approaches, including cost recovery opportunities, concessions, design flexibility, independent use, and opportunities for rentals.

Policy OS-4 Grant Funding Opportunities. Continue to pursue park and open space grant opportunities and cooperative agreements with local, regional, state and federal agencies for expansion of the City's park and open space system.

Policy OS-5 **Accessibility For All.** Continue to upgrade parks, trails, and community facilities to ensure accessibility and inclusivity for all residents.

Policy OS-6 **Efficient Operations.** Reduce operational duplication and provide services, programs, and facilities as efficiently as possible.

Goal 2 **Expand and improve the parks and open space system to address the evolving needs of a growing community, serve all residents and neighborhoods equitably throughout the city, and adapt to the climate crisis.**

Policy OS-7 **An Interconnected Network.** Promote the creation of and maintenance of a comprehensive, seamless, interconnected system of parks, open space, commercial recreation, trails, and urban forest that frames and complements the City’s waterfronts, neighborhoods, and commercial areas.

Actions:

- **Trails.** Continue to create a network of safe and convenient pedestrian and bicycle trails connecting all public open spaces, parks, and recreational facilities to improve access to parks and destinations throughout Alameda.
- **On-Street Connections.** Promote improvements to on-street connections to ensure pedestrian and bicycle safety where separated trails are not feasible.
- **Slow Streets.** Work with community stakeholders to expand a network of slow streets to create additional spaces for active recreation throughout the city while maximizing existing trails, open spaces and destinations to make them more accessible and enjoyable to more people.
- **Flexible Spaces.** Consider public and privately owned sites that could be made available for public use, such as community gardens and sports fields.
- **Collaborative Design.** Work with neighborhoods in the design of parks and recreational facilities to meet the unique needs and interests of residents.

Policy OS-8 **Waterfront Access.** Ensure safe and convenient access to the Alameda waterfront from all Alameda neighborhoods.

Actions:

- **Trails.** Expand the City’s trail system to provide additional north-south trails and safe on-street connections to link neighborhoods to the closest waterfront shoreline facilities.
- **Bike Parking.** Provide bike parking at public access points along the waterfront.
- **Preservation of View Corridors.** Preserve view corridors to the waterfront along public streets, pathways, and trails.

- **Protect Public Right-of-Ways.** Prohibit private encroachments on public property and ensure that the use of public property does not create significant negative impacts to adjacent property owners.
- **School Partnerships.** Work with the Alameda Unified School District in obtaining shoreline access at Lincoln Middle School, Paden School and Encinal High School.
- **Boat Launches.** Add access to the water with public boat launches for non-motorized craft at strategic points around the island.
- **Continuous Public Shoreline Access.** Require that new developments along or adjacent to the waterfront provide continuous shoreline access on to serve the public.

Policy OS-9 San Francisco Bay Trail. Support the completion of a continuous shoreline Bay Trail along the entire perimeter of the City of Alameda. Refer to Figure 6.3.

Actions:

- **Diversity of Uses.** Support a variety of recreation activities including walking, rolling, running, bicycling, fishing, and vista points along the Bay Trail.
- **Destinations.** Promote the creation of a sequence of open spaces and activity areas that occur at significant points along the waterfront and offer recreational opportunities and enhance other uses along the waterfront.
- **Room for Everyone.** Ensure that the public access path along the waterfront includes a separated path for bicyclists or is wide enough to minimize conflicts between pedestrians and bicyclists.
- **Neighborhood Connectivity.** Support the creation of pedestrian and bicycle pathways and visual corridors along the waterfront that link the waterfront to inland neighborhoods.
- **Resilience.** Utilize current sea level rise projections when planning trail expansion and maintenance and design trail upgrades to ensure long-term resilience.

Policy OS-10 Cross Alameda Trail. Promote the completion of the Cross Alameda Trail for people walking, rolling, and cycling from the Alameda Point park at Seaplane Lagoon to the Miller Sweeney Bridge to support access to the citywide network of parks. Refer to Figure 6.3.

Action:

- **Oakland Connection.** Work with the County of Alameda and the City of Oakland to provide safe and convenient pedestrian and bicycle facilities from the Cross Alameda Trail across the Miller Sweeney Bridge to the Bay Trail in Oakland.

Policy OS-11 Climate Adaptation. Adapt the existing park and open space network to rising sea levels, more severe storm events and wave energy, and rising ground water.

- Policy OS-12 Wildlife Habitat.** Promote the preservation, protection and expansion of wildlife habitat areas, open space corridors, and ecosystems as essential pieces of the overall network and an important contributors to citywide resiliency.
- Policy OS-13 Jean Sweeney Open Space Park.** Support the completion of the last two phases of the 25-acre Jean Sweeney Open Space Park to include a community garden, demonstration gardens, walking trails, a bicycle skills loop, an outdoor classroom, picnic areas, and large areas of open space and trees.
- Policy OS-14 Estuary Park.** Support the completion of the 8-acre Estuary Park to provide recreational facilities for the neighborhoods on the former Naval Air Station property in western Alameda to include passive recreational space, picnic areas, and basketball courts.
- Policy OS-15 City Aquatic Center.** Partner with the Alameda Unified School District to develop a City Aquatic Center to serve the community’s swimming needs and AUSD swim programs.
- Policy OS-16 Alameda Point Northwest Shoreline Park and Bay Trail Extension.** Partner with the East Bay Regional Park District to develop a 158 acre waterfront, public park and Bay Trail extension on the Northwest Territories.
- Policy OS-17 Alameda Point Wildlife Refuge and Bay Trail Extension.** Partner with the Bureau of Veterans Affairs and the Department of Fish and Wildlife to create a seasonal bay trail along the shoreline of the Wildlife Refuge.
- Policy OS-18 De-Pave Park on the Seaplane Lagoon and Bay Trail Extension.** Implement the development of the 22-acre western shore of the Seaplane Lagoon as a passive nature park with upland and floating wetlands, educational and interpretive programs, picnic areas, camping opportunities, and nature trails.
- Policy OS-19 Seaplane Lagoon Park and Bay Trail Extension.** Support the development of the northern and eastern shore of the Seaplane Lagoon as an urban waterfront with access to the Ferry Terminal, the Bay Trail, waterfront dining and cafes, passive recreation space, an outdoor amphitheater, public boat launches, and nonmotorized watercraft rental and lessons.
- Policy OS-20 Regional Sports Park.** Promote the development of a 55-acre regional sports complex for active recreational uses and team sports, including baseball and softball diamonds, multipurpose rectangular fields, expanded skate park, BMX park, tennis and pickle ball courts.
- Policy OS-21 Waterfront Developments.** Partner with private property owners to develop publicly accessible waterfront open space and Bay Trail facilities in new waterfront development.

Action:

- **New Open Space.** Partner with private property owners and businesses to develop publicly accessible waterfront parks and trails at:
 - Alameda Landing Waterfront
 - Ballena Isle
 - Marina Village Shipways property

- Former Windriver property on the Alaska Basin
- Encinal Terminals and the Alaska Basin
- Alameda Marina
- Other future waterfront development

IMPACTS

Impact 8-1

Population growth allowed under the *Alameda General Plan 2040* could result in increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility could occur or be accelerated. (LTS)

As discussed in more detail in Chapter 5, Population and Housing, the City's population is projected by the California Department of Finance (DOF) to increase to 92,465 residents by 2040. With 509.62 acres of existing parkland, the City currently has a ratio of 6.26 acres of parkland per 1,000 residents, based on its January 2020 population of 81,312 people. With no increase in parkland, this ratio would drop to 5.51 acres of parkland per 1,000 residents in 2040, based on population growth projected by DOF.

While the city has not adopted a standard for the provision of parkland pursuant to the Quimby Act, the Quimby Act sets a limit on the amount of parkland dedication (or equivalent in-lieu fee) required of new residential subdivisions of 3 acres of parkland per 1,000 residents living in the assessed development, which can be increased to 5 acres of parkland per 1,000 residents if the 3-acre standard has already been met. For purposes of this analysis, the higher 5-acre limit is assumed to be an acceptable service ratio for the provision of public parks. This is an equivalent or higher standard in comparison with adopted parkland standards in other Alameda County jurisdictions. For example, the cities of Emeryville, Union City, Albany, and Newark all have an adopted standard of 3 acres of parkland per 1,000 new residents. The City of Berkeley has a standard 2 acres of parkland per 1,000 residents and the City of Oakland has a goal of 4 acres of local-serving park acreage per 1,000 residents. The cities of Hayward, San Leandro, Fremont, Pleasanton, Dublin, and Livermore have a standard of 5 acres of parkland per 1,000 residents.

Since at buildout of the *Alameda General Plan 2040* the City would still have more than 5 acres of parkland per 1,000 residents without adding new parkland, implementation of the proposed General Plan would have no impact on the environment from the construction of new parks or other recreational facilities. While the proposed General Plan has policies calling for the expansion of existing parks, completion of partially completed parks, and development of new parks, as individual park projects are proposed for development, they would be subject to separate environmental review pursuant to CEQA.

Although Alameda currently has an adequate amount of parkland to serve its residents and is expected to still have sufficient parkland following the growth in population that is anticipated in the *Alameda General Plan 2040*, the projected 13.7-percent increase in the City's population

between 2020 and 2040 is expected to result in a commensurate increase in demand for parks and recreation facilities that would contribute to the deterioration of those facilities, even taking into consideration the increased park acreage that may be developed during the planning horizon.

Implementation of proposed policies in the Parks and Open Space Element would ensure that the City's parks and recreation facilities are adequately maintained and do not deteriorate substantially, including policies OS-1 through OS-6 and OS-11. In addition, policies OS-7 through OS-21 would help the City increase the amount of parkland in Alameda, which would serve to spread demand for park facilities over a greater area, further reducing the potential for deterioration of parks and recreation facilities. In addition, new development allowed under the General Plan would be required to pay the City's Development Impact Fee, which would further assist the City in acquiring new parks and recreation facilities and funding the capital improvement of existing parks and recreation facilities. This would therefore be a *less-than-significant impact*.

Mitigation Measure 8-1

None required.

Impact 8-2

New development allowed under the *Alameda General Plan 2040* could include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment. (LTS)

In proposed General Plan Policy OS-1, the City of Alameda has stated its intention to secure funding for the development, rehabilitation, programming, and maintenance of parks, community and recreation facilities, trails, greenways, and open space areas. Policies OS-2 through OS-4 map out strategies for expanding the City's network of parks, while policies OS-7 through OS-10 and OS-12 through OS-21 identify specific improvements or acquisitions that would add to the inventory of parks and recreation facilities. Additionally, private hotel, residential, mixed-use, and other developments proposed in accordance with the General Plan could include the construction of private recreation facilities, the construction of which could have adverse physical effects on the environment.

While construction of new or expanded public or private parks, trails, and recreation facilities would have potentially significant adverse effects on the environment—such as emissions of greenhouse gases and other air pollutants, generation of noise, disturbance of buried archaeological resources, or siltation of surface waters from erosion—such impacts would be project- and site-specific, and their detailed evaluation is beyond the scope of this programmatic EIR, particularly given that there are currently no specific, concrete proposals or plans for the development of such facilities. At the time that such projects are proposed for implementation, they would be subject to separate permitting and environmental review pursuant to CEQA. Construction of new parks and recreation facilities would also be required to comply with all applicable federal, State, and local regulations, many of which are intended to protect the environment, such as the NPDES C.3 stormwater

requirements described in Chapter 15, Hydrology and Water Quality. Accordingly, implementation of the proposed General Plan would have a ***less-than-significant impact*** from the construction or expansion of recreational facilities.

Mitigation Measure 8-2

None required.

CUMULATIVE IMPACTS

Cumulative development in the neighboring cities surrounding Alameda, in combination with new development in Alameda consistent with the proposed General Plan, would contribute to regional demand for parks and other recreational facilities. However, each of the surrounding jurisdictions have their own adopted standards for provision of parkland, along with other general plan policies supporting the development of parks and other recreational facilities. The proposed policies in the Parks and Open Space Element of the *Alameda General Plan 2040* are intended to ensure the provision and maintenance of adequate parks and recreation facilities to serve the needs of Alameda residents, and the general plan policies of neighboring cities were also adopted for this purpose. Implementation of Alameda's proposed policies would ensure that the incremental contribution to cumulative impacts to parks and recreation facilities caused by new development consistent with the General Plan would not be cumulatively considerable. Therefore, cumulative impacts to parks and recreation facilities would be less than significant.

9. BIOLOGICAL RESOURCES

9.1 Introduction

This chapter provides a description of existing biological resources in the City of Alameda and identifies adverse impacts that could occur to sensitive biological resources from the construction of future new development allowed under the proposed *2040 Alameda General Plan*. Where “potentially significant” and “significant” impacts to biological resources are identified, mitigation measures are recommended to reduce the impacts to levels considered less than significant under CEQA.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations, including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (USACE), California Regional Water Quality Control Board (RWQCB), and CDFW.

9.2 Setting

REGULATORY FRAMEWORK

Federal Endangered Species Act

The Federal Endangered Species Act (FESA), as amended (16 U.S.C. § 1531 et seq.), forms the basis for the federal protection of threatened or endangered plants, insects, fish, and wildlife. FESA gives regulatory authority to the USFWS for federally listed terrestrial species and non-anadromous fish. The requirements of FESA as they apply to saltwater fish and other marine organisms are enforced by the National Marine Fisheries Service. FESA contains the following four main elements:

- **Section 4 (16 U.S.C. §1533):** Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.
- **Section 7 (§1536):** Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.
- **Section 9 (§1538):** Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.
- **Section 10 (§1539):** Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed General Plan.

Section 9 of FESA prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife[; s]uch act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." (50 CFR Part 17.3.) In 2001, the Ninth Circuit Court of Appeals ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities.¹ According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather the USFWS must show that the species is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an Incidental Take Permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or pursuant to Section 10 of FESA, which requires preparation of a Habitat Conservation Plan (HCP) (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation at the discretion of the federal agencies conducting the Section 7 consultation. The Section 7 consultation process is

¹ *Arizona Cattle Growers' Association v. U.S. Fish and Wildlife Service* (9th Cir. 2001) 273 F.3d 1229.

triggered by a determination of the “action agency” - that is, the federal agency that is carrying out, funding, or approving a project - that the project “may affect” a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required.

As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in “jeopardy” to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion it will contain either a “jeopardy” or “non-jeopardy” decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be highly unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a “non-jeopardy” Biological Opinion, the nexus federal agency may authorize the discretionary permit, making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an Incidental Take Permit that allows applicants to “take” federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, or counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a Conservation Plan to the USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms Incidental Take Permit, Section 10 Permit, and Section 10(a)(1)(B) Permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an Incidental Take Permit can be issued.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703-712 (MBTA), makes it unlawful to “take” (including killing, capturing, selling, trading, and transport) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 10, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Federal Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972, as amended (MMPA), is the principal federal legislation that guides marine mammal species protection and conservation policy. The MMPA delegates authority for oceanic marine mammals to the Secretary of Commerce, the parent agency of the National Oceanic and Atmospheric Administration (NOAA). Species of the order Cetacea (whales and dolphins) and species, other than walrus, of the order Carnivora, suborder Pinnipedia (seals and sea lions), are the responsibility of NOAA Fisheries (or NMFS). The Department of the Interior's USFWS is responsible for the sea otter. Marine mammals that are already managed under international agreements are exempt as long as the agreements further the purposes of the MMPA.

The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas. The MMPA defines "take" as the act of hunting, killing, capture, and/or harassment of any marine mammal, or the attempt at such. The act also prohibits the import, export, or sale of any marine mammals, parts, or products within the United States.

The MMPA provides for the "incidental take" of marine mammals during marine activities, as long as NMFS finds the "take" would be of small numbers of individuals and have no more than a negligible impact on those marine mammal species not listed (i.e., listed under FESA as depleted under the MMPA, and not having an unmitigable adverse impact on subsistence harvests of these species).

Federal Regulation of Wetlands and Other Waters

Section 404 of the Clean Water Act of 1972 (CWA) regulates activities that result in the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 10 of the Rivers and Harbors Act authorizes the U.S. Army Corps of Engineers (USACE) to regulate dredging, filling, and construction activities in navigable waters. The primary intent of the CWA is to authorize the U.S. Environmental Protection Agency (US EPA) to regulate water quality through the restriction of pollution discharges. The USACE has the principal authority to regulate discharges of dredged or fill material into waters of the U.S. However, the US EPA has oversight authority over the Corps and retains veto power over the Corps' decision to issue permits. Waters of the U.S.² include:

1. The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;

² 33 CFR 328.3.

2. Tributaries;
3. Lakes and ponds, and impoundments of jurisdictional waters; and
4. Adjacent wetlands.

The limits of jurisdiction, subject to regulation under the CWA, are defined as:³

- a. **Territorial Seas.** The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles.
- b. **Tidal Waters of the United States.** The landward limits of jurisdiction in tidal waters:
 1. Extends to the high tide line, or
 2. When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.
- c. **Non-Tidal Waters of the United States.** The limits of jurisdiction in non-tidal waters:
 1. In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
 2. When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
 3. When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Under Section 404, projects may be authorized under existing general permits (a Nationwide Permit) or may require an Individual Permit. A Nationwide Permit is a more streamlined permit process than an Individual Permit, although supporting compliance efforts, such as for the federal Endangered Species Act (ESA), are identical regardless of permit type. If the USACE decides that the proposed project requires a Section 404 permit for the placement of fill into a regulated wetland but that it is ineligible for a Nationwide Permit, then a Section 404 Individual Permit would be required.

The requirements of a Section 404 Nationwide Permit allow less than 0.5 acre and 300 linear feet of channel of permanent impacts to federal jurisdictional wetlands. If permanent structures would require more than 0.5 acre within delineated federal wetlands, then a Section 404 Individual Permit would automatically be required. As a part of the Section 404 Individual Permit process, National Environmental Policy Act (NEPA) review would also be required.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1976 applies to fisheries resources and fishing activities in federal waters, which extend to 200 miles offshore. Conservation and management of U.S. fisheries, development of domestic fisheries, and phasing

³ 33 CFR 328.4

out of foreign fishing activities are the main objectives of the legislation. When the MSFCMA was amended in 1996 to include habitat conservation issues, the designation of “Essential Fish Habitat” (EFH) was created. EFH is broadly defined by the MSFCMA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

The Sustainable Fisheries Act of 1996 (Public Law 104-297) amended the MSFCMA to establish new requirements for Essential Fish Habitat descriptions in federal Fisheries Management Plans (FMPs), and to require federal agencies to consult with the NMFS on activities that may adversely affect EFH. The Magnuson-Stevens Act requires all fishery management councils to amend their FMPs to describe and identify EFH for each managed fishery. The Act also requires consultation with NMFS by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of the activity’s location. NMFS may provide EFH conservation and enhancement recommendations to federal and state agencies for actions that adversely affect EFH, but their recommendations are advisory, not proscriptive.

Long Term Management Strategy Management Plan for Dredging in San Francisco Bay

The 2001 Long Term Management Strategy (LTMS) Management Plan for maintenance dredging of navigation channels in San Francisco Bay provides for a cooperative approach to sediment management in the San Francisco Bay-Delta. It represents a cooperative program among the U.S. EPA, USACE, RWQCB, San Francisco Bay Conservation and Development Commission, and regional stakeholders, including NMFS, CDFW, area environmental organizations, and water-related industries. The LTMS facilitates the economical and environmentally responsible maintenance of critical and needed navigation channels in the Bay-Delta and the environmentally responsible disposal of dredged material. It maximizes the use of dredged material as a beneficial resource, and establishes a cooperative permitting framework for dredging, dredged material disposal, and development of a beneficial reuse site for dredge material. A key component of the LTMS is the establishment of construction work windows that include time periods when construction activities that have the potential to affect aquatic and terrestrial wildlife habitat and migration activity are allowed, restricted, or prohibited. Different restrictions and requirements are enforced depending on the affected species and time of year. If a project proponent wishes to construct during restricted periods, they must formally submit for consultation with the appropriate resource agencies (NMFS, USFWS, and CDFW). Through formal consultation, specific measures must be implemented to avoid or reduce potential impacts. Table BIO-1 presents LTMS established dredging work windows for the San Francisco Bay-Delta.

Typical LTMS best management practices (BMPs) often required of in-water work in San Francisco Bay include, but are not limited to:

- the use of impermeable silt curtains to contain sediments within a limited area until it resettles;

- the use of gunderbooms;⁴
- operational controls for mechanical and hydraulic dredges to limit the amount of sediment released while dredging.

Table BIO-1
Environmental Work Windows for Maintenance Dredging Activities
Established in the Long Term Management Strategy for San Francisco Bay

Species	Applicable Bay Region/Location	Authorized Work Windows
Steelhead trout	Central San Francisco Bay, Bay Bridge to Sherman Island	June 1 to November 30
Chinook salmon	Bay Bridge to Sherman Island (juveniles); Pinole Shoal, Suisun Bay Channel (adults)	June 1 to November 30
Coho salmon	Marin County waters from the Golden Gate to Richmond-San Rafael Bridge	June 1 to October 31
Pacific herring	Central San Francisco Bay, Richardson Bay, North and South Bay	March 1 to November 30
Longfin smelt	Delta to South San Francisco Bay	June 1 to October 31
California least tern	Berkeley Marina to San Lorenzo Creek within 1 mile of the coastline	August 1 to March 15
California brown pelican	Within 300 feet of known roost site	October 1 to June 30

Source: LTMS 2004; Robinson and Greenfield 2011.

California Endangered Species Act

In 1970, the State passed the California Endangered Species Act (CESA).⁵ The basic policy of CESA is to conserve and protect plant and animal species at risk of extinction and their habitats. Pursuant to Fish and Game Code Section 2070, CDFW maintains a list of endangered species and a list of threatened species, as well as a list of “candidate species” that are under formal consideration for inclusion on the lists of endangered or threatened species.

CDFW also maintains a list of Species of Special Concern; such species are also afforded protection under CEQA. A Species of Special Concern (SSC) is a species, subspecies, or distinct population of an

⁴ A gunderboom is similar to a silt curtain but is made of permeable material that allows water to flow through while trapping sediment within the curtain.

⁵ California Fish and Game Code, Section 2050 *et seq.*

animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- The species is extirpated from the State or, in the case of birds, is extirpated in its primary season or breeding role;
- The species is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- The species is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- The species has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

State agencies may not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have the provision for "harm" addressed by FESA, CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFW determines that a proposed project could impact a State-listed threatened or endangered species, CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired an Incidental Take Permit from CDFW and/or USFWS (if it is a federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State-listed species, an Incidental Take Permit pursuant to Section 2081 of the Fish and Game Code would be necessary (versus a federal Incidental Take Permit for federal listed species). CDFW will issue an Incidental Take Permit only if:

- 1) The authorized take is incidental to an otherwise lawful activity;
- 2) the impacts of the authorized take are minimized and fully mitigated;
- 3) measures required to minimize and fully mitigate the impacts of the authorized take:
 - a) are roughly proportional in extent to the impact of the taking on the species;
 - b) maintain the project applicant's objectives to the greatest extent possible;
 - c) are capable of successful implementation; and,
- 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the legislature’s intent to “preserve, protect, and enhance endangered plants in this state.” The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The California Endangered Species Act expanded upon the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513

California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Such a take would also violate federal law protecting migratory birds, i.e., the Migratory Bird Treaty Act, discussed above.

All raptors (hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code Section 3503.5. Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code Section 3511. “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

USFWS 2012 Biological Opinion and Navy Declaration of Restrictions

In 1999 the USFWS issued a Biological Opinion (BO) pertaining to the planned reuse of Alameda Point—the former Naval Air Station (NAS) Alameda—and the associated potential impacts on the California least tern (*Sternula antillarum browni*) colony that nests within the runway areas of NAS Alameda. The BO contained terms and conditions (T&Cs) for reuse that included lighting, landscaping, and use restrictions for Alameda Point. A new Biological Opinion was issued by USFWS in 2012 that superseded the 1999 BO consistent with the Veterans Administration’s plans for a

columbarium and outpatient clinic facilities on the northern portion of the federal property and the transfer of submerged lands to the City. The intent of the 2012 BO is to protect the endangered California least tern nesting colony while at the same time allowing for development of surrounding areas. The 2012 BO establishes T&Cs and avoidance and minimization measures (AMMs) limiting the lighting, landscaping, uses, and development in certain areas of the project site as well.

The T&Cs and AMMs established by the 2012 BO have been made enforceable upon the project site by a Declaration of Restrictions (“Declaration”) recorded on the entirety of Alameda Point site by the Navy in June 2013. The Declaration identified 22 sub-areas based on proximity to the least tern colony and the resources available within each sub-area of the project site. Each sub-area is governed by a set of restrictions (T&Cs and AMMS) that must be adhered to by new uses and development at Alameda Point consistent with the 2012 BO. These restrictions are intended to avoid and minimize impacts on least terns by controlling, to some degree, the amount and nature of development in the project area. They include such measures as height and density restrictions on trees and shrubs, prohibition on nighttime playing field illumination from April 1st through August 15th unless light levels near the least tern colony do not increase by more than 10 percent, limitations on building square footage, building height restrictions, water craft exclusion zones, and many more restrictions and limitations.

Baylands Ecosystem Habitat Goals Project

The Baylands Ecosystem Habitat Goals Project (Goals Project) was established in June 1995 to establish a long-term vision for a healthy and sustainable baylands ecosystem. The final report, published in 1999, enumerated a series of non-binding recommendations for habitat protection and restoration. Recommendations specific to Alameda include:

- Enhance and expand tidal and diked habitats at all potential areas throughout the segment, for example, on Alameda Island, on Bay Farm Island, and in the vicinity of the Oakland Airport.
- Protect and enhance the eelgrass bed near Bay Farm Island.
- Enhance and protect suitable habitat (e.g., barren or sparsely vegetated areas protected from predators) for snowy plover and least tern at Alameda Naval Air Station, Oakland Airport, Bay Farm Island, and other locations.
- Restore beach dune and marsh in the sanctuary on the southern end of Alameda Island.
- Increase habitat in and around San Leandro Bay for harbor seals and develop extensive and connected segments of tidal marsh for small mammals.
- Restore pockets of low-lying sand beaches in sheltered sites to support reintroduced colonies of California sea-blite.

The Goals Project was recommended by the Governor’s “California Wetlands Conservation Policy” and by the *Comprehensive Conservation and Management Plan for the San Francisco Estuary* (CCMP) of the U.S. Environmental Protection Agency’s San Francisco Estuary Partnership. It is also supported by most of the agencies and non-governmental groups with major planning, operational,

or regulatory interests in Bay Area wetlands. The CCMP was adopted in 1993, with updated CCMPs adopted in 2007 and 2016.

The CCMP is a collaborative agreement about what should be done to protect and restore the Estuary—a road map for restoring the Estuary’s chemical, physical, and biological processes to health—but is not a binding policy document. The CCMP includes the following primary objectives, supported by detailed goals and actions:

- a. Protect, restore, and enhance ecological conditions and processes that support self-sustaining natural communities
- b. Eliminate or reduce threats to natural communities
- c. Conduct scientific research and monitoring to measure the status of natural communities, develop and refine management actions, and track progress towards management targets
- d. Increase resilience of tidal habitats and tributaries to climate change
- e. Increase resilience of communities at risk from climate change impacts while promoting and protecting natural resources
- f. Promote integrated, coordinated, multi-benefit approaches to increasing resiliency
- g. Increase drought resistance and water efficiency and reduce reliance on imported water
- h. Improve freshwater flow patterns, quantity, and timing to better support natural resources
- i. Reduce contaminants entering the system and improve water quality
- j. Build public support for the protection and restoration of the Estuary
- k. Strengthen regional leadership in support of Estuary health
- l. Promote efficient and coordinated regional governance

San Francisco Bay Subtidal Habitat Goals Project

Continuing with the Goals Project described above, in 2010 the San Francisco Bay Conservation and Development Commission, the California Ocean Protection Council/California State Coastal Conservancy, the National Oceanographic and Atmospheric Administration (NOAA), and the San Francisco Estuary Partnership, in collaboration with each other and the broader scientific community, managers, restoration practitioners, and stakeholders, published the *San Francisco Bay Subtidal Habitat Goals Project*, a report containing restoration planning goals and guidelines for the subtidal areas and habitats of the San Francisco Bay-Delta. The Subtidal Habitat Goals Project takes a Baywide approach in setting science-based goals for maintaining a healthy, productive, and resilient ecosystem. Where possible, these subtidal goals are designed to connect with intertidal habitats and with goals developed by other projects, including goals for Baylands and uplands habitats. The goals and recommendations contained within the Subtidal Habitat Goals Project are not binding by regulation but rather are intended to serve as guidance to local, state, and federal agencies when evaluating projects and their potential ecological effects, and when issuing permits.

Though currently neither a policy nor regulatory document, this report offers guidance on opportunities for subtidal restoration and protection. Local governments may incorporate these recommendations into their planning processes and documents and regulatory agencies may use the report to evaluate, revise, or implement their policies.

Subtidal habitat consists of all the submerged area beneath the Bay water's surface and includes mud, shell, sand, rocks, artificial structures, shellfish beds, submerged aquatic vegetation, macroalgal beds, and the water column above the bay bottom. Submerged habitats are important for threatened species such as green sturgeon and Chinook salmon, commercial species like Dungeness crab and Pacific herring, and a host of other fish, shrimp, crabs, migratory waterfowl, and marine mammals.

The principal habitat conservation goals included in the Subtidal Habitat Goals Report that apply to the proposed project include:

Soft Substrate

- Promote no net increase in disturbance to San Francisco Bay soft bottom habitat.
- Promote no net loss to San Francisco Bay subtidal and intertidal sand habitats.

Rock Habitats

- Promote no net loss of natural intertidal and subtidal rock habitats in San Francisco Bay.

Artificial Structures

- Enhance and protect habitat function and the historical value of artificial structures in San Francisco Bay.
- Improve San Francisco Bay subtidal habitats by minimizing placement of artificial structures that are detrimental to subtidal habitat function.

Shellfish Beds

- Protect San Francisco Bay native shellfish habitats (particularly the native oyster *Ostrea lurida*) through no net loss to existing habitats.

Submerged Aquatic Vegetation

- Protect existing eelgrass habitat in San Francisco Bay through no net loss to existing beds.

Bay Conservation and Development Commission and San Francisco Bay Plan

The Bay Conservation and Development Commission (BCDC) is authorized by the McAteer Petris Act of 1965 to analyze, plan, and regulate San Francisco Bay and its shoreline. BCDC implements the San Francisco Bay Plan and regulates filling and dredging in the bay, its sloughs and marshes, and certain creeks and their tributaries. BCDC jurisdiction includes the waters of San Francisco Bay as well as a shoreline band that extends inland 100 feet from the high tide line. Any fill, excavation

of material, or substantial change in use within BCDC jurisdiction requires a permit from BCDC. All of the shoreline areas in Alameda lie within the jurisdiction of BCDC. BCDC Permit eligibility and conditions of permit issuance are largely governed by the *San Francisco Bay Plan* (Bay Plan), completed and adopted by BCDC in 1968 and amended regularly since then. The Bay Plan contains findings and policies related to fish and wildlife, water quality, fill, recreation, public access, and the appearance and design of shorelines, as well as procedures for BCDC control of filling, dredging, and shoreline development. In addition to compliance and coordination with other federal and State regulations and policies discussed in this section, Bay Plan policies are also aligned with USACE's Long Term Management Strategy (LTMS) and are focused "to assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored, and increased."

Alameda Predator Management Plan

A condition of the 2012 Biological Opinion issued by the USFWS for the conveyance of Alameda Point from the U.S. Navy to the City of Alameda required the City to prepare and implement a Predator Management Plan (PMP). The PMP is intended to provide for the long-term protection and management of the endangered California least tern (*Sternula antillarum browni*) colony that nests on the grassland and seasonal wetlands within the runway areas of the former Naval Air Station Alameda and is the largest least tern colony in the San Francisco Bay Area. In addition to nesting on this undeveloped portion of Alameda Point, least terns use the adjacent open waters of San Francisco Bay, nearby Seaplane Lagoon, and the Oakland-Alameda Estuary for foraging.

The City is required under the terms of a Memorandum of Understanding (MOU) with the Navy to fund the PMP in perpetuity. As part of the PMP, the City entered into a Cooperative Service Agreement (CSA) with the U.S. Department of Agriculture's Wildlife Services in February 2013 to perform predator management activities on City lands. Transfer of this PMP implementation and funding to a third party can occur, contingent upon USFWS approval.

City of Alameda General Plan

The proposed *Alameda General Plan 2040* contains goals, objectives, policies, and actions intended to protect biological resources in Alameda; they are set forth in both the Conservation + Climate Action Element and the Parks + Open Space Element. Relevant policies are listed in Section 9.4, Impacts and Mitigation Measures.

City of Alameda Bird-Safe Building Ordinance

The Alameda Bird-Safe Building Ordinance, codified at Municipal Code Section 30-5.16, is intended to reduce bird mortality from windows or other specific building features known to increase the risk of bird collisions. It requires the use of bird-safe glazing on new buildings that are taller than 35 feet and that have one or more façades in which glass constitutes 50 percent or more of the area of an individual facade. The bird-safe glazing requirement must be met on any window or unbroken glazed segment with an area of 12 square feet or more. These same criteria apply to windows replaced in existing buildings meeting the size and glazing area thresholds. Additionally, bird-safe

glazing is required for new or replaced glass walls with an unbroken glazed segment 24 square feet or more in size, regardless of building size. Replacement of existing glass on historic structures is generally exempt from the requirements of this ordinance.

Bird-safe glazing required by the ordinance must include features that enable birds to perceive the glass as a solid object, such as:

- Permanent external screens that eliminate the reflectivity of the glass;
- Light-colored blinds or curtains;
- Opaque or translucent glass or window film
- Paned glass with mullions on the exterior of the glass;
- Glass etched, fritted, stenciled, silk-screened or applied with decals of patterns (dots, stripes, images, abstract patterns, lettering) that are at least 1/8-inch tall and ¼-inch wide and separated no more than 2 inches vertically and 4 inches horizontally;
- Ultraviolet (UV)-pattern reflective glass, laminated glass with a patterned UV-reflective coating, or UV-absorbing and UV-reflecting film that is permanently applied to the glass. Where patterns are used, they must meet the preceding 2-by-4 rule; or
- Other glazing treatments providing an equivalent level of bird safety and approved by the Planning Director as part of building plan review.

An applicant may propose building and fenestration designs and/or operational measures that will minimize bird collisions and achieve an equivalent level of bird safety, subject to approval by the Planning Director.

City of Alameda Dark Skies Ordinance

The Alameda Dark Skies Ordinance, codified at Municipal Code Section 30-5.16, is intended to minimize light that can be attractive, disorienting, and hazardous to migrating and local birds, while also preventing excessive light and glare on public roadways and private properties and minimizing artificial outdoor light that can have a detrimental effect on human health, the environment, astronomical research, amateur astronomy, and enjoyment of the night sky. The ordinance requires all exterior lighting fixtures to be fully shielded and downward- directed, with the exception of low-voltage landscape lighting, historic lighting fixtures, and uplighting used to highlight special architectural features, historic structures, public art and monuments, and similar objects of interest. In the case of architectural uplighting, lamps used for may not exceed 100 watts, or a 20-watt equivalent light-emitting diode (LED), and must emit less than 1,600 lumens per fixture. Light trespass onto neighboring properties may not exceed 1 foot-candle as measured at the nearest property line to the light source. The ordinance also imposes restrictions on security lighting. Parking lot lighting is regulated separately under Municipal Code Section 30-7.17.

City of Alameda Street Tree Removal Policy and Ordinance

The *Alameda Master Street Tree Plan* adopted in February 2010 includes a Protected Tree Removal Policy that prohibits the removal of any protected tree within the public right-of-way without a certificate of approval from the Historical Advisory Board. Protected trees include the palm trees in the public right-of-way on Burbank Street and Portola Avenue, any street tree on Thompson and Central Avenues, and any Coastal Live Oak (*Quercus agrifolia*) with a 10-inch or greater diameter measured 4.5 feet above the ground. In addition, Section 23-3.2 of the City's municipal code applies to street trees in general and requires that the Public Works Director permit any planting, removal, trimming, pruning, or cutting of street trees. City tree permits may specify the number, kind, and spacing for planting trees and shrubs and may limit the number of trees or shrubs to be removed or pruned and prescribe the methods to be used in any street tree or shrub removal.

EXISTING CONDITIONS

The information on Alameda's biological resources presented in this section is compiled from previous biological resources assessments, environmental impact reports, and other environmental studies previously published by the City of Alameda. The source documents are listed in the Bibliography, but are not cited in the discussion in order to avoid a surfeit of footnotes.

The City of Alameda is centrally located within San Francisco Bay, which is the largest estuary along California's coastline. This estuarine environment of marshlands, mudflats, salt production lands, and open water supports close to 100 species of fish. As an essential portion of the Pacific Flyway, a bird migration route that spans from Canada to Mexico, the Bay supports many migratory and year-round bird species. The estuary is designated as a Western Hemisphere Shorebird Reserve Network of international importance, with more than one million shorebirds using regional wetlands each winter. Between 300,000 and 900,000 shorebirds pass through San Francisco Bay during spring and fall migration periods. More than 50 percent of the diving ducks in the Pacific Flyway winter in the shallow wetlands of the Bay, and several species breed in regional wetlands during the summer.

The City of Alameda is located in the Bay Area-Delta Bioregion, as defined by the State's Natural Communities Conservation Program.⁶ This bioregion consists of a variety of natural communities, including shoreline areas that range from the open waters of San Francisco Bay and Delta to salt and brackish marshes, as well as upland habitats that include grassland, chaparral, and oak woodlands. The area has a Mediterranean climate with dry, hot summers and cool, wet winters. The high diversity of vegetation and wildlife found in the region is a result of soil, topographic, and

⁶ A bioregion is an area defined by a combination of ecological, geographic, and social criteria and consists of a system of related interconnected ecosystems. The Bay-Delta bioregion is considered the immediate watershed of the Bay Area and the Delta, not including the major rivers that flow into the Delta. It is bounded on the north by the northern edge of Sonoma and Napa Counties and the Delta and extends east to the edge of the valley floor; on the south, it is bounded by the southern edge of San Joaquin County, the eastern edge of the Diablo Range, and the southern edge of Santa Clara and San Mateo Counties.

microclimate variations that combine to promote relatively high levels of endemism.⁷ This, in combination with a long history of uses that have altered the natural environment and the increasingly rapid pace of development, has resulted in some flora and fauna becoming threatened or endangered.

Much of the northwestern portion of Alameda was historically covered with wetlands that were part of the once-extensive system of wetlands that ringed the Bay. The majority of these lands were previously reclaimed with fill, starting in the 1880s, and urban development has occupied this area of the City for over a century. Wetlands still remain in parts of the City, though repeated filling has moved the tidal wetlands progressively toward the Bay, away from their original, pre-European-settlement location. Today the island community includes about 579 acres of wetlands and grassy, ruderal areas, and 413 acres of open water.

Most of the land in Alameda has been developed with urban uses, so much of the valuable biological habitat that remains is associated with the shoreline areas and water habitats that surround the City, as described in more detail below.

Aquatic Habitats

As an island community, Alameda is surrounded by aquatic habitats, including open water, intertidal habitat, and subtidal habitat. For purposes of this discussion, seasonal wetlands and salt marsh are also considered aquatic habitats.

Open Water Habitat

Alameda is surrounded by the open waters of Central San Francisco Bay. The San Francisco Bay-Delta is an important wintering and stop-over site for the Pacific Flyway. More than 300,000 wintering waterfowl use the region and associated ponds. Bird types that use the open waters of the Central Bay include diving birds, which feed in deeper water on benthic invertebrates; dabblers, which feed in the upper water column of shallow subtidal areas; piscivores, which feed on fish; and opportunistic predators.

Open water is also found in the Oakland-Alameda Estuary that separates Alameda Island from the mainland. The Oakland-Alameda Estuary, which is hydrologically connected to San Francisco Bay, was originally a tidal slough, but was dredged in the mid- to late 1800s to create a viable port and shipping channel. The estuary is influenced by both freshwater and marine water, receiving regular freshwater inflow from a combination of natural creeks, human-made stormwater drainage facilities, and from direct surface runoff after precipitation events. The estuary is also influenced by the marine waters of the Bay and is subject to tidal currents. Sediment from Oakland's shoreline and creeks is carried by the tidal current to shoals and sandbars, causing siltation of the nearby shipping channels. The open waters in the estuary are typical of San Francisco Bay waters in general and have primarily silty mud and sand substrates that are naturally no more than 25 feet deep,

⁷ Endemism refers to the degree to which organisms or taxa are restricted to a geographical region or locality and are thus individually characterized as endemic to that area.

although dredging operations to facilitate shipping operations in the Oakland-Alameda Estuary may increase water depth to more than 50 feet.

While Alameda Island is largely urbanized, the waters surrounding the island support a variety of marine waterfowl. Unvegetated open waters surrounding the City provide refuge and foraging habitat for a variety of resident and migratory birds. Typical marine birds regularly inhabiting or found in the open waters around Alameda include cormorants (*Phalacrocorax* spp.), western gull (*Larus occidentalis*), California gull (*L. californicus*), western grebe (*Aechmophorus occidentalis*), and California brown pelican (*Pelecanus occidentalis californicus*). Among the diving benthivores guild, canvasback (*Aythya valisineria*), greater scaup (*A. marila*), lesser scaup (*A. affinis*), and surf scoter (*Melanitta perspicillata*) are common in Bay waters.

Birds common to the Oakland-Alameda Estuary on the northern side of Alameda island include Canada goose (*Branta canadensis*), American coot (*Fulica americana*), northern shoveler (*Anas clypeata*), common goldeneye (*Bucephala clangula*), American wigeon (*Anas americana*), mallard (*Anas platyrhynchos*), bufflehead (*Bucephala albeola*), doublecrested cormorant (*Phalacrocorax auritus*), California brown pelican (*Pelecanus occidentalis*), double-crested cormorant (*Phalacrocorax auritus*), podiceps grebes, great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), and a variety of gulls (*Larus* spp.).

San Francisco Bay and the Oakland-Alameda Estuary support a wide variety of fishes, including special-status species such as Central California Coast (CCC) steelhead Distinct Population Segment (DPS) (*Oncorhynchus mykiss*), Central Valley fall/late-fall run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*), and the southern DPS of North American green sturgeon (*Acipenser medirostris*). Three species of pelagic (i.e., open water) fish account for 99 percent of the total abundance of fish regularly sampled in both the deep water and shallow areas of the Central Bay. Northern anchovy (*Engraulis mordax*) is the overwhelming dominant species, accounting for up to 94 percent of those fish inhabiting the water column. Pacific herring (*Clupea pallasii*) and jacksmelt (*Atherinopsis californiensis*) are the second and third most common fish taxa in Central Bay waters, together accounting for an additional 5 percent of the fish sampled on an annual basis. The remaining 30 species collectively account for less than 1 percent of the fish species present annually. Although it is not federally or State protected species, the San Francisco Bay Pacific herring fishery is one of the last remaining commercial fisheries in San Francisco Bay, and is currently suffering significant declines. Because of its commercial importance, the fishery is regulated by the CDFW, and the Pacific herring population and spawning success within the San Francisco Bay are closely monitored. Marine vegetation, such as eelgrass and algae, are the preferred substrate for herring spawning. However, pier pilings, riprap, and other rigid, smooth structures within Bay waters also serve as spawning substrate.

In general, the presence of marine mammals in San Francisco Bay and adjoining waters is related to distribution and presence of prey species and foraging habitat. Additionally, harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) use various intertidal substrates that are exposed at low to medium tide levels for resting and breeding. Although sea lions are rarely documented in the area, harbor seals are known to haul out on Breakwater Island regularly. Other

marine mammals less commonly observed in the San Francisco Bay (and not expected to occur in the waters off Alameda) include gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera noveangliae*), harbor porpoise (*Phocoena phocoena*), northern elephant seal (*Mirounga angustirostris*), Steller sea lion (*Eumetopius jubatus*), and northern fur seal (*Callorhinus ursinus*).

Subtidal Habitat

The subtidal zone, or sublittoral zone, is the region below the intertidal zone and is continuously covered by water. This zone is much more stable than the intertidal zone described below. Temperature, water pressure, and sunlight radiation remain nearly constant. Organisms acquire essential nutrients from the water and grow faster and do not dry out as often as organisms higher on the beach.

Subtidal plants and submerged aquatic vegetation occur throughout Bay waters on both soft and hard substrate. Aquatic vegetation in the project area may include green algae (*Ulva/Enteromorpha* spp.), red algae (*Gracillaria verrucosa*), and plants such as widgeon grass (*Ruppia maritima*) and fennel-leaved pondweed (*Potamogeton pectinatus*), which are common in subtidal habitats. Eelgrass beds are found in the Oakland-Alameda Estuary adjacent to the northern edge of Alameda Point, and in small patches on the south side of Alameda Island near the southeastern terminus of the breakwater. Benthic (i.e., bottom-dwelling) fauna in the open waters of San Francisco Bay and the Oakland-Alameda Estuary, include a large variety of invertebrates, such as polychaetes (i.e., marine worms), crustaceans (e.g., crabs, amphipods, and isopods), mollusks such as clams and mussels, echinoderms (e.g., star fish and sea cucumbers), and fishes such as halibut and sole. Pelagic organisms also are widely observed and include planktonic organisms (e.g., phytoplankton, copepods, and larval animals), crustaceans (e.g., shrimps and mysids), and many bony fish and shark species. These lower taxa provide a prey base for the higher taxa, such as marine mammals and birds, which also are commonly present in this environment.

Intertidal Habitat

Intertidal habitat in San Francisco Bay consists of mudflats, sandy beaches, rocky shores, and riprap that are inundated twice daily. Consisting of fine-grained silts and clays, mudflats support an extensive community of diatoms, worms, and shellfish, as well as algal flora including green algae, red algae, and sea lettuce. Eelgrass can also be a component of mudflats.

During high tides, tidal flats are inundated and provide foraging habitat for a variety of fishes. During low tides, tidal flats are the major feeding areas for many shorebirds. Mobile organisms can avoid desiccation and predation during low tides by migrating to the subtidal zone waters. Although there is little mudflat habitat in Alameda Point because the surrounding waters are generally too deep for bay sediments to be exposed, and the mudflats that do occur are small and fragmented, mudflats around the south shore of Alameda Island and west of Bay Farm Island provide significant foraging habitat.

Riprap is a man-made permanent cover of rock, concrete, or other material, placed for shoreline protection. Riprap absorbs and deflects wave energy and the gaps in between the riprap help slow

water flow, thus reducing shoreline erosion. Riprap is typically unvegetated above the high tide line but may support algae in the intertidal zone. Riprap can provide some, but not all, of the habitat values and functions that naturally occurring rocky shore habitat would provide, including a substrate for marine plant and sessile (i.e., attached on one place) intertidal organisms such as mussels (*Mytilus* sp.) and barnacles. Rocky shore habitat also provides cover for invertebrates such as rock crabs (*Cancer antennarius* and *C. productus*) and for fish such as plainfin midshipmen (*Porichthys notatus*), which are known to seek cover and to spawn under concrete slabs. Subtidal riprap may be used as a refuge and grazing substrate for fishes and other aquatic animals. The marine plants, clams, mussels, barnacles, annelids (segmented worms), and crustaceans inhabiting rocky shore habitat are food sources for larger marine invertebrates, fishes, birds, and marine mammals. Riprap may also be used by terrestrial-based invertebrates and smaller mammals and birds for cover and foraging. Larger birds—such as California brown pelican and double-crested cormorant (*Phalacrocorax auritus*)—may utilize the rock riprap for roosting.

Harbor seals use the tip of Breakwater Island as a haul-out site and forage extensively in the Breakwater Gap area. Although it is not considered a primary haul-out site for San Francisco Bay, Breakwater Island is reportedly the only haul-out site in the central Bay that is accessible to seals throughout the full tidal range. Aerial surveys of seal haul-outs conducted in the mid-1980s to the late 1990s typically counted fewer than 10 seals present at any one time. In the late 1990s harbor seal numbers at Breakwater Island apparently increased and it may have become more important as a winter haul-out for some reason, with 73 seals counted in January 1997 and 20 observed on the breakwater in April 1998.

Breakwater Island supports a large nesting colony of western gulls in central and northern California. In June 1990, 239 western gull nests were counted on Breakwater Island, and a breeding population of 502 western gulls was estimated for the entire NAS Alameda. Breakwater Island also is a roosting site for three cormorant species, at least six gull species, at least eight shorebird species, and at least two species of egrets and herons. A large number of California brown pelicans (*Pelecanus occidentalis californicus*) roost on Breakwater Island during late summer through fall. The colony is the largest roost and the only known night roost in the San Francisco Bay Area. At least 25 species of waterbirds have been documented foraging around the gap between the breakwaters, particularly in its tidal eddies. These species include Forster's tern (*Sterna forsteri*), Caspian tern, five species of grebe, at least seven duck species, at least two loon species, three cormorant species, the mew gull (*Larus canus*), western gull, and the American coot (*Fulica americana*).

Northern Coastal Salt Marsh

There are areas of northern coastal salt marsh located in the Nature Reserve at Alameda Point, the former Alameda Naval Air Station (NAS) located on the western end of Alameda Island. There is a thin, discontinuous strip of northern coastal salt marsh on the northern edge of the Oakland-Alameda Estuary within the Northwest Territories of Alameda Point. Additional areas are present west of Seaplane Lagoon, adjacent to the former runways of Alameda NAS, and in the southwest corner of Alameda Point. Northern coastal salt marsh is also present just east of Bay Farm Island,

within Arrowhead Marsh in the adjacent Airport Channel, at the end of the peninsula occupied by Martin Luther King Jr. Regional Shoreline Park.

Northern coastal salt marsh consists of highly productive, generally low-growing herbaceous perennials. Usually found along sheltered margins of bays, lagoons, and estuaries, this plant community develops a moderate to dense cover. Subject to continuously fluctuating salinity and water levels, northern coastal salt marsh is typically dominated by a low diversity of plants tolerant of saline conditions and regular inundation.

Salt marsh habitat at Alameda Point is dominated by pickleweed and saltgrass, with alkali heath and gumplant (*Grindelia* sp.) also occurring. Characteristic nonnative species within salt marsh at Alameda Point include cranesbill (*Geranium* sp.), red-stemmed filaree (*Erodium cicutarium*), Mediterranean barley (*Hordeum hystrix*), bird's-foot trefoil (*Lotus corniculatus*), red sandspurry (*Spergularia rubra*), and bull thistle (*Cirsium vulgare*), among others.

Both migratory and resident bird species use salt marsh habitat. Resident species like the American avocet (*Recurvirostra Americana*) and black necked stilt (*Himantopus mexicanus*) use northern coastal salt marsh for nesting and breeding, while western sandpiper (*Calidris mauri*), marbled godwit (*Limosa fedoa*), and long-billed dowitcher (*Limnodromus scolopaceus*) are migratory shorebirds that use salt marsh habitat for resting and feeding. The savannah sparrow (*Passerculus sandwichensis*) nests in pickleweed and other halophytes (salt-tolerant plants) in upper marsh and upland transitional zones south of San Leandro and the salt marsh common yellowthroat (*Geothlypis trichas sinuosa*) nests in tidal and nontidal brackish and freshwater marshes and, although neither of these California Species of Special Concern has been recorded nesting in Alameda, potentially suitable nesting habitat for both species occurs in Alameda Point.

Non-breeding birds, including larger shorebirds, swallows, blackbirds, and other species roost in large numbers in salt marsh, while several species of ducks, and in a few locations, herons and egrets, also nest in salt marshes. The California vole (*Microtus californicus*) occurs here as well, and is often the most common small mammal. Salt marshes may also be used by fishes for breeding, rearing, and foraging.

Seasonal and Tidal Wetlands

Seasonal wetlands are interspersed throughout the western half of Alameda Point, primarily adjacent to the former runways of Alameda NAS. Seasonal wetlands are inundated during the wet season and support annual and perennial native and nonnative wetland indicator species, many of which can be found in both seasonal wetland and upland communities. This plant association may not resemble a wetland community during the dry season when some wetland indicator species are dormant and true upland annual grasses and forbs may take their place as the soils dry.

Plant species found in the seasonal wetlands at Alameda Point include nonnatives such as tall fescue (*Festuca arundinacea*), velvet grass (*Holcus lanatus*), Bermuda grass (*Cynodon* sp.), Mediterranean barley, curly dock (*Rumex crispus*), annual bluegrass (*Poa annua*), ryegrass (*Lolium perenne*), bird's-foot trefoil (*Lotus corniculatus*), parentucellia (*Parentucellia viscosa*), scarlet pimpernel (*Anagallis*

arvensis), field madder (*Sherardia arvensis*) and loosestrife (*Lythrum hyssopifolia*). Native species present include common nut-sedge (*Cyperus eragrostis*), Baltic rush (*Juncus balticus*), toad rush (*Juncus bufonius*), bracted popcorn-flower (*Plagiobothrys bracteatus*), Monterey centauray (*Zeltnera muehlenbergii*), wooly marbles (*Psilocarphus* sp.), saltgrass, and arroyo willow (*Salix lasiolepis*).

Though seasonal wetlands found in Alameda Point are of low to moderate quality, they nonetheless offer water, food, and cover for a variety of wildlife. Amphibians such as Sierran treefrog (*Pseudacris sierra*) often occur in seasonal wetlands. Numerous bird species use seasonal wetlands for foraging and nesting; Canada geese (*Branta canadensis*), American avocet (*Recurvirostra americana*), and mallard (*Anas platyrhynchos*) have been observed in the Northwest Territories seasonal wetlands. Mammals commonly present in this habitat include California vole, raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and gray fox (*Urocyon cinereoargenteus*). Seasonal wetlands may also provide foraging opportunities for aerial and ground feeding insectivorous bats.

Wetlands located on the southeast shoreline of Alameda Island at the Elsie D. Roemer Bird Sanctuary are representative of historic tidal wetlands habitat that once covered a large portion of the island. Some of the shoreline area functions as uplands habitat associated with wetlands, places where waterfowl and shorebirds can rest and take refuge. The adjacent mud flats also provide significant habitat for foraging birds.

Across San Leandro Bay from Alameda Island is the Arrowhead Marsh in Martin Luther King Jr. Regional Shoreline Park. Although this wetlands is not a part of Alameda, it is another tidal wetlands ecologically linked with the wetlands of the Bird Sanctuary in Alameda, as well as the tidal and seasonal wetlands at Oakland International Airport and the lagoons and sloughs throughout Bay Farm Island and Alameda Island. The varied wetlands habitats, as well as associated upland and open water areas, interact to form a larger ecological unit. Bird species, for example, may nest in one type of vegetation, forage or court in another, and rest elsewhere. The reduction, loss, or alteration of one habitat can decrease the abundance and diversity of wildlife in others.

Eelgrass

Eelgrass provides a number of important ecosystem functions, including foraging areas and shelter to young fish and invertebrates, food for migratory waterfowl and sea turtles, and spawning surfaces for species such as the Pacific herring. By trapping sediment, stabilizing the substrate, and reducing the force of wave energy, eelgrass beds also reduce coastal erosion. Eelgrass forms the base of a highly productive marine food web. In addition to food, the unique habitat also produces oxygen, improves water quality by filtering polluted runoff, absorbs excess nutrients, stores greenhouse gases like carbon dioxide, and protects shorelines from erosion.

Two separate beds of eelgrass provide distinctive habitat for marine organisms living in the waters off of Alameda. The bed which is southwest of Bay Farm Island is believed to be the richest grass bed left in San Francisco Bay, with respect to the presence of small animals. The grass is long and wide, grows quickly, and dozens of common species are known to be associated with this bed of eelgrass. The endangered least terns are known to forage on herring living in and around this

eelgrass. The second bed of eelgrass off of Alameda is located off of Crab Cove, the cove which stretches between the arm of Ballena Isle and Crown State Beach. Although shorter and growing in shallower water, this bed probably also provides a nursery for fish species upon which the least terns nesting at Alameda Point forage. There are also patches of eelgrass within and near Seaplane Lagoon at Alameda Point and along the northern shore of Alameda Island.

Terrestrial Habitats

The area encompassed by modern-day Alameda Island was historically a combination of shallow bay waters, tidal marshes, and upland habitats. The first documented filling of marshes and bay waters began during the 1890s and continued intermittently through the 1940s. Today, the entire city is largely developed with urban land uses, though small pockets of disturbed habitat remain, including grassland, ruderal, and developed/landscaped.

Grassland

Non-native grassland is generally found in open areas in valleys and foothills throughout coastal and interior California. Within the City of Alameda, grasslands are primarily found in the Northwest Territories of Alameda Point, but they are also found on Ballena Isle and on the northeast shore of Bay Farm Island. This habitat is dominated by non-native grasses and weedy annual and perennial forbs, primarily of Eurasian or Mediterranean origin. Scattered native grass and wildflower species, representing remnants of the original vegetation, may also occur, typically consisting of opportunistic native species adaptable to a variety of conditions. Grasslands in Alameda frequently intergrade with ruderal habitat, described below.

Annual and perennial non-native grasses previously documented in Alameda include tall fescue (*Festuca arundinacea*), velvet grass (*Holcus lanatus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), wild oats (*Avena fatua*), riggut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), ryegrass (*Festuca perenne*), soft chess (*Bromus hordeaceus*), pampas grass (*Cortaderia selloana*), and annual bluegrass (*Poa annua*). Common non-native forbs documented include cranesbill (*Geranium dissectum*), red-stemmed filaree (*Erodium cicutarium*), spring vetch (*Vicia sativa*), cut-leaf plantain (*Plantago coronopus*), English plantain (*Plantago lanceolata*), iceplant (*Carpobrotus edulis*), curly dock (*Rumex crispus*), and field bindweed (*Convolvulus arvensis*). Although this habitat is dominated by non-native grasses, native coyote brush (*Baccharis pilularis*), saltgrass (*Distichlis spicata*), pickleweed (*Salicornia pacifica*), and alkali heath (*Frankenia salina*) are also present in some areas.

Grassland habitats, both native and non-native, support reptiles and amphibians such as alligator lizard (*Gerrhonotus* spp.), western fence lizard (*Sceloporus occidentalis*), and Pacific slender salamander (*Batrachoseps attenuatus*), which feed on invertebrates found in this vegetation community, as well as gopher snake (*Pituophis catenifer*) and garter snake (*Thamnophis* spp.).

Grasslands attract seed-eating birds (granivores) such as lesser goldfinch (*Spinus psaltria*), mourning dove (*Zenaida macroura*), and western meadowlark (*Sturnella neglecta*), and insect-eating birds (insectivores) such as barn swallow (*Hirundo rustica*) and black phoebe (*Sayornis nigricans*). Small

grassland rodents attract raptors such as great-horned owl (*Bubo virginianus*), which hunt at night, as well as day-hunting raptors such as red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*), which have all been observed at Alameda Point.

Mammals associated with non-native grassland habitat include striped skunk (*Mephitis mephitis*), Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virginiana*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), house mouse (*Mus musculus*), Botta's pocket gopher (*Thomomys bottae*), black-tailed jackrabbit (*Lepus californicus*), feral dog (*Canis lupus familiaris*), and feral cat (*Felis silvestris catus*). Domestic rabbits (*Oryctolagus cuniculus*) have also been observed at Alameda Point. Grasslands can also be important foraging grounds for bats such as myotis (*Myotis* spp.).

Ruderal

Ruderal vegetation occurs in areas that have been previously subject to substantial disturbance, such as grading, disking, and cut and fill. Ruderal habitat typically occurs on land where native vegetation has been removed. This habitat, which can be found throughout Alameda, is characterized by opportunistic plant species that can easily colonize in such disturbed conditions, and while it may include some native species, it is typically dominated by non-native and often highly invasive species. Non-native grasses that have been documented in Alameda's ruderal habitats include foxtail brome (*Bromus madritensis*), rattail sixweeks grass (*Festuca myuros*), ripgut brome (*Bromus diandrus*), wild oat (*Avena* spp.), and soft chess (*Bromus hordeaceus*). Ruderal areas also support numerous non-native forbs and other plants, including prickly lettuce (*Lactuca serriola*), sour clover (*Melilotus indicus*), fennel (*Foeniculum vulgare*), ice plant (*Carpobrotus edulis*), California burclover (*Medicago polymorpha*), redstem filaree (*Erodium cicutarium*), prickly ox-tongue (*Helminthotheca echioides*), bull mallow (*Malva nicaeensis*), English plantain (*Plantago lanceolata*), Italian thistle (*Carduus pycnocephalus*), stinkwort (*Dittrichia graveolens*), tocalote (*Centaurea melitensis*), rosy iceplant (*Drosanthemum floribundum*), woolly sunflower (*Eriophyllum* sp.), and coyote brush (*Baccharis pilularis*).

Ruderal areas provide limited foraging or nesting habitat for a few birds and small mammals. Birds commonly found in such areas are seed-eating and include non-native species such as English sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), as well as birds native to the area, such as black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), yellow-rumped warbler (*Setophaga coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), lesser goldfinch (*Spinus psaltria*), Brewer's blackbird (*Euphagus cyanocephalus*), horned lark (*Eremophila alpestris*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferous*), and rock pigeon (*Columba livia*). Other common wildlife that might forage or inhabit the ruderal vegetation in Alameda would be urban in nature and tolerant to human activity and disturbance, including species such as striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), Botta's pocket gopher (*Thomomys bottae*), and other small rodents. The western fence lizard (*Sceloporus occidentalis*) is also frequently found in ruderal habitats. Wildlife utilizing nearby higher quality habitats may also forage and occasionally nest within ruderal areas.

Depending on the prey base, ruderal habitat can support a variety of predators, including snakes, various raptors, and red fox (*Vulpes vulpes*).

Developed/Landscaped

The City of Alameda is primarily a developed community, with its land occupied by buildings, roads, parking lots, paved areas, and other developed facilities, as well as adjacent landscaped or heavily disturbed areas. Vegetation in these areas consists mostly of non-native species as described in ruderal and non-native grassland habitats, above, as well as landscape plants. Urban and developed areas tend to be landscaped with non-native plant species, including hedges and trees, such as London plane tree (*Platanus x acerifolia*), sweetgum (*Liquidambar styraciflua*), eucalyptus (*Eucalyptus* sp.), peruvian pepper tree (*Schinus molle*), Monterey cypress (*Hesperocyparis macrocarpa*), blackwood acacia (*Acacia melanoxylon*), coast redwood (*Sequoia sempervirens*), Italian stone pine (*Pinus pinea*), Monterey pine (*Pinus radiata*), poplar (*Populus* sp.), and many others.

Developed and landscaped areas provide little habitat for wildlife, but hedges, shrubs, and ornamental trees support nesting birds tolerant of human activity, such as house sparrow (*Passer domesticus*) and house finch (*Carpodacus mexicanus*). Other common urban bird species include rock pigeon (*Columba livia*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), and western scrub jay (*Aphelocoma californica*). Wildlife species in urban areas must also be able to tolerate the presence of humans and their activities. These species are typically generalists, capable of utilizing the limited food sources available, such as garbage and horticultural plants and their fruit. They include raccoons, Norway rat, Virginia opossum, and feral cats. Several exceptions to the generalist rule are red-tailed hawk, which prey on rodents, and Cooper's hawk (*Accipiter cooperii*) and peregrine falcon (*Falco peregrinus anatum*), which prey almost exclusively on small- to medium-sized birds. Bats may colonize abandoned buildings located throughout Alameda Point.

Special-Status Species

A number of species known to occur within Alameda are protected pursuant to federal and State endangered species laws, or have been designated as Species of Special Concern by the CDFW. In addition, Section 15380(b) of the *CEQA Guidelines* provides a definition of rare, endangered, or threatened species that are not included in any listing, but whose "survival and reproduction in the wild are in immediate jeopardy" (endangered) or which are "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens" or "is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the Federal Endangered Species Act." Species recognized under these terms are collectively referred to as "special-status species." For the purpose of this evaluation, special-status species include:

1. Species listed or proposed or that are candidate species for listing as threatened or endangered by the USFWS under the federal Endangered Species Act (50 CFR Parts 17.12

- [listed plants], 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]);
2. Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (most recent is 81 FR 87246, December 2, 2016);
 3. Species listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (14 Cal. Code Regs. 670.5);
 4. Species formerly designated by the USFWS as species of concern or species designated by the CDFW as species of special concern;⁸
 5. Species designated by the State as “special animals;”
 6. Species designated by the State as “fully protected” (there are about 35 species designated by the State as fully protected, most of which are also listed as either endangered or threatened);⁹
 7. Raptors (birds of prey), which are specifically protected by California Fish and Game Code Section 3503.5, thus prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs;
 8. Non-listed fish species included in federally-identified Essential Fish Habitat (EFH, defined below) and of regional importance for harvest;
 9. Species managed and regulated under the federal Magnuson-Stevens Fisheries Act (Magnuson-Stevens Act or MSA);
 10. Species protected under the federal Marine Mammal Protection Act (MMPA);
 11. Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 *et seq.*);
 12. Species that meet the definitions of rare and endangered under CEQA. *CEQA Guidelines* Section 15380 provides that a plant or animal species may be treated as rare, threatened, or endangered even if not on one of the official lists (*CEQA Guidelines*, Section 15380); and,
 13. Plants considered by the CNPS to be “rare, threatened, or endangered in California” under the California Rare Plant Ranking system (CRPR) which include Rank 1A, 1B, 2A, and 2B as well as Rank 3 and 4 plant species.

The list of special-status plant and animal species that have the potential to occur within the City of Alameda and vicinity, presented in Appendix B, was compiled from data contained in the California Natural Diversity Database (CNDDDB) maintained by CDFW; the Special Animals List maintained by

⁸ A California species of special concern is one that: has been extirpated from the State; meets the State definition of threatened or endangered but has not been formally listed; is undergoing or has experienced serious population declines or range restrictions that put it at risk of becoming threatened or endangered; and/or has naturally small populations susceptible to high risk from any factor that could lead to declines that would qualify it for threatened or endangered status.

⁹ “Fully protected” species are listed in California Fish and Game Code Sections 3511, 4700, 5050, and 5515.

CDFW; the USFWS list of Federal Endangered and Threatened Species that are known or believed to occur within Alameda County; and the CNPS Inventory of Rare and Endangered Plants for the Oakland East, Oakland West, and San Leandro U.S. Geological Survey 7.5-minute topographical quadrangles. Table BIO-2 lists those wildlife species included in Appendix B that have been previously observed in Alameda or were determined to have a moderate to high potential to occur in the City. Table BIO-2 was compiled from the biological assessments presented in EIRs or other environmental studies previously published by the City of Alameda. No special-status plant species have been observed in the City during previous biological assessments, nor was suitable habitat for special-status plant species identified. Each of the species listed in Table BIO-2 and their potential for occurrence is described below.

Green sturgeon (*Accipinser medirostris*). The southern Distinct Population Segment (DPS) of green sturgeon is a federal threatened species and a California Species of Special Concern. This anadromous fish is the most widely distributed member of the sturgeon family and the most marine-oriented of the sturgeon species. Green sturgeons range in the nearshore waters from Mexico to the Bering Sea and are common occupants of bays and estuaries along the western coast of the United States. Adults in the San Joaquin Delta are reported to feed on benthic invertebrates including shrimp, amphipods and occasionally small fish while juveniles have been reported to feed on opossum shrimp and amphipods. Adult green sturgeons migrate into freshwater beginning in late February with spawning occurring in March through July, with peak activity in April and June. After spawning, juveniles remain in fresh and estuarine waters for one to four years and then begin to migrate out to the sea. The upper Sacramento River has been identified as the only known spawning habitat for green sturgeon in the southern DPS. However, the entire San Francisco Bay has been designated as critical habitat for the species and there is some potential for green sturgeon to occur in the waters surrounding Alameda.

Central California coast coho salmon (*Oncorhynchus kisutch*). The Central California coast coho salmon is a federally listed threatened and State-listed endangered Evolutionarily Significant Unit (ESU). Adult coho migrate through San Francisco Bay after heavy late fall or winter rains to spawn in the Sacramento/San Joaquin Delta. Juvenile coho potentially occur in San Francisco Bay in the spring, summer, and fall. They may be present in waters surrounding Alameda in low numbers. The City of Alameda is outside of designated critical habitat for Central California Coast coho salmon, which includes the waters of San Francisco Bay north of the Bay Bridge.

Table BIO-2
Special-Status Wildlife Species Known to Occur or Likely to Occur in Alameda

Common Name	Scientific Name	Status ¹
FISH		
Green sturgeon	<i>Acipenser medirostris</i>	FT, CSC
Central California coast coho salmon	<i>Oncorhynchus kisutch</i>	FT, CE
Central California coastal steelhead	<i>Oncorhynchus mykiss</i>	FT, CT
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	FT, CT
Sacramento River winter-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FE, CE
Central Valley spring-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FT, CT
Longfin smelt	<i>Spirinchus thaleichthys</i>	FC, CT
Pacific herring	<i>Clupea pallasii</i>	CSC
Central Valley fall/late fall-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	CSC
MAMMALS		
Pacific harbor seal	<i>Phoca vitulina richardii</i>	MMPA
California sea lion	<i>Zalophus californianus</i>	MMPA
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	CSC
BIRDS		
California least tern	<i>Sterna antillarum browni</i>	FE, CE
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	FT, CSC
White-tailed kite	<i>Elanus caeruleus</i>	CSC
Burrowing owl	<i>Athene cunicularia</i>	CSC
Great horned owl	<i>Bubo virginianus</i>	CP
Red-tailed hawk	<i>Buteo jamaicensis</i>	CP
Red-shouldered hawk	<i>Buteo lineatus</i>	CP
Northern harrier	<i>Circus cyaneus</i>	CSC
Snowy egret	<i>Egretta thula</i>	CSA
California horned lark	<i>Eremophila alpestris actia</i>	CSA
American kestrel	<i>Falco sparverius</i>	CP

Common Name	Scientific Name	Status ¹
Caspian tern	<i>Sterna caspia</i>	CSA
Loggerhead shrike	<i>Lanius ludovicianus</i>	CSC
California gull	<i>Larus californicus</i>	CWL
Alameda song sparrow	<i>Melospiza melodia pusillula</i>	CSC
Peregrine falcon	<i>Falco peregrinus</i>	CP
California brown pelican	<i>Pelecanus occidentalis californicus</i>	CP
Cooper's hawk	<i>Accipiter cooperi</i>	CP
Great egret	<i>Ardea alba</i>	CSA
Great blue heron	<i>Ardea herodias</i>	CSA
Osprey	<i>Pandion haliaetus</i>	CWL
Double-crested cormorant	<i>Phalacrocorax auritus</i>	CWL
California black rail	<i>Laterallus jamaicensis coturniculus</i>	CT
California Ridgway's rail	<i>Rallus obsoletus obsoletus</i>	FE, CE
INSECTS		
Monarch butterfly	<i>Danaus plexippus</i>	FPT, CSA

Notes:

- | | |
|--|---|
| ¹ FE – Federal Endangered | CE – California Endangered |
| FT – Federal Threatened | CT – California Threatened |
| MMPA – Protected under
Marine Mammal Protection Act | CSC – California Species of Special Concern |
| FPT – Federal Proposed Threatened | CP – California Protected |
| | CSA – California Special Animals List |
| | CWL – California Watch List |

Central Valley and Central California coastal steelhead (*Oncorhynchus mykiss*). Steelhead populations in the Central California Coast ESU are listed as threatened under FESA and Central Valley DPS are listed as threatened under FESA and CESA. Steelhead possess the ability to spawn repeatedly, maintaining the mechanisms to return to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in fresh water prior to migrating to the ocean as smolts. Central Valley steelhead migrate through Central Bay waters between freshwater spawning and rearing areas in the Central Valley and the Pacific Ocean, and may occasionally occur seasonally in the waters around Alameda during migration. The City is outside of critical habitat for Central Valley steelhead, which includes the waters of San Francisco Bay north of the Bay Bridge. Central California coastal steelhead have small spawning runs in south Bay creeks, Alameda Creek, and, possibly San Leandro Creek. Fish migrating to and from these spawning grounds may also occur in project area waters.

Critical habitat for Central California coastal steelhead includes all river reaches and estuarine areas accessible to steelhead in coastal river basins, from the Russian River to Aptos Creek (inclusive), and the drainages of San Francisco and San Pablo Bays. Also included are adjacent riparian zones, all waters of San Pablo Bay west of the Carquinez Bridge, and all waters of San Francisco Bay to the Golden Gate. Therefore, critical habitat for this DPS includes the waters adjacent to Alameda.

Sacramento River winter-run, Central Valley spring-run, and Central Valley fall/late fall-run Chinook Salmon (*Oncorhynchus tshawytscha*). The population of Chinook salmon in San Francisco Bay is comprised of three distinct races: winter-run, spring-run, and fall/late fall-run. These races are distinguished by the seasonal differences in adult upstream migration, spawning, and juvenile downstream migration. Chinook salmon are anadromous fish, spending three to five years at sea before returning to fresh water to spawn. These fish pass through San Francisco Bay waters to reach their upstream spawning grounds. In addition, juvenile salmon migrate through the Bay en route to the Pacific Ocean.

Sacramento River winter-run Chinook salmon, listed as both State and federally endangered, migrate through San Francisco Bay from December through July with a peak in March. Spawning is confined to the mainstem Sacramento River and occurs from mid-April through August. Juveniles emerge between July and October, and are resident in their natal stream for five to ten months followed by an indeterminate residency period in estuarine habitats. Adult winter-run Chinook salmon can be found in San Francisco Bay beginning November through December.

The State and federal-listed threatened Central Valley spring-run Chinook salmon migrate to the Sacramento River from March to September with a peak spawning period between late August and October. Juvenile salmon emerge between November and March, and are resident in streams for a period of 3 to 15 months before migrating to downstream habitats. Adults are found in San Francisco Bay during the migratory period in the spring, and juveniles have the potential to inhabit the Bay in the fall, winter, and spring. Spring-run chinook may occur in the waters around Alameda in low numbers.

The Central Valley fall/late fall-run Chinook salmon is a California Species of Special Concern. These salmon enter the Sacramento and San Joaquin Rivers from June through December and spawn from October through December, with a peak in November. Adult and juvenile (smolts) winter-run, spring-run, and fall-run Chinook salmon may occasionally occur in waters adjacent to the City during migrations between the Pacific Ocean and upstream freshwater spawning habitat. Critical habitat for winter-run and spring-run chinook includes all waters of San Francisco Bay north of the Bay Bridge. Therefore, the project area is outside designated critical habitat for these taxa.

Longfin Smelt (*Spirinchus thaleichthys*). The longfin smelt is a State-listed endangered species and a candidate being considered for listing as endangered or threatened by the USFWS. The longfin smelt is a pelagic (living in open water) schooling fish known to inhabit the San Francisco Bay-Delta, including all of the waters of the Central Bay including the waters adjacent to Alameda. Although observed in Central San Francisco Bay waters throughout the year, longfin smelt migrate to the

fresher water of the Delta to spawn in the winter, returning to bay waters in late spring. No critical habitat has been designated for this species.

Pacific herring (*Clupea pallasii*) is neither a protected species under the FESA or CESA nor a managed fish species under the Magnuson-Stevens Act. Pacific herring does, however, represent a Species of Special Concern for San Francisco Bay since it is an important member of the San Francisco Bay marine ecosystem; provides an important food source for marine mammals, sea birds, and fish; and constitutes a state fishery that is entirely conducted within an urban estuary, making it particularly susceptible to anthropogenic impacts. As a state fishery it is regulated under Sections 8550-8559 of the California Fish and Game Code.

The species is both a popular sport fish and a commercially important species. The Pacific herring is a small schooling marine fish that enters estuaries and bays to spawn. This species is known to spawn along the Oakland and San Francisco waterfronts and attach its egg masses to eelgrass, seaweed, and hard substrates such as pilings, breakwater rubble, and other “hard surfaces”. An individual can spawn only once during the season, and the spent female returns to the ocean immediately after spawning. Spawning usually takes place between October and March with a peak between December and February. After hatching, juvenile herring typically congregate in San Francisco Bay during the summer and move into deeper waters in the fall. Pacific herring may be present in the waters surrounding Alameda and may spawn there in some years.

Harbor seal (*Phoca vitulina richardii*). The harbor seal is a year-round resident in San Francisco Bay and is routinely seen in Bay waters. Harbor seals are protected under the Marine Mammal Protection Act. They have been observed as far upstream in the Delta and Sacramento River as the City of Sacramento, though their use of the habitat north of Suisun Bay is irregular.

Harbor seals feed in the deepest waters of the bay, with the region from the Golden Gate to Treasure Island and south to the San Mateo Bridge being the principal feeding site. Harbor seals feed on a variety of fish, such as perch, gobies, herring, and sculpin. Harbor seals use Breakwater Island, adjacent to Seaplane Lagoon at Alameda Point, as a haul-out but this area is not expected to be used for pupping. These seals move through, and may also forage in, adjacent waters.

California sea lion (*Zalophus californianus*). Like the harbor seal, the California sea lion is a permanent resident in the San Francisco Bay-Delta and protected by the Marine Mammal Protection Act. A common, abundant marine mammal, they are found throughout the West Coast, generally within 10 miles of shore. They breed in Southern California and the Channel Islands, after which they migrate up the Pacific coast to the bay. They haul out on offshore rocks, sandy beaches, and onto floating docks, wharfs, vessels, and other man-made structures in the bay and coastal waters of the State. California sea lions feed on a wide variety of seafood, mainly squid and fish and sometimes clams. California sea lions may occasionally forage in the waters around Alameda.

Townsend’s big-eared bat (*Corynorhinus townsendii*). Townsend’s big-eared bat is distributed along the Pacific coast from British Columbia south to central Mexico and east into the Great Plains, with isolated populations occurring in the central and eastern United States. It has been reported in a

wide variety of habitat types ranging from sea level to over 7,000 feet elevation. Habitat associations include coniferous forests, mixed mesophytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. While its distribution is strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines, the species has also been reported to utilize buildings, bridges, rock crevices, and hollow trees as roost sites. Over 90 percent of the species' diet consists of moths. The species has been reported along the northern Alameda Island shoreline roosting in buildings and may occur elsewhere in the City, most likely only on a transient basis.

California least tern (*Sternula antillarum browni*). California least tern is federally and State-listed as endangered and is also a state Fully Protected species. The California least tern is the smallest tern in North America and it forages over open water or protected bays, skimming low over the water or diving for small fish. The California least tern breeds on sandy beaches along the coast of California south to Mexico, and winters in Mexico, Central America, and south to South America. The majority of current nesting colonies and the population are found in southern California, with smaller populations in the San Francisco Bay Area and in Baja California. The California least tern was first documented nesting at the former NAS Alameda in 1976, while the air station and its runways were still active. Since that time and the closure of NAS Alameda, the colony has grown to be the largest in the San Francisco Bay Area. The majority of least terns typically arrive at Alameda by late April. Least terns nest almost entirely within the fenced tern colony on the Federal Property at Alameda Point, with the exception of occasional instances of terns attempting to nest outside of the fenced area. Terns also fledge to and roost outside of the fenced colony. Least terns use the adjacent open waters of San Francisco Bay, nearby Seaplane Lagoon, and the Oakland-Alameda Estuary for foraging. Tern foraging primarily occurs in the waters south and west of the colony.

Western snowy plover (*Charadrius alexandrinus nivosus*). The western snowy plover, a federally listed threatened species and a California Species of Special Concern, breeds primarily on coastal beaches from southern Washington to southern Baja California. The species breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. Snowy plover use areas with wide, sandy, dune-backed beaches for roosting and foraging during the nonbreeding season. This species forages above and below the mean high waterline, typically gathering food from the surface of the sand, wrack line, or low foredune vegetation. Snowy plover have been observed in past years on Bay Farm Island near the Oakland Airport; the last recorded observation was in 1979. Western snowy plovers were also observed nesting within the California least tern colony at Alameda Point in the early 1980s. Since then, western snowy plovers have been observed occasionally within the Federal Property during bird count surveys.

Suitable nesting habitat is located within the California least tern colony and other tarmac areas at Alameda Point, and suitable foraging habitat occurs in the intertidal mudflats of the Runway Wetland and the West Beach Landfill Wetland. Given the occurrences within the Federal Property

and presence of suitable habitat, the western snowy plover is likely to continue to use the Federal Property as an occasional stopover site during migration, and potentially, as a nesting location.

White-tailed kite (*Elanus caeruleus*). The white-tailed kite is a California Species of Special Concern. This species forages in wetlands and open brushlands, usually near water and streams. Oak woodlands, valley oak or live oak, or trees along marsh edges are used for nesting sites. The nest made by this species is a frail platform of sticks, leaves, weed stalks, and similar materials located in tree or bush. A combination of habitats is essential, including open grasslands, meadows or marshes for foraging, and isolated dense topped trees for perching and nesting. The destruction of wetlands is a primary threat to this species. The Alameda County Breeding Bird Atlas shows few breeding locations for this species near San Francisco Bay. However, white-tailed kites have successfully nested in a light industrial neighborhood near Arrowhead Marsh in Oakland and they could nest in mature trees at Alameda Point.

Burrowing owl (*Athene cunicularia*). The burrowing owl, a California Species of Special Concern, is a small, semi-fossorial (burrowing) bird of prairie and grassland habitats. Burrowing owls in the western United States rarely dig their own burrows, but take over burrows dug by ground squirrels. Burrowing owls are generally found in open country including annual and perennial grasslands, open agricultural areas, deserts, and vacant lots. Burrowing owls are able to adapt to some human altered landscapes, including the perimeters of agricultural fields, irrigation ditches, fallow agricultural fields, open fields prepared for development, airports, golf courses, military bases, and parks. These owls can be found adjacent to San Francisco Bay on levees next to salt ponds, open unmanicured grasslands, or manicured fields near the Bay's edge where ground squirrel numbers and foraging area are adequate. These birds are primarily terrestrial predators and in these locations focus on mice and insects, although burrowing owl have also been documented as a predator of the California least tern at Alameda Point. Burrowing owls were said to have been seen nesting in the grasslands adjacent to the West Beach Landfill (former industrial landfill at Alameda Point) wetlands in the early 1990's and have also been observed on the Federal Property at Alameda Point during the winter months as recently as 2012.

Great horned owl (*Bubo virginianus*). This species, like other raptors and birds in general, is protected under California Fish and Game Code Sections 3503 and 3503.5. Great horned owls occur throughout North America and are found in a variety of wooded habitats. These large raptors prey on small to medium-sized mammals such as voles, rabbits, skunks, and squirrels. Great horned owls can often be seen and heard at dusk, perched in large trees. They roost and nest in large trees such as pines or eucalyptus. They often use the abandoned nests of crows, ravens, or sometimes squirrels. Great horned owls may use large trees in the area west of Main Street at Alameda Point for roosting or nesting and may forage over grassland and ruderal habitat at Alameda Point for voles and other small mammals.

Red-tailed hawk (*Buteo jamaicensis*). Red-tailed hawks are commonly found in woodlands and open country with scattered trees. These large hawks feed primarily on small mammals, but will also prey on other small vertebrates, such as snakes and lizards, as well as on small birds and invertebrates. Red-tailed hawks nest in a variety of trees in urban, woodland, and agricultural

habitats and are the most common hawk observed in the urban Bay Area. Although the Alameda County Breeding Bird Atlas does not confirm nesting by this species on Alameda Island, and the species was not documented as nesting there in 2013 the open grasslands and ruderal areas at Alameda Point support a relatively high prey base of small mammals and there are numerous mature trees that provide potential raptor nesting habitat. Red-tailed hawks have been observed roosting in a willow wetland habitat on the southern border of the Northwest Territories at Alameda Point. Red-tailed hawks are protected under Section 3503.5 of the California Fish and Game Code.

Red-shouldered hawk (*Buteo lineatus*). Red-shouldered hawks are another common raptor species, typically found in a variety of woodlands with nearby open areas for foraging. This species has a highly varied diet of small mammals, snakes, lizards, amphibians, small or young birds, and large insects. Red-shouldered hawks build large stick nests in mature trees, including riparian woodland trees and large eucalyptus groves. Large trees within Alameda Point may support breeding, and red-shouldered hawks could forage for small mammals over open space within this area, but none have been documented. Red-shouldered hawk is protected under Section 3503.5 of the California Fish and Game Code.

Northern harrier (*Circus cyaneus*). Northern harriers nest and forage along wet meadows, sloughs, savanna, prairie, and marshes, feeding on small mammals such as California vole and mice. Destruction of marsh habitat is the primary reason for the decline of this species. This species may use wetlands and grasslands at Alameda Point for foraging and nesting.

Snowy egret (*Egretta thula*). Snowy egret feed on small fish, crustaceans, and large insects, in shallow waters or along shores of wetlands or aquatic habitats. San Francisco Bay colonies nest at ground level on *Grindelia humilis*, pickleweed, and most commonly on coyote brush. Nesting colonies of snowy egret are named resources on the California Special Animals List. There is an egret rookery at Bay Farm Island, and another is located at Lake Merritt in Oakland, about a mile north of the City. The species is known to forage at Alameda Point but there are no rookeries documented there.

California horned lark (*Eremophila alpestris actia*). California horned lark was previously listed by the State of California as a Species of Special Concern but is currently on the CDFW watchlist due to a perceived reduction in threat to the species. However, this passerine is still protected under California Fish and Game Code Section 3503, which prohibits the taking or destroying of nests or eggs of nearly all birds. This species is a permanent resident in most of California except the Sierra during winter. It is usually found in open habitat, such as grassland and agricultural areas, where trees and shrubs are absent. This species has been observed from sea level to above treeline in grasslands, deserts, and alpine dwarf-scrub habitat. The horned lark uses grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities for cover from predators. The California horned lark typically nests in dry grasslands and rangelands that provide low, sparse cover (e.g., grazed, mowed, or barren areas without trees and shrubs) between March and July. Foraging habitat includes open grasslands where insects and seeds are abundant. The species has been

documented as nesting in the Northwest Territories and/or the adjacent Federal Property at Alameda Point.

American kestrel (*Falco sparverius*). The American kestrel is a relatively small member of the falcon family that preys on small birds and on mammals, lizards, and insects. The kestrel is most common in open habitats, such as grasslands or pastures. American kestrels nest in cavities, primarily in trees, but may also use buildings for nesting. The species has been confirmed nesting on Alameda Island and may nest in mature trees or buildings at Alameda Point. American kestrels are protected under Section 3503.5 of the California Fish and Game Code.

Caspian tern (*Sterna caspia*). These terns, whose nesting colonies are listed as a sensitive resource on the California Special Animals List, are common to very common along the California coast and at scattered locations inland, from April through early August. They nest in colonies on sandy estuarine shores, on levees in salt ponds, and on islands in alkali and freshwater lakes. Breeding adults often fly substantial distances to forage in lacustrine, riverine, and fresh and saline emergent wetland habitats. Caspian terns nest in the vicinity of the West Wetland and forage in the surrounding waters of the project area.

Loggerhead shrike (*Lanius ludovicianus*). Loggerhead shrike is found throughout California in open habitats, such as grasslands, or occasionally in agricultural fields, using shrubs, trees, posts, fences, and utility lines for perching. Habitats with little to no human disturbance are preferred and edges of denser habitats are sometimes used. Insecticides and habitat loss have caused population decreases for this species. Loggerhead shrike has been documented breeding at Alameda Point and is likely to occur in the Northwest Territories, as well as the Federal Property.

California gull (*Larus californicus*). The California gull, formerly a State Species of Special Concern due to declining numbers in their historical breeding population at Mono Lake, is currently on the CDFW watchlist. Nesting colonies in California are still considered to be of conservation concern by CDFW, even though the species has established large breeding colonies in the San Francisco Bay area, primarily located in the South Bay. The California gull is a medium-sized gull with a yellow bill with a black ring, and yellow legs. The species breeds primarily at lakes and marshes in interior western North America from Canada south to eastern California and Colorado. Birds that breed inland are migratory, most moving to the Pacific coast in winter. More recently, the species has been breeding in large numbers at the salt ponds of south San Francisco Bay. They nest in colonies, sometimes with other bird species. The nest is a shallow depression on the ground lined with vegetation and feathers. The female usually lays 2 or 3 eggs and both parents feed the young birds. California gulls forage in flight or pick up objects while swimming, walking, or wading. They primarily eat insects, fish, and eggs, but also scavenge at garbage dumps or docks. California gulls may have negative effects on other ground-nesting birds and have been found to be significant predators on American avocet, black-necked stilt, and western snowy plover eggs and chicks. California gulls have been observed nesting in the Federal Property at Alameda Point and may also nest in the Northwest Territories.

Alameda song sparrow (*Melospiza melodia pusillula*). The Alameda song sparrow is one of three morphologically distinct song sparrow subspecies that occur in tidal marshes of the San Francisco Bay region. This particular subspecies is endemic to the marshes bordering the Central Bay and is a State species of concern. Intermixed stands of bulrush (*Scirpus* spp.), cattail (*Typha* spp.), and other emergent vegetation provide suitable habitat in brackish marshes. Alameda song sparrows nest in tall tules with local pickleweed. They also frequent tall vegetation along the edges of tidal marshes and forage on mudflats and channel beds exposed at low tide. Alameda song sparrow may use salt marsh habitat in the Northwest Territories and the Federal Property at Alameda Point for nesting and foraging.

Peregrine falcon (*Falco peregrinus*). Listed as Fully Protected under the California Fish and Game Code, the peregrine falcon was removed from the federal list of threatened and endangered species in 1999 and the State list of threatened and endangered species in 2008 due to recovery. The peregrine falcon is found throughout California and is a year-around resident along the Pacific coast. The peregrine is a specialist, preying primarily on mid-sized birds in flight, such as pigeons and doves, though occasionally these birds will take insects and bats. Although typical nesting sites for the species are tall cliffs, preferably over or near water, peregrines are also known to use urban sites, including the Bay Bridge and tall buildings in San Francisco and San Jose, and throughout the Bay Area. Peregrine falcons nest annually on the Fruitvale Bridge between Oakland and Alameda and in other urban sites throughout the Bay Area. Peregrines are also known to use structures at the Port of Oakland for roosting (but are not known to nest there) and are observed regularly within Alameda Point. In recent years, peregrines have been one of the top predators at the California least tern colony during the breeding season.

California brown pelican (*Pelecanus occidentalis californicus*). A State Fully Protected species that was removed from the federal and State lists of threatened and endangered species in 2009 due to recovery, the California brown pelican is found in estuarine, marine subtidal, and marine pelagic waters throughout coastal California. Important habitat for pelicans during the non-breeding season includes roosting and resting areas, such as offshore rocks, islands, sandbars, breakwaters, and pilings. Suitable areas need to be free of disturbance. This species rests temporarily on the water or isolated rocks, but roosting requires a dry location near food and a buffer from predators and humans.

In 1998 a large number of California brown pelican was known to roost on Breakwater Island at Alameda Point during late summer through fall. This was the largest roost, and the only known night roost, in the San Francisco Bay Area at that time. More recently, the California brown pelican was found using Breakwater Island as a winter roosting area. Pelicans forage for small surface-schooling fish, primarily anchovy, in the adjacent Bay waters.

Cooper's hawk (*Accipiter cooperi*). Cooper's hawks range over most of North America and may be seen throughout California, most commonly as a winter migrant. Nesting pairs have declined throughout the lower-elevation, more populated parts of the state. Cooper's hawks generally forage in open woodlands and wooded margins and nest in tall trees, often in riparian areas. Cooper's hawk is known to nest locally in Bay Area urban neighborhoods and five occupied nests

were documented in the April 2013 in Alameda. This species likely forages for avian prey in and around Alameda Point and may nest in mature trees in this area as well, particularly in the vicinity of Main Street. Cooper's hawks are on the CDFW Watchlist and are protected under Section 3503.5 of the California Fish and Game Code.

Great egret (*Ardea alba*). The great egret is a common permanent resident throughout California, except for high mountains and deserts. The species feeds and rests in fresh and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. Great egrets require groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas. Great egret is a State-designated special animal due to declining availability of breeding areas and its rookeries are protected. There is an egret rookery at Bay Farm Island, and another at Lake Merritt in Oakland. The species is known to forage in Alameda Point but there are no rookeries documented there.

Great blue heron (*Ardea herodias*). The great blue heron is a State-designated special animal due to declining availability of breeding areas, and its rookeries are protected. Great blue heron is a year-round resident throughout California, in and around reservoirs, streams, and lakes with trees for nesting. The species is typically a colonial nester. This species forages in slow moving streams with adjacent wetlands, shallow bay waters, and grasslands, feeding on small fish, amphibians, invertebrates, small mammals, and young birds. Great heron rookeries, made up of anywhere from a few to hundreds of nests, are considered a resource of conservation concern by the CDFW due to their general rarity and susceptibility to disturbance. The species has been documented nesting in cypress trees at the Runway Wetland in the southeastern corner of the Federal Property at Alameda Point. The Alameda County Breeding Bird Atlas confirms a nest site with two nests in central northern Alameda Island. The species is protected while nesting under Section 3503 of the California Fish and Game Code.

Osprey (*Pandion haliaetus*). The osprey is a former California Species of Special Concern and nesting osprey are currently on the CDFW Watchlist. Osprey are also protected under Section 3503.5 of the California Fish and Game Code. These large fish-eating raptors can be found around nearly any water body, including salt marshes, rivers, ponds, reservoirs, estuaries, and oceans. Historically, ospreys nested throughout much of California but by the 1960's much of the osprey population declined in central and southern California area. This decline was attributed to human persecution, habitat alteration, and DDT use. The osprey prefers to nest within sight of permanent water and readily builds its nest on manmade structures, such as telephone poles, channel markers, duck blinds, and nest platforms designed especially for it. Ospreys have been successfully nesting in recent years on light stand on a jetty at Seaplane Lagoon.¹⁰

Double-crested cormorant (*Phalacrocorax auritus*). The double-crested cormorant is a former Species of Special Concern in California and its nesting colonies are still considered a resource of

¹⁰ <https://goldengateaudubon.org/blog-posts/ospreys-nest-successfully-alameda-point-4-7/> and <https://alamedasun.com/news/ospreys-reside-alameda-s-seaplane-lagoon>.

conservation concern by the CDFW. A year-round resident along the entire coast of California, the species is fairly common to locally very common along the coast and in estuaries and salt ponds. The species forages mainly on fish, crustaceans, and amphibians. It sometimes feeds cooperatively in flocks of up to 600, often with pelicans, and nests in colonies of a few to hundreds of pairs. There are known breeding colonies within the Bay on Yerba Buena and Alcatraz Islands, as well as the Richmond-San Rafael and Bay Bridges. The species forages and roosts within Alameda Point but is not known to nest there.

California black rail (*Laterallus jamaicensis coturniculus*). The tiny, dark Black Rail is notoriously difficult to see. Its dark colors, broken up by white speckles, help it blend with the deep shadows of dense marshes, where it preys on small invertebrates. Over 90 percent of California black rails are found in the tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays. Smaller populations occur in San Francisco Bay, the Outer Coast of Marin County, freshwater marshes in the foothills of the Sierra Nevada, and in the Colorado River Area. Loss of more than 80 percent of historic tidal marsh habitat, as well as habitat fragmentation and degradation have directly and indirectly impacted this and other tidal marsh breeding species. Due to its small population sizes, the California Black Rail has been listed as a State of California Threatened Species and a Federal Species of Management Concern.

California Ridgway's rail (*Rallus obsoletus*). Ridgway's rail is a chicken-sized bird that rarely flies, preferring to walk or run from disturbance. It is found principally in San Francisco Bay to southern Baja California, within a range of tidally-influenced salt and brackish marshes. It is the largest member of the rail family, *Rallidae*. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, Ridgway's rails typically inhabit salt marshes dominated by pickleweed and Pacific cordgrass (*Spartina foliosa*). Pacific cordgrass dominates the middle marsh zone throughout the south and central Bay. In the north Bay (i.e., Petaluma Marsh, Napa-Sonoma marshes, Suisun Marsh), rails also live in tidal brackish marshes that vary significantly in vegetation structure and composition. California Ridgway's rail is a federal and State-listed Endangered species.

Monarch butterfly (*Danaus plexippus*). These orange and black butterflies make massive migrations from August-October, flying thousands of miles south to winter along the California coast and in central Mexico. Along the way, monarchs stop to feed on flower nectar and to roost together at night and can be found in many open habitats including fields, meadows, weedy areas, marshes, and roadsides. Every fall, the monarch flies to the same overwintering sites and frequently to the same trees. At wintering sites, these butterflies roost in trees and form huge aggregations that may have thousands to millions of individuals. In California, these sites are primarily eucalyptus or Monterey pine groves and the butterfly winters at such sites from about October through February.

Two other types of migration sites are also important to the monarch butterfly: autumnal roost sites and nectaring bivouacs. Autumnal roost sites generally host smaller populations of the monarch, and may be used for only a few weeks or a couple of months in the fall and early winter as the butterfly passes through an area. Nectaring bivouacs often support a consistent flow of the monarch as the butterfly moves to and from cluster sites located elsewhere.

According to the 2002 EIR for Alameda Point, there is a grove of trees in the northern main street neighborhood subarea where monarch butterflies have been observed in fairly dense concentrations in the fall. The grove of trees is a mixture of Monterey pine, stone pine, and eucalyptus. The grove is in a park-like area between houses. The trees are kept trimmed up to the canopy and the understory consists of manicured lawn. The butterfly was thought to be using these trees as autumnal roost sites, rather than overwintering sites, because they were not observed in high densities during the winter months. There is a documented roost site at Chuck Corica Golf Complex on Bay Farm Island. Although the monarch butterfly is not a federal or State-listed species, it is on the California Special Animals List and is proposed for federal Threatened listing.

Other breeding and migratory birds. Alameda Island and surrounding Bay waters provide habitat for a diversity of birds, with some species as year-round residents, other species as winter residents, and still others passing through along the Pacific Flyway during spring and fall migrations. Avian diversity in urbanized areas is highest where relatively large sized, diverse patches of habitat remain, such as at Alameda Point, where trees, shrubs, grasslands, seasonal and tidal wetlands, and buildings provide foraging and nesting habitat for a variety of birds as well as patches of habitat for potential use by migrants as stop-over sites. As previously discussed, most migratory birds are protected from harm by the federal Migratory Bird Treaty Act and nearly all breeding birds in California are protected under California Fish and Game Code Section 3503.

Special-Status Natural Communities

Special-status natural communities are designated by various resource agencies, such as the CDFW, or in local policies and regulations, and are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent or distribution, and are considered threatened enough to warrant some sort of protection. For example, many local agencies in California consider protection of oak woodlands important, and federal, State, and most local agencies also consider wetlands and riparian habitat as sensitive communities. CDFW tracks communities it believes to be of conservation concern through its List of California Terrestrial Communities and the California Natural Diversity Database, and these communities are typically considered special-status for the purposes of CEQA analysis.

Although the CNDDDB lists northern coastal salt marsh, northern maritime chaparral, serpentine bunchgrass grassland, and valley needlegrass grassland as special-status natural communities occurring within the vicinity of Alameda, only northern coastal salt marsh has been documented in the City. It occurs near the southern and southwestern shores at Alameda Point and adjacent to former runways at NAS Alameda. This habitat is also found nearby in Arrowhead Marsh, located adjacent to the northeast shoreline of Bay Farm Island.

Seasonal wetlands, considered sensitive as wetland habitat by the Army Corps of Engineers, CDFW, and San Francisco Bay Regional Water Quality Control Board (RWQCB), are also interspersed throughout the western portion of Alameda Point.

Additionally, certain waters of the U.S. are considered “special aquatic sites” because they are generally recognized as having unique ecological value. Such sites include sanctuaries and refuges, mudflats, wetlands, vegetated shallows, eelgrass beds, and coral reefs. Special aquatic sites are defined by the U.S. EPA and may be afforded additional consideration in the permit process for a project requiring federal agency approvals or covered under federal regulations. Within San Francisco Bay, two sensitive natural communities that are routinely afforded special attention are submerged aquatic vegetation beds, such as eelgrass beds (*Zostera marina*), and native oyster beds (*Ostrea lurida*). These habitats are also designated by the NMFS as Habitat Areas of Particular Concern (HAPC), a subset of Essential Fish Habitat, described below. The HAPC designation is assigned to habitats that are rare, particularly susceptible to human-induced degradation, especially ecologically important, and/or located in an environmentally stressed area.

As previously discussed, eelgrass beds are known to occur off the western, southern, and northern shores of Alameda Island, in several small patches within and near Seaplane Lagoon, and west of Bay Farm Island. Native oyster beds are located on the southern shoreline of Alameda Island, just east of Breakwater Island.

Critical Habitat and Essential Fish Habitat

The USFWS and NMFS designate critical habitat for species that they have listed as threatened or endangered. “Critical habitat” is defined in Section 3(5)(A) of the Federal Endangered Species Act as those lands (or waters) within a listed species’ current range that contain the physical or biological features that are considered essential to the species’ conservation, as well as areas outside the species’ current range that are determined to be essential to its conservation. Critical habitat for green sturgeon and Central California coast steelhead is designated in San Francisco Bay and includes the waters surrounding Alameda.

Additionally, EFH has been designated in the Bay for Pacific groundfish, coastal pelagics, and Pacific Coast salmon, with Fisheries Management Plans (FMP) established for each group. As noted above, several threatened and endangered salmonids have potential to occur in the waters around Alameda. Coastal pelagics in central San Francisco Bay include northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), and jack mackerel (*Trachurus symmetricus*). Pacific groundfish species include English sole (*Parophrys vetulus*), sand sole (*Psettichthys melanostictus*), curlfin sole (*Pleuronichthys decurrens*), Pacific sanddab (*Citharichthys sordidus*), starry flounder (*Platichthys stellatus*), lingcod (*Ophiodon elongatus*), brown rockfish (*Sebastes auriculatus*), Pacific whiting (*Merluccius productus*), kelp greenling (*Hexagrammos decagrammus*), leopard shark (*Triakis semifasciata*), spiny dogfish (*Squalus acanthias*), soupfin shark (*Galeorhinus galeus*), bocaccio (*Sebastes paucispinis*), and cabezon (*Scorpaenichthys marmoratus*).

Jurisdictional Waters

San Francisco Bay and Oakland-Alameda Estuary

San Francisco Bay and the Oakland-Alameda Estuary are considered navigable Waters of the United States; therefore, they are “jurisdictional” waters regulated by the USACE under Section 10 of the

Rivers and Harbors Act up to mean high water and Section 404 of the Clean Water Act (CWA) up to the mean high tide line. These waters are also regulated by the RWQCB as Waters of the State and by the San Francisco Bay Conservation and Development Commission (BCDC), which has jurisdiction over all areas of San Francisco Bay that are subject to tidal action, as well as a 100-foot shoreline band.

Seasonal Wetlands

The seasonal wetlands located in the Northwest Territories and the Federal Property in Alameda Point, previously discussed, are likely considered jurisdictional by the USACE and the RWQCB. These seasonal wetlands occur where water ponds and soils remain saturated during the growing season. Most, if not all, are hydrologically connected to San Francisco Bay through storm drains, which likely provides the nexus for them to be considered subject to USACE jurisdiction under Section 404 of the CWA. There are an estimated 18 acres of seasonal wetlands located on City property in the Northwest Territories of Alameda Point. Other pockets of seasonal wetlands may be located in other locations in Alameda.

Northern Coastal Salt Marsh

As previously described, northern coastal salt marsh occurs in the Nature Reserve at Alameda Point, along the northern shoreline at Alameda Point, west of Seaplane Lagoon, and east of Bay Farm Island. These salt marshes are tidally influenced and are subject to USACE jurisdiction in their entirety under Section 10 of the Rivers and Harbors Act and under Section 404 of the CWA as wetlands adjacent to a traditional navigable water (TNW). These features would also be considered jurisdictional by the RWQCB. While the USACE previously made a Preliminary Jurisdictional Determination of wetlands in Alameda Point in 2013, jurisdictional maps expire after five years, and the acreage of salt marsh and wetlands has likely changed in the interim. Future development that would potentially impact jurisdictional waters would require a new or revised wetland delineation to accurately delineate any potentially jurisdictional wetlands (including any that may only be considered jurisdictional by the State permitting agencies) that could be adversely affected by the development prior to site disturbance.

9.3 Standards of Significance

Appendix G of the *CEQA Guidelines* identifies a number of significant environmental impacts related to biological resources. A project may have a significant biological resources impact if it would include any of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW, USFWS, or NMFS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or NMFS;

- have a substantial adverse effect on State or federally protected wetlands as defined by Section 404 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.¹¹

These standards of significance are adopted for use in this EIR.

9.4 Impacts and Mitigation Measures

The assessment of potential impacts to biological resources identified in this chapter is based on the standards of significance listed in Section 9.3. This section identifies biological impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan. Specific policies (not all supporting Actions listed) in these General Plan elements that would reduce potential impacts to biological resources include the following:

Conservation and Climate Action Element

Policy CC-19 Sea Level Rise Protection. Reduce the potential for injury, property damage, and loss of natural habitat resulting from sea level rise. (See also Policy HS-15).

Actions:

- **Flood Protection Maps.** *Work independently or in cooperation with county and regional agencies to delineate projected inundation zones for years 2070 and 2100 representing sea level as the sea level rise allowance plus mean higher high water consistent with the most up to date guidance from the Ocean Protection Council (OPC) for sea level rise in California.*
- **Contaminated Lands.** *Identify and map lands at risk of inundation from rising ground water and flood inundation.*
- **Land Planning.** *Prioritize areas of little or no flood risk for new flood-incompatible development (i.e. housing and commercial development) in new plans or zoning decisions.*

¹¹ Governor's Office of Planning and Research, *CEQA Guidelines*, Appendix G, Section IV, as amended December 28, 2018.

- **Shoreline Habitat and Buffer Lands.** Identify, preserve and restore existing undeveloped areas susceptible to sea level rise to increase flood water storage which can reduce flood risk, enhance biodiversity, and improve water quality. Maintain and restore existing natural features (i.e. marsh, vegetation, sills, etc.) between new development and the shore to allow for marsh or beach migration.
- **Conservation Easements.** Consider use of conservation easements to maintain private lands for shoreline and beach migration.
- **Nature Based Flood Control Systems.** When designing new flood control systems where none currently exist, prioritize use of nature based flood control systems, such as horizontal levees, marsh lands, or beach restoration.

Policy CC-20 Land Development. Require new development to reduce the potential for injury, property damage, and loss of natural habitat resulting from groundwater and sea level rise.

Policy CC-21 Sea Level Rise Plans. Develop neighborhood shoreline sea level rise protection plans to address increasing sea and groundwater level rise and storm events.

Policy CC-26 Urban Forest. Take actions to maintain and expand the number of trees in Alameda on public and private property to improve public health, reduce pollution, and reduce heat island effects.

Actions:

- **Tree Preservation.** Continue to require and incent the preservation of large healthy native trees and vegetation.
- **New Development and Parking Lots.** Require ample tree plantings in new development and related parking lots.
- **Strengthen Tree Replacement Requirement.** Strengthen the tree replacement requirement for any protected trees removed due to new development or redevelopment.
- **Prioritize Tree Planting.** Invest in tree planting and maintenance, especially in low canopy areas, neighborhoods with under-served or under-represented communities and in areas identified by the Bay Area Greenprint (that uses a variety of factors such as pollution, heat island effects, and vulnerable communities).
- **Resilient Urban Forest.** Support the increase of the tree canopy in Alameda with drought-tolerant, shade-producing, fire-resistant tree species.
- **Public Parks and Lands.** Utilize public parks and public lands, such as Alameda Point, to significantly increase the urban forest.
- **Maintain and Update the City's Master Tree Plan.** Ensure an up-to-date, climate friendly Master Tree Plan that selects drought-tolerant, shade-producing, fire-resistant tree species adapted to Alameda's changing climate. This plan should include:

- *Design of new tree wells to allow better infiltration of stormwater;*
- *Promotion of sidewalk gardens and other sidewalk landscaping;*
- *Expansion of greenery in the public right-of-way and removal of impervious surfaces as feasible;*
- *Strategies to reduce conflicts between trees, tree roots, and other public infrastructure such as sidewalks, overhead lines, and street infrastructure; and*
- *Identification of funding for both expansion and maintenance of the urban forest.*

Policy CC-27 Habitat and Biological Resource Protection and Restoration. Protect and restore natural habitat in support of biodiversity and protect sensitive biological resources to prepare for climate change.

Actions:

- **Wetlands and Marshlands.** *Protect wetlands, seasonal and permanent marshland, riparian habitat and vernal pools from direct and indirect impacts of new and existing development and incorporate those protections in land planning and community design.*
- **De-Pave Park and New Wetlands.** *Identify areas, such as the plan for De-Pave Park at Alameda Point, to increase the amount of wetlands and habitat areas in Alameda.*
- **Submerged Lands.** *Protect aquatic habitat areas, including sensitive submerged tidelands areas, mudflats, and eelgrass beds for nurseries and spawning grounds for fish and other aquatic species.*
- **Permanent Protections.** *Preserve habitat in perpetuity through deed restrictions, conservation easement restrictions, or similar legally enforceable instruments.*
- **Operation and Maintenance.** *Ensure a secure and ongoing funding source for operation and maintenance.*
- **Eelgrass.** *Promote the planting of eelgrass in shallow waters around Alameda to provide habitat and help absorb wave energy.*
- **Information.** *Work with local recreation groups to disseminate information regarding the sensitivity of open space habitat areas and the impacts of motorized craft.*
- **Signs.** *Require the posting and maintenance of signs warning boaters and users of motorized craft as they approach wildlife areas.*
- **Waste Diversion.** *Prevent accumulation of trash in the Bay by collaborating regionally and implementing design solutions throughout Alameda, such as providing clearly-marked, wind-sheltered trash and recycling bins, fish hook and line bins, and sharps bins that are emptied regularly. Post signs and launch efforts such as 'Adopt-a-Drain'*

programs and Marine Alert Systems to empower, educate and raise awareness about the dangers posed from marine waste and other more acute hazards like sewage and oil spills.

Policy CC-28 Alameda Point Wildlife Refuge. Work with the U.S. Department of Veterans Affairs, East Bay Park District (EPRPD), and U.S. Fish and Wildlife to maintain and improve the 550-acre Alameda Point Wildlife Refuge and seasonal Least Tern Colony.

Actions:

- **Refuge Floodplains.** *Increase the area of naturally inundated floodplains and the frequency of inundated floodplain habitat. Restore some natural flooding processes and widen riparian vegetation, where feasible, at the Refuge.*
- **Lighting.** *Ensure that all lighting installations at Alameda Point near the Wildlife Refuge are designed and installed to be fully shielded (full cutoff) to minimize glare and obstructive light and avoid misdirected or excessive illumination.*

Policy CC-29 Alameda Point Marine Conservation, Wildlife and Recreation Area. Partner with regional, state, and federal conservation agencies and volunteer non-governmental organizations to establish and designate a Marine and Wildlife Conservation and Recreation Area to enhance and protect habitat values, ensure safe public access, and foster appreciation of the marine environment south of Alameda Point. Refer to Figure 3-1.

Actions:

- **Mapping.** *Seek funding to visually map the sea bed and rock walls to establish a biological inventory and final boundary for the proposed Conservation Area.*
- **Trash Removal.** *Seek funding for quarterly or semi-annual removal of trash that accumulates on Alameda's rocky shoreline, rock walls or beaches that is detrimental to wildlife.*
- **Signage.** *Seek funding to establish signage on breakwater island that acknowledges this marine formation as the largest night roosting site for California Brown Pelicans in the San Francisco Bay. Restore the historic light beacon at the western end of the breakwater.*
- **Oil Spill Boom.** *Seek funding for a dedicated oil spill boom to be stored at Alameda Point to protect this sensitive habitat area in case of an oil spill on the Bay.*
- **Public Access Structure.** *Seek funding for construction of a safe public access structure on the long rock wall that begins at the beach, which will allow safe fishing and wildlife observation and safe access for trash removal.*

- **Active Recreation.** Partner with non-motorized recreational watercraft organizations to promote safe and responsible enjoyment of this waterway and an appreciation of the marine natural environment.

Policy CC-30 Clean Marinas. Continue to protect water quality and biological resources by ensuring marina operating standards prevent degradation of water quality and maintain full compliance with environmental regulations.

Action:

- **The Clean Marinas Program** requires new marinas to participate in the Clean Marinas Program, which provides a certification program and annual monitoring to ensure the protection of habitat and water quality in proximity to working marinas and boatyards.

Policy CC-31 Crown Memorial State Beach. Work with the EPRPD and other appropriate agencies to improve, protect, and preserve Crown Memorial State Beach and the Alameda Beach as habitat as well as recreational resources.

Policy CC-32 Lagoons. Continue to preserve and maintain all lagoons as natural habitat as well as an integral component of the City's green infrastructure network and flood control system.

Policy CC-33 Green Infrastructure. Protect San Francisco Bay, San Leandro Bay, and the Alameda Oakland Estuary by promoting, requiring, and constructing green infrastructure that improves stormwater runoff quality, minimizes stormwater impacts on stormwater infrastructure, improves flood management, and increases groundwater recharge.

Actions:

- **Green Streets and Infrastructure Plan.** Implement Alameda's Green Infrastructure Plan, the purpose of which is to guide the identification, implementation, tracking, and reporting of green infrastructure projects within the City.
- **Capital Improvement Program (CIP).** Include green infrastructure design elements in the initial design stages of all public CIP project planning efforts. Implement Green Stormwater Infrastructure (GI) design standards, guidance, and typical details, as presented in the City's GI Plan, as feasible and appropriate, for public CIPs, Complete Streets street design processes, and the infrastructure management of stormwater.
- **Open Space.** Utilize and maintain the lagoon systems, public open spaces, wildlife habitat, and other natural areas as integral components of the citywide green infrastructure network.
- **Storm Water Runoff.** Promote the reduction of stormwater runoff into the Bay with the use of pervious materials, retention basins, bioswales and similar methods.

- **Alameda Countywide Clean Water Program.** Continue to remain an active member agency of the Alameda Countywide Clean Water Program (ACCWP) working to control the discharge of pollutants from urban runoff to ensure continued improvement of San Francisco Bay water quality, water quality monitoring, public education, pollution prevention oversight, regional coordination, and the development of technical guidance and pollution prevention tools.
- **Municipal Stormwater Permit.** Continue to comply with the requirements of the Municipal Regional Stormwater NPDES Permit (MRP), issued to the City by the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), to guide the City's efforts to prevent pollutant discharges and to protect Bay water quality.

Policy CC-34 New Development. Promote the preservation of on-site natural elements in new development, when feasible, that contribute to the community's native plant and wildlife species value and to its aesthetic character.

Actions:

- **Preservation of Wetlands.** Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers.
- **Buffers.** Preserve and expand buffers between wildlife habitat and developed areas to ensure the continued viability of the natural habitat and wetlands area, which may include provisions for off-site needs such as upland nesting habitat.
- **Biological Assessments.** Require a biological assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the California Department of Fish and Game or the U.S. Fish and Wildlife Service might be present. Require development to mitigate any unavoidable losses of wetlands or habitat.
- **Water Quality.** Require new development to protect the quality of water bodies and natural drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, green roofs, best management practices and Low Impact Development and hydromodification strategies.
- **Soil Contamination.** Ensure proper remediation of contaminated soils to reduce the risk of current or future exposure from groundwater or sea level rise.
- **Nesting Bird Survey.** Require consultation with a qualified wildlife biologist prior to any construction activities that would remove or disturb large trees during the general bird breeding season (February 1 through August 31) and implement any necessary no-work buffer zones around identified nests in coordination with the California Department of Fish and Wildlife (CDFW).

- **Bat Survey.** *Require consultation with a qualified wildlife biologist prior to any construction activities that would demolish existing buildings or remove large trees, with removal or disturbance of any roosting bats to be performed in coordination with the California Department of Fish and Wildlife (CDFW).*
- **Aquatic Species and Habitats.** *Require consultation with the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) to identify the need for any permits and to identify appropriate measures to protect aquatic species and habitats during any in-water construction requiring pile driving.*
- **Native Oysters and Eelgrass Beds.** *Require a pre-construction eelgrass and native oyster survey prior to any construction activities involving any disturbance to the shoreline or adjacent waters in accordance with guidance provided by the National Marine Fisheries Service (NMFS).*
- **Dredging.** *Require all dredging activity in waters surrounding Alameda to implement Best Management Practices (BMPs) identified in the Long-term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (2001) published by the U.S. Army Corps of Engineers in order to avoid impacts on water quality and avoid degradation of aquatic habitat.*
- **Lighting.** *Ensure that all lighting installations are designed and installed to be fully shielded to minimize glare and obstructive light and avoid misdirected or excessive illumination.*
- **Rooftop Antennas.** *Minimize the number of rooftop antennas and other equipment, and collocate the equipment whenever feasible to reduce risks to wildlife.*
- **Guy Wires.** *Prohibit the use of guy wires to support monopole structures or antennas on buildings, in open areas, and at sports and playing fields and facilities.*

Open Space, Recreation, and Parks Element

Policy OS-1 Parks and Open Space Funding. Secure adequate and reliable funding for the development, rehabilitation, programming and maintenance of parks, community and recreation facilities, trails, greenways, and open space areas.

Actions:

- **Maintenance.** *Monitor parks and open space and recreational facilities on a regular basis and identify those sites that require repair, renovation and/or improvements. Assign high priority to maintenance and renovation of existing parks and facilities.*
- **Assessment Districts.** *Consider establishing neighborhood park assessment districts to fund neighborhood park maintenance and improvements.*

- **Natural Areas.** *Annually consider restoring and preserving natural areas for habitat protection, climate adaptation and passive recreation use such as walking, hiking, and nature study.*

Policy OS-2 Partnerships. Pursue and develop partnerships with federal, regional, and local non-profits, agencies, organizations, and districts to reduce the costs borne by the City of Alameda for the acquisition, construction, operations, and or maintenance of parks, open space, facilities and programs.

Actions:

- **East Bay Regional Park District (EBRPD) Partnerships.** *Continue to support and collaborate with the EBRPD to ensure and protect the benefits of regional parks in Alameda. Collaborate with the EBRPD to develop, operate and maintain facilities and programs at regional parks including Alameda Point, Northwest Regional Shoreline Park, Encinal Beach, Crown Memorial State Beach and Alameda Beach, portions of the Bay Trail, and the Elsie D. Roemer Bird Sanctuary.*
- **Federal Partnerships with the U.S. Veterans Administration and U.S Fish and Wildlife.** *Continue to develop and sustain partnerships with the Veterans Administration and the U.S. Department of Fish and Wildlife to ensure the protection and maintenance of the Wildlife Refuge at Alameda Point.*

Policy OS-12 Wildlife Habitat. Promote the preservation, protection and expansion of wildlife habitat areas, open space corridors, and ecosystems as essential pieces of the overall network and an important contributors to citywide resiliency.

Policy OS-17 Alameda Point Wildlife Refuge and Bay Trail Extension. Partner with the Bureau of Veterans Affairs and the Department of Fish and Wildlife to create a seasonal bay trail along the shoreline of the Wildlife Refuge.

Policy OS-18 De-Pave Park on the Seaplane Lagoon and Bay Trail Extension. Implement the development of the 22-acre western shore of the Seaplane Lagoon as a passive nature park with upland and floating wetlands, educational and interpretive programs, picnic areas, camping opportunities, and nature trails.

PROJECT IMPACTS

Impact 9-1

Construction of new development allowed under the *Alameda General Plan 2040* could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW, USFWS, or NMFS. (LTS)

The City of Alameda supports a variety of special-status bird, fish, and mammal species, as listed in Table BIO-2. The primary areas supporting such species are located along shorelines, in offshore waters, and in and around Alameda Point. The majority of future development and expansion envisioned in the *Alameda General Plan 2040* would be located in or near these sensitive areas. For example, of the 13,000 new jobs projected to be created during the General Plan planning horizon, 10,000 of them are expected to be located in Alameda Point or along the northern shoreline of Alameda Island. Of a projected 5,200 to 6,000 new housing units throughout the City where development sites have been tentatively identified (see Table 3-1), all but 161 units (not including 400 accessory units at unknown locations) would be located in Alameda Point or adjacent to waterfront areas.

Future construction activity associated with the development of new commercial and residential land uses could result in disturbance or mortality of sensitive wildlife species utilizing project areas for foraging and/or nesting/breeding. Nesting and roosting special-status birds, including migratory birds, could be disrupted by construction noise and dust and displaced by the removal of nesting trees, while chicks that haven't yet fledged could be killed and eggs destroyed by disruptive construction activities. While construction-related impacts to special-status birds would be potentially significant, compliance with proposed General Plan Policy CC-34, Action (f) ("Nesting Bird Survey" bullet) would ensure that impacts would be less than significant. Additionally, any new development or redevelopment projects within Alameda Point would be required to implement all applicable Avoidance and Minimization Measures, presented in Table BIO-3, and described in more detail below. These measures would further protect avian species nesting and foraging at Alameda Point.

Shoreline project construction activities requiring in-water work—such as removal or rehabilitation of existing pilings or rip-rap, dredging, dock maintenance, or seawall construction or rehabilitation—could adversely affect water quality through disturbance and resuspension of benthic sediments. Though such disturbance would be temporary, sediment resuspension has the potential to increase the exposure of aquatic wildlife to potentially harmful chemicals sequestered in the sediment, methylmercury in particular. Suspended sediments in the water column can lower levels of dissolved oxygen, increase salinity, increase concentrations of suspended solids, and possibly release chemicals present in the sediments into the water column. Dredging in particular has the potential to release organic or inorganic contaminants in Bay sediments at concentrations high enough to pose a threat to marine biota. The potential effects of suspended sediment within the water column on fish include gill lacerations, increased "coughing" behavior, decreased feeding success, and avoidance behaviors. Construction work requiring the removal or disturbance of in-

water wood pilings treated with the preservative creosote could release other organic compounds that are toxic to marine organisms.

Dredging also has the potential to result in direct mortality of special-status fish, as well as benthic invertebrates, through entrainment. During dredging by clamshell bucket, fish and mobile invertebrates can generally sense the pressure wave that precedes the clamshell bucket traveling through the water column, and can actively avoid the bucket, but the use of hydraulic suction poses greater threat of entrainment of both fish and benthic invertebrates. However, because dredging would be required to comply with the Long Term Management Strategy for dredging in San Francisco Bay, described in Section 9.2 (Regulatory Framework)—including observation of the LTMS work windows, implementation of LTMS BMPs, and consultation with the appropriate resource agencies (NMFS, USFWS, and CDFW)—impacts from dredging activities would be less than significant.

Some shoreline construction projects could require pile driving for structural support or for new piers, which could adversely affect fish and marine mammals in the area. Concrete, wood, and steel piles that are driven within the water column can produce high-intensity noise resulting in damage to soft tissues, such as gas bladders or eyes (barotraumas) and/or result in harassment of fish and marine mammals such that they alter swimming, sleeping, or foraging behavior or temporarily abandon forage habitat. Protected and managed fish species, including salmon, steelhead, longfin smelt, Pacific herring, anchovies, mackerel, sardine, soles, sanddab, green sturgeon, and other bottom fish as well as harbor seal and California sea lion use the waters surrounding Alameda. Uncontrolled impact noise created by pile driving could result in a significant adverse impact on special-status fish and marine mammals, but compliance with proposed General Plan Policy CC-34, Action (h) (“Aquatic Species and Habitats” bullet) would ensure that impacts would remain less than significant.

Increased artificial illumination of Bay waters at night can alter normal swimming and foraging behavior of fish, marine mammals, and seabirds. Many pelagic schooling fish, such as sardines and herring, are attracted to illumination cast by boats and offshore structures and are frequently subject to increased predation from other fish species as well as marine birds and occasional marine mammals. Measures that are often used to minimize impacts of artificial night lighting on birds, fish, and marine mammals include installation of dock lighting that is low to the dock surface; uses low-voltage, sodium, or non-yellow-red spectrum lights; and is well shielded to restrict the transmittance of artificial light over the water. The potential for impacts on special-status species from artificial night lighting on marina and ferry terminal docks would be potentially significant. While compliance with proposed General Plan Policy CC-28, Action (b) (“Lighting” bullet) would ensure that impacts would remain less than significant for development at Alameda Point near the Wildlife Refuge, the policy should be modified to include all shoreline development in Alameda.

These impacts from in-water construction activities were previously identified in the 2013 *Alameda Point Project Environmental Impact Report*¹² and the 2017 *Alameda Marina Master Plan Draft Environmental Impact Report*,¹³ addressing planned and proposed redevelopment at Alameda Point and Alameda Marina, respectively, but much of their analysis is applicable to shoreline development and in-water work throughout Alamedas waterfront areas. Accordingly, pursuant to Section 15150 of the *CEQA Guidelines*, both of these EIRs are hereby incorporated by reference. Additional details on impacts to aquatic species from dredging and in-water construction activities are provided in those EIRs and are applicable to future shoreline development that would be implemented consistent with the *Alameda General Plan 2040*. The proposed General Plan includes policies that incorporate many of the mitigation requirements adopted in those EIRs, which upon adoption of the General Plan will become Citywide requirements. Accordingly, in addition to applying to construction activity at Alameda Point and the Alameda Marina, such policies will apply to future work anywhere in the City that involves any in-water construction work. Both of the EIRs cited above, incorporated by reference, are available for review at the City Planning offices at 2263 Santa Clara Avenue, Room 190, and are available for electronic download via the links provided in the footnote references above for these documents.

It should also be noted that future development within Alameda Point may, depending on its location, be subject to the 2012 Biological Opinion (BO) Avoidance and Minimization Measures (AMMs) issued by the USFWS that were adopted in a Memorandum of Agreement (MOA) between the City and the Veterans Administration as a condition of transferring the former NAS Alameda federal property to the City in 2013. The AMMs include terms and conditions (T&Cs) for reuse that have been incorporated into the Declaration of Restrictions applicable to the various properties at Alameda Point. The biological subareas referenced in the AMMs are depicted on Figure 3-3 of the Alameda Point Project EIR, reproduced here as Figure BIO-1. The BO AMMs in force at Alameda Point are listed in Table BIO-3. Any future development project located within Alameda Point would be required to implement the applicable AMMs for the subarea in which the project is located. Additionally, all new development would be required to comply with proposed General Plan Policy CC-34, Action (c) (“Biological Assessments” bullet), which requires a biological resources assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the California Department of Fish and Game or the U.S. Fish and Wildlife Service might be present, and the implementation of mitigation to mitigate any unavoidable losses of habitat.

In summary, absent appropriate precautions and prevention measures, construction of future development consistent with the proposed *Alameda General Plan 2040* could cause a significant, adverse impact to special-status bird, fish, and mammal species, but compliance with General Plan

¹² City of Alameda, *Alameda Point Project Draft Environmental Impact Report*, SCH No. 2013012043, September 2013. Available for download at: <https://www.alamedaca.gov/files/assets/public/departments/alameda/base-reuse/environmental/alameda-point-draft-eir.pdf>.

¹³ City of Alameda, *Alameda Marina Master Plan Draft Environmental Impact Report*, SCH No.2016102064, December 2017. Available for download at: https://www.alamedaca.gov/files/assets/public/major-planning-projects/alameda-marina-deir-december-2017_1.pdf.

policies CC-28 and CC-34 and applicable supporting actions would ensure that impacts would remain less than significant. Therefore, the proposed General Plan would have a **less-than-significant impact** to special-status bird, fish, and mammal species.

Mitigation Measure 9-1

None required.

Table BIO-3

USFWS Biological Opinion Avoidance and Minimization Measures Incorporated into the Declaration of Restrictions at Alameda Point

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
BO-AMM-5	(1) no development (e.g. marinas or piers) is allowed within the parcel, and (2) City shall not issue permits for any coordinated water-based activities, such as regattas or other activities that may concentrate boating activity within the parcel, during the least tern breeding season (April 1 through August 15). Notwithstanding these prohibitions and restrictions, the City shall be permitted adequate ingress and egress for the purpose of access to and use of the City’s property, and dredging shall not be prohibited.	L through P, R, T
BO-AMM-6a	The First Grantee shall notify existing Occupants of the Restrictions and thereafter these Restrictions shall be incorporated by reference in all deeds and leases of any portion of the Property.	A through K, U, V
BO-AMM-6b and 6c	The City has developed a Predator Management Plan relating to the management and use of Property to be conveyed to the City, which the Service has approved on December 10, 2012. The City shall be responsible for implementing the Predator Management Plan. Such predator management, as described in the Predator Management Plan, shall continue in perpetuity.	A through K, U, V
BO-AMM-6d	Feral cat feeding stations and colonies, and the feeding of any native and nonnative wildlife species that are potential predators of least terns, is prohibited in perpetuity.	A through K, U, V
BO-AMM-7	Lighting shall be allowed as long as the cumulative increase in ambient nighttime light levels within 750 feet of the least tern colony, from VA and City sources, do not increase by more than 10 percent of pre-conveyance levels, as set forth in the Alameda Point California Least Tern Colony Existing Lighting Study, attached hereto as Exhibit 5, with full development of the Northwest	A through K

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
	Territories (“NWT”), Civic Core, and Marina areas, including VA development. The City shall perform a design review for all proposed development within the NWT to ensure that the cumulative increase in ambient nighttime light levels from VA and City sources will not violate this condition, and shall provide lighting requirements to all project applicants.	
BO-AMM-8a	As detailed stormwater management and monitoring plans for the NWT are developed, such plans shall be developed in coordination with the Service and implemented to protect open water foraging areas for least terns. The plans shall be reviewed and approved by the Service contemporaneously with the City environmental review process and prior to development of the project in this area.	A, B
BO-AMM-8b	Prior to any construction within the Regional Park, a Service-approved park management agency will be selected by the City.	A
BO-AMM-8c	No artificial features greater than 20 feet in height shall be constructed with the exception of 25 feet in the Veteran’s memorial plaza area.	A
BO-AMM-8c	The cumulative square footage of buildings associated with the Regional Park in the NWT shall not exceed 4,500.	A
BO-AMM-8c	No tree species capable of growing to greater than 20 feet in height shall be planted in the Regional Park area. Tree and shrub density shall not exceed one tree or shrub per 10,000 square feet. The City shall prepare a palette of shrub and herbaceous vegetation species proposed for planting throughout the Regional Park area. The palette shall be reviewed and approved by the Service prior to the planting of any vegetation in this area.	A
BO-AMM-8c	From April 1 through August 15, nighttime lighting in the Regional Park area shall be limited to the minimum necessary for public safety.	A
BO-AMM-8c	The final Regional Park design/configuration, herbicide/pesticide drift control plan, and landscaping and management plans shall be developed in coordination with the Service. The plans shall be reviewed and approved by the Service prior to any new development in this area.	A
BO-AMM-8d	The Sports Complex fields shall not be lighted for nighttime play from April 1 through August 15, unless proposed lighting in these areas can be designed to ensure that light levels within 750 feet of the least tern colony,	B

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
	from VA and City sources, do not increase by more than 10 percent of pre-conveyance levels.	
BO-AMM-8f	No artificial features greater than 20 feet in height shall be constructed.	B
BO-AMM-8f	The cumulative square footage of buildings associated with the Sports Complex shall not exceed 7,500 square feet or be greater than 20 feet in height. All buildings associated with the Sports Complex area shall be located greater than 200 feet from the southern boundary of the east-west runway.	B
BO-AMM-9a	No new buildings, light posts, vegetation greater than 4 feet in height, landscape turf, or other structures greater than 4 feet in height shall be constructed in this area without prior approval from the Service. The Service shall review all proposed plans to ensure compliance with the 2012 BO.	D
BO-AMM-9b	Any new buildings constructed or extensions of existing buildings shall not exceed the height of the existing buildings.	E, F
BO-AMM-9b	No palm trees shall be allowed in this zone. Within line-of-sight of the existing least tern colony, landscaping shall be restricted to vegetation less than 4 feet in height. In areas outside of the line-of-sight of the existing least tern colony, no tree species capable of growing to greater than 20 feet in height shall be planted and shrubs shall be managed as to not exceed 6 feet in height. The density of trees and shrubs in this area shall not exceed one tree or shrub per 550 square feet. The City shall prepare a palette of tree and shrub species proposed for planting in this area. The palette shall be reviewed and approved by the Service prior to the planting of any trees or shrubs in this area.	E, F
BO-AMM-9b	Light posts in this area 20 feet or greater in height shall contain anti-perching devices, which will be maintained in perpetuity.	E, F
BO-AMM-9c	If Building 19 or the fire house is replaced with a new building, the new building shall not exceed 20 feet in height, not extend farther west and east than the western and eastern most point of the existing building, and not exceed the existing width of the building as measured from north to south.	G
BO-AMM-9c	A new building, not to exceed 20 feet in height, may be constructed just east of Building 19 or may be added on to the fire house provided that the new building/extension is not in direct line-of-sight of any portion of the existing least tern colony.	G

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
BO-AMM-9c	New buildings may have an additional 5 feet of height to accommodate heating/conditioning/ventilation units as long as these units are not within the line of sight of the least tern colony or the units are placed as far back and away from the side of the building facing the tern colony as possible and avian predator perch deterrents are installed and maintained on these units in perpetuity.	G
BO-AMM-9d	Sporting fields within the Civic Core Area shall not be lighted for nighttime play from April 1 through August 15, unless proposed lighting in these areas can be designed to ensure the cumulative increase in ambient nighttime light levels within 750 feet of the least tern colony, from VA and City sources, do not increase by more than 10 percent of pre-conveyance levels.	C through G
BO-AMM-9d	The City shall ensure that all anti-perching devices on light posts proposed for the sporting fields are maintained in perpetuity.	C through G
BO-AMM-10a	No new buildings, light posts, vegetation greater than 4 feet in height, landscape turf, or other structures greater than 4 feet in height shall be constructed. The Service shall review all proposed plans to ensure compliance with the 2012 Biological Opinion.	I
BO-AMM-10b	Building 25 may be reconstructed within the footprint of this zone, but any new building in this zone cannot exceed the height of the existing building (55 feet).	J
BO-AMM-10b	Landscaping shall be restricted to vegetation less than 4 feet in height (no palm trees) within the current line-of-sight portion of the northeast corner of this zone. Within line-of-sight of the existing least tern colony, landscaping shall be restricted to vegetation less than 4 feet in height. In areas outside of the line-of-sight of the existing least tern colony, no tree species capable of growing to greater than 20 feet in height shall be planted and shrubs shall be managed as to no exceed 6 feet in height. The density of trees and shrubs in this area shall not exceed one tree or shrub per 550 square feet. The City shall prepare a palette of tree and shrub species proposed for planting in this area. The palette shall be reviewed and approved by the Service prior to the planting of any trees or shrubs in this area.	J
BO-AMM-10b	Newly constructed buildings and any artificial structures 20 feet or greater in height shall contain anti-perching devices which will be maintained in perpetuity.	J
BO-AMM-10c	No new buildings greater than 20 feet in height shall be constructed in this zone.	K

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
BO-AMM-10c	New buildings may have an additional 5 feet of height to accommodate heating/conditioning/ventilation units as long as these units are not within the line of sight of the least tern colony or the units are placed as far back and away from the side of the building facing the tern colony as possible and avian predator perch deterrents are installed and maintained on these units in perpetuity.	K
BO-AMM-10c	No palm trees shall be allowed in this area. Within line-of-sight of the existing least tern colony landscaping shall be managed as to not exceed 4 feet in height. In areas outside of the line-of-sight of the existing least tern colony no tree species capable of growing to greater than 20 feet in height shall be planted and shrubs shall be managed as to no exceed 6 feet in height. The density of trees and shrubs in this area shall not exceed one tree or shrub per 550 square feet. The City shall prepare a palette of tree and shrub species proposed for planting in this area. The palette shall be reviewed and approved by the Service prior to the planting of any trees or shrubs in this area.	K
BO-AMM-10c	Newly constructed buildings and any artificial structures 20 feet or greater in height shall contain anti-perching devices which will be maintained in perpetuity.	K
BO-AMM-10d	As detailed stormwater management and monitoring plans for the Marina are developed by the City, they shall be developed in coordination with the Service and implemented in perpetuity to protect open water foraging areas for the least tern. The plans shall be reviewed and approved by the Service contemporaneously with the City environmental review process and prior to development of the project in this area.	H through K
BO-AMM-10e	Watercraft exclusion zones will be established and clearly demarcated on submerged lands south of the VA Fed Transfer Parcel and within 300 feet of the breakwater. The only exception to this exclusion zone is the use of a gap in the breakwater by Water Emergency Transportation Authority ferries, which will restrict crossings through this gap to six per day (three ingress and three egresses). The City will place floating signs/buoys along the established boundary with warnings prohibiting boaters from entering the area at any time. The City will also require that signage and educational materials be provided in any marina that is developed within the Seaplane Lagoon to discourage boaters from entering the watercraft exclusion zone. Contracts or leases for boat owners using the Marina Area shall include notification of these restrictions. The contracts shall include conditions that provide for revocation of the contracts or leases if these restrictions	H, M, O, Q through T

AMM Number Designation	Avoidance/Minimization Measure	Applicable Subarea(s) ¹
	are violated. The language within these contracts or leases shall be reviewed and approved by the Service prior to granting any leases or signing any contracts.	
BO-AMM-10f	A no-wake zone during the least tern breeding season (1 April to 15 August) will be established and clearly demarcated on all submerged lands south of former NAS Alameda that are transferred to the City. The City will place floating signs or buoys identifying the no wake zone to boaters traversing this area.	H, P
BO-AMM-10g	No dredging activities shall occur during the period from March 15 through August 15 each year to minimize open water turbidity just prior to and during the least tern breeding season.	H, L through T
BO-AMM-54	There is a “no-fly zone” established within 0.75 mile of the least tern colony (as depicted in Exhibit 1), at any altitude, between April 1 and August 15.	A through V
BO-AMM-55	Fireworks displays will not be authorized from April 1 to August 15.	A through V
BO-AMM-56	The portion of the potential future Bay Trail that surrounds the western, southern, and eastern sides of the VA Fed Transfer Parcel will be closed from April 1 to August 15, and no public access to those areas will be allowed during that time. Such public access will be restricted by a secure fence, at least 8 feet in height. Signage shall be placed at Bay Trail entrances describing the purpose of the annual trail closure. Enforcement of the potential future Bay Trail annual closure restrictions and access to the VA Undeveloped Area will be conducted by East Bay Regional Park District or other Service-approved entity.	A through L, U, V
BO-TC-1C	<p>Within line of sight of the VA Undeveloped Area:</p> <ul style="list-style-type: none"> a. The number of new lights shall be limited to the minimum number required for building security. b. All lights shall be directed away and/or screened from the VA Undeveloped Area. c. Tinting of windows, with non-reflective tinting material, within the line of-sight of the VA Undeveloped Area shall be required. 	A through K, U, V

Source: Alameda Point Project Draft EIR, 2013

Notes:

¹ See Figure BIO-1.

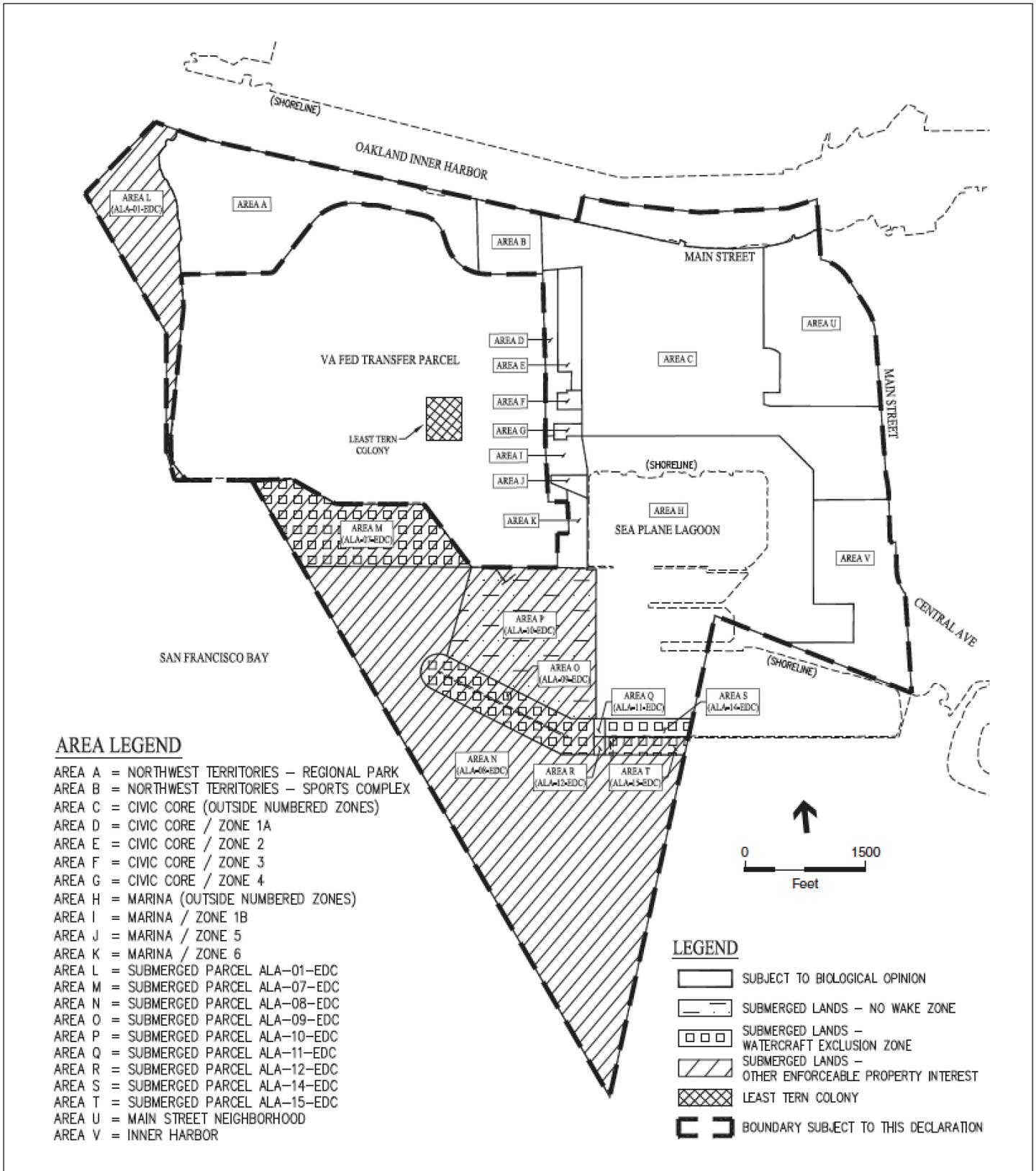


Figure BIO-1

Biological Subareas at Alameda Point

Source: Carlson, Barbee & Gibson, Inc., 2013

Impact 9-2

Future development consistent with the *Alameda General Plan 2040* could adversely affect sensitive natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS). (LTS)

Although there is no riparian habitat—typically considered a sensitive natural community—in Alameda, offshore areas adjacent to the City support a number of other sensitive natural communities, including seasonal wetlands, northern coastal salt marsh habitat, essential fish habitat (EFH), eelgrass beds, and native oyster beds. Potential impacts to salt marsh habitat and wetlands are addressed separately under Impact 9-3, below.

Designated essential fish habitat for Pacific groundfish, coastal pelagics, and Pacific Coast salmon has been designated in the waters surrounding Alameda by the USFWS and NMFS, with Fisheries Management Plans (FMP) established for each group. Dredging, pile driving, and other in-water disturbance that could occur during construction of future development allowed under the Alameda General Plan 2040 would disturb Bay sediments and increase turbidity due to suspended sediments, which could reduce visibility for mammal and avian species hunting in the area, and could also discourage prey fish from entering the area, thereby reducing the supply of fish available to these predators. These impacts would be temporary and short-term, and would not cause permanent or substantial impacts to the EFH.

Eelgrass beds are found southwest of Bay Farm Island, near Crab Cove, near Seaplane Lagoon, and along the northern shore of Alameda Island. Eelgrass beds, which are considered a habitat area of particular concern (HAPC), are recognized as having unique ecological value, providing food and shelter for numerous fish and invertebrates, and serving as a nursery habitat, providing predation refuge for juvenile fishes. Native oyster beds are also an HAPC.

Future shoreline development that would be allowed under the proposed General Plan could involve disturbance of shoreline areas that could disrupt, damage, or destroy sensitive habitat such as eelgrass beds or northern coastal salt marsh. Absent outright destruction, construction work could disturb sediments where harmful chemicals may be sequestered. Such disturbance could reduce available habitat suitable for fish foraging, especially for special-status species including salmon, steelhead, green sturgeon, and groundfish. The potential direct impacts to marine wildlife that could result are discussed under Impact 9-1, above. However, the loss of sensitive habitat would reduce habitat utilized by special-status fish and wildlife species, and would constitute a significant impact. Shoreline project construction activities requiring in-water work—such as removal or rehabilitation of existing pilings or rip-rap, dredging, dock maintenance, or seawall construction or rehabilitation—could also destroy native oyster beds or artificial habitat where native oysters may colonize. Marinas, boatyards, and maritime businesses developed consistent with the proposed General Plan may include construction of new piers, docks, or other shoreline structures that could be recolonized by oysters, thereby reducing the long-term impact to these organisms.

Any destruction of or significant damage to eelgrass beds or native oyster beds would be a potentially significant impact because eelgrass beds are considered to be of critical importance to Bay marine life and native oysters are still generally quite rare throughout the Bay. However, such impacts would be reduced to a less-than-significant level by General Plan Policy CC-33, Action (f) (“Municipal Stormwater Permit” bullet), which requires compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities. This would require implementation of standard Best Management Practices (BMPs) intended to avoid degradation of aquatic habitat by maintaining water quality and controlling erosion and sedimentation during construction. Such BMPs could include installing silt fencing between aquatic habitat and construction-related activities, locating fueling stations away from potentially jurisdictional features, and otherwise isolating construction work areas from any aquatic habitat. In addition, if any dredging is proposed, the City would require implementation of BMPs that are identified in the Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (2001) published by the U.S. Army Corps of Engineers that would avoid impacts on water quality resulting from dredging or other activities within open waters. These BMPs include silt fencing and gunderbooms or other appropriate methods for keeping dredged materials or other sediments from leaving a project site.

In conclusion, compliance with General Plan Policy CC-33, Action (f) (“Municipal Stormwater Permit” bullet) and the existing regulatory requirements cited above would ensure that implementation of the proposed General Plan would have a ***less-than-significant impact*** on sensitive natural communities, including eelgrass beds or native oyster beds.

Mitigation Measure 9-2

None required.

Impact 9-3

Future development consistent with the *Alameda General Plan 2040* could adversely affect federally protected wetlands as defined by Section 404 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (LTS)

The Oakland-Alameda Estuary and San Francisco Bay are “navigable waters” that are regulated by the USACE under Section 10 of the Rivers and Harbors Act (RHA) and Section 404 of the Clean Water Act and by the San Francisco Bay RWQCB under Section 401 of the CWA. Seasonal wetlands and tidal marshes within Alameda are also regulated under Section 404 of the CWA. Waters of the State within the project area are regulated by the RWQCB under the Porter-Cologne Act and the waters of San Francisco Bay, as well as a shoreline band that extends inland 100 feet from the high tide line, are also regulated by the Bay Conservation and Development Commission (BCDC) under the McAteer-Petris Act. Waters of the State include all Waters of the United States and, in some cases, wetlands and other features (e.g., vegetated swales) that do not meet the federal criteria.

Seasonal wetlands are interspersed throughout the western portion of Alameda Point. Seasonal wetlands offer water, food, and cover for a variety of wildlife, including water fowl, mammals, and amphibians, and may also provide foraging opportunities for aerial and ground feeding insectivorous bats.

There is northern coastal salt marsh habitat near the northern, southern, and southwestern shores at Alameda Point, adjacent to former runways at NAS Alameda, and in Arrowhead Marsh, located adjacent to the northeast shoreline of Bay Farm Island. Both migratory and resident bird species use salt marsh habitat for nesting, breeding, roosting, and feeding.

Future development projects consistent with the proposed General Plan would be required by General Plan Policy CC-34 to conduct a biological resources assessment of any proposed project site where wetland habitat could be present. If such habitat were present, a jurisdictional delineation would be required to map the extent of any jurisdictional wetlands on the project site subject to regulation by the USACE, and for project sites where jurisdictional wetlands have been identified, the project applicant would need to apply for and be issued a Nationwide Permit (NWP) prior to project construction. The USACE, when issuing an NWP, would specify the required mitigation measures for impacts to waters of the United States, including wetlands. Implementation of such mitigation measures would be required as a condition of the NWP, and would reduce potential impacts to federally protected wetlands to a less-than-significant level.

With the required compliance with General Plan Policy CC-34 and the CWA requirements referenced above, future development implemented in accordance with the *Alameda General Plan 2040* would have a ***less-than-significant impact*** on protected wetlands.

Mitigation Measure 9-3

None required.

Impact 9-4

Future development consistent with the *Alameda General Plan 2040* could interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (LTS)

Although there are no rivers or creeks in Alameda that could be utilized as wildlife nurseries or migration corridors, the surrounding waters of the Oakland-Alameda Estuary and San Francisco Bay are foraging habitats for many species of resident and migratory birds, and are migratory corridors for harbor seals and special-status fish species, including Chinook salmon, Coho salmon, Steelhead trout, green sturgeon, and Pacific herring. Construction and operation of recreational marinas, commercial boatyards, maritime businesses, and other shoreline development permitted by the proposed General Plan could interfere with the foraging and movement of such species.

Central San Francisco Bay is the thoroughfare for all migrating fish and other marine species transiting through the Bay to and from spawning habitat, nursery areas, or other forage areas within the Bay-Delta and out through the Golden Gate and open ocean. Due to Alameda's location in proximity to the Central Bay, construction and operation of new shoreline development would potentially expose special-status and sensitive fish and marine mammals moving through the Golden Gate to and from the Central Bay and South Bay to impacts from in-water pile driving noise; noise from increased vessel traffic; increased resuspension of sediments from dredging, pile removal, and anchor placement and removal; and increased potential for collisions and harassment of marine mammals through increased local vessel traffic.

Important nesting colonies for California least tern and western and California gulls are located at Alameda Point. These and other waterfowl species are declining along the West Coast, and human impacts from the heavily urbanized San Francisco Bay Area are often detrimental to them. Rafting or foraging birds look, swim, dive, or fly away as watercraft approach them and become distracted from their normal activities. Increased vigilance and escape behavior reduces their limited energy supply and induces stress. Different species have varying distance tolerances before becoming disturbed, but if disturbed they can be flushed from foraging or resting areas. Diving ducks such as scaup and scoter are especially sensitive to maritime traffic. Long-term effects could be site abandonment, reduced migration, and reduced reproductive success. Impacts to these nesting birds could result from construction-related noise and other disturbance as well as operational activities of vessels and shoreline development.

Migratory bird species could also be adversely affected by future development consistent with the proposed General Plan. Alameda is located within the Pacific Flyway along the eastern shoreline of San Francisco Bay. While exact migratory corridors through the area are unknown and vary by species, birds typically follow coastlines, rivers, and mountain ranges in their migratory passages from wintering to breeding grounds and back again. Alameda Island provides foraging and roosting habitat for numerous migratory species, while the surrounding Bay waters provide valuable stopover habitat for migratory birds.

Development of new structures allowed under the General Plan would create new flight obstacles that could increase bird collisions. This would be a significant impact because migratory birds are protected under the MBTA and native resident nongame birds are protected from take under the California Fish and Game Code. Many collisions are induced by artificial night lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many are nocturnal migrants. These birds have a tendency to move towards lights at night when migrating, and a reluctance to leave the sphere of light influence for hours or days once they encounter it. Potential bird collisions may increase as light emissions increase and during weather conditions with heavy nighttime cloud cover and/or precipitation. Studies have also indicated that blinking lights or strobe lights affect birds more significantly less than non-blinking lights. Even if collisions are avoided, birds are still at risk of death or injury. Birds can become "trapped" by a light source and, disoriented, continue to fly around the source until they become exhausted and drop to the ground, where they may be killed by predators or die from stress or exhaustion. Indirect effects on migratory

birds may include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction. These risks of collision or disorientation would be greater for new buildings located along a migratory route, in proximity to migratory stopover locations, in proximity to open space and areas of natural habitat, and areas where low cloud ceilings are frequent.

The potential interference with wildlife migration, stopovers, and breeding that could be caused by new development consistent with the proposed General Plan, including bird collisions with new buildings, would be a potentially significant impact. However, required compliance with mitigation included in Alameda Point EIR, as applicable, and with Alameda’s Bird-Safe Building Ordinance and Dark Skies Ordinance, as well as proposed General Plan Policy CC-34, Actions (c) (“Biological Assessments” bullet), (f) (“Nesting Bird Survey” bullet), (g) (“Bat Survey” bullet), (k) (“Lighting” bullet), (l) (“Rooftop Antennas” bullet), and (m) (“Guy Wires” bullet) would ensure that lighting and collision impacts would remain less than significant. Therefore, the proposed General Plan would have a ***less-than-significant impact*** on native resident and migratory fish and wildlife species.

Mitigation Measure 9-4

None required.

Impact 9-5

Future development facilitated by the *Alameda General Plan 2040* could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (LTS)

As discussed under Regulatory Framework in Section 9.2, the City of Alameda Municipal Code contains protections for street trees throughout the City. Section 23-3.2 of the City’s municipal code applies to street trees in general and requires that the Public Works Director permit any planting, removal, trimming, pruning, or cutting of street trees. Additionally, the *Alameda Master Street Tree Plan* protects palm trees within the public right-of-way on Burbank Street and Portola Avenue, any street tree on Thompson and Central Avenues, and any coast live oak greater than 10 inches diameter at breast height (DBH). Future development facilitated by the proposed General Plan could require removal of street trees protected by Municipal Code Section 23-3.2 or by the *Alameda Master Street Tree Plan*. However, the City would require any proposed project subject to the City’s Protected Tree Removal Policy or Municipal Code Section 23-3.2 to obtain the required tree removal authorization from the Historical Advisory Board or Director of Public Works, as applicable, as part of its discretionary approval process. This would ensure that construction of these projects would not conflict with local ordinances or policies protecting trees. New development would also be required to comply with General Plan Policy CC-27, protecting natural habitat and sensitive biological resources, and Policy CC-34, requiring preservation of wetlands and provision of buffers between wildlife habitat and developed areas. This would be a ***less-than-significant impact***.

Mitigation Measure 9-5

None required.

Impact 9-6

Future development facilitated by the *Alameda General Plan 2040* could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. (LTS)

The Comprehensive Conservation and Management Plan (CCMP) discussed under Regulatory Framework in Section 9.2 functions as a *de facto* habitat conservation plan (HCP). The CCMP was prepared by the San Francisco Estuary Partnership (SFEP), established in 1988 by the State of California and the U.S. Environmental Protection Agency under the Clean Water Act's National Estuary Program when the San Francisco Estuary was designated as an *estuary of national significance*. The SFEP is a federal-state-local partnership working to promote effective management of the Bay-Delta Estuary, and to restore and maintain its water quality and natural resources while maintaining the region's economic vitality. The SFEP oversees and tracks implementation of its CCMP goals, objectives, and actions to protect and restore the Estuary. The CCMP serves as a roadmap for restoring the Estuary's chemical, physical, and biological health.

The *San Francisco Bay Subtidal Habitat Goals Project* discussed in the Regulatory Framework section could also be considered an HCP. Prepared as a collaboration among BCDC, the California Ocean Protection Council/California State Coastal Conservancy, NOAA, and the San Francisco Estuary Partnership, it provides a scientific foundation and approach for the conservation and enhancement of the baylands and submerged areas of San Francisco Bay.

Although the CCMP and Goals Project are not regulatory documents, they are supported by most of the agencies and non-governmental groups with major planning, operational, or regulatory interests in Bay Area wetlands and, as the preceding impact discussions demonstrate, any adverse effects on wetlands, shorelines, and subtidal habitats would also have potential negative effects on special-status species, critical habitat for federal listed species, managed fish species Essential Fish Habitat, or habitat for protected marine mammals. Future development consistent with the proposed General Plan could result in potentially significant impacts on biological resources, which could conflict with applicable policies of the CCMP and the Goals Project, which would be a potentially significant impact due a conflict with an adopted HCP. However, compliance with General Plan policies CC-28 and CC-34 and applicable supporting actions would ensure that impacts would remain less than significant. Accordingly, the proposed General Plan would have a ***less-than-significant impact*** due to a conflict with an adopted habitat conservation plan.

Mitigation Measure 9-6

None required.

CUMULATIVE IMPACTS

Cumulative development in the cities surrounding Alameda in combination with future development facilitated by the *Alameda General Plan 2040* may contribute to the loss of foraging and breeding habitat for special-status species; contribute to the loss or degradation of sensitive natural communities, including wetlands, tidal habitats, and subtidal habitats; interfere with breeding by special-status species; and interfere with the movement of migratory wildlife. However, goals, policies, and actions contained in the Conservation and Climate Action Element and the Parks and Open Space Element of the *Alameda General Plan 2040* would reduce these impacts, limiting impacts on special-status species, and contributing to the conservation of existing natural resources. In addition, the potential impacts to biological resources that could result from implementation of the proposed General Plan, described above, would all be reduced to a less-than-significant level through implementation of the identified proposed General Plan policies. Therefore, while the proposed project would incrementally contribute to cumulative impacts to biological resources, the mitigation measures identified in this chapter would ensure that the impacts would not be cumulatively considerable. Cumulative impacts would be ***less than significant***.

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10. TRANSPORTATION AND CIRCULATION

10.1. Introduction

This chapter describes the existing transportation and circulation conditions, including the pedestrian, bicycle, transit, and vehicular facilities in and around Alameda, describes the regulatory setting relevant to transportation and circulation issues, and discusses and evaluates the potential impacts of the policies proposed and development facilitated by the *Alameda General Plan 2040* on transportation and circulation.

The analysis evaluates the impacts of the proposed General Plan on consistency with transportation and circulation policies, vehicle miles traveled (VMT), transportation safety, and emergency access. The VMT assessment uses the Alameda County Transportation Commission’s (CTC) Countywide Travel Demand Model for two scenarios: Baseline (2020) conditions, and General Plan Buildout (2040) conditions, which contains updated land uses and street network to reflect the buildout of the proposed General Plan.

Within the last year, travel behavior has changed at a global level due to the COVID-19 pandemic. In Alameda and the surrounding areas, travel patterns (both amount and mode of trips) have changed significantly since the County of Alameda’s “shelter-in-place” order was issued on March 17, 2020 and subsequently modified. Unless otherwise noted, the existing conditions presented in this section, such as traffic conditions and transit schedules, are based on data collection or observations prior to the start of the pandemic. The impact analysis presented in this section is generally based on the assumption that long-term travel behavior characteristics would be similar to conditions prior to the start of the pandemic, because, at present, the medium- or long-term effects of the COVID-19 pandemic on travel behavior are uncertain and it would be speculative to estimate any potential long-term or permanent changes.

10.2. Setting

REGULATORY FRAMEWORK

This section outlines the existing plans, policies, and regulations that relate and apply to the proposed project at the federal, State, regional, and local levels.

Federal

There are no federal plans, policies, regulations, or laws addressing transportation that directly pertain to the *Alameda General Plan 2040*. However, federal regulations such as the Americans With

Disabilities Act (ADA) or Title VI of the Civil Rights Act may have some relevance or influence on future projects in the EIR study area.

State

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, building on legislative changes from SB 375, Assembly Bill (AB) 32, and AB 1358. SB 743 began the process to modify how impacts to the transportation system are assessed for purposes of CEQA compliance. SB 743 requires a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by Level of Service (LOS) and similar metrics, toward a focus on reducing VMT. The statute states that upon certification of the new criteria, 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, except in certain locations specifically identified in the new criteria.

The new criteria, contained in *CEQA Guidelines* Section 15064.3, were certified and adopted in December 2018. Consistent with SB 743, Section 15064.3 states that VMT is the most appropriate metric to assess transportation impacts and that, with very limited exceptions, a project's effect on automobile delay does not constitute a significant environmental impact. The *CEQA Guidelines* require all lead agencies in California to use VMT-based thresholds of significance in CEQA documents published after July 1, 2020.

In addition to updating the *CEQA Guidelines*, OPR prepared additional technical guidance published in their *Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory)*.¹ The *Technical Advisory* provides background on the intent of SB 743, technical considerations in the selection of VMT metrics, methodology, and significance thresholds, criteria which could be used to screen projects out from a VMT impact analysis, and information on VMT mitigation.

California Complete Streets Act (AB 1358)

On September 30, 2008, AB 1358, the California Complete Streets Act of 2008 was signed into law. As of January 2011, AB 1358 requires any substantive revision of the circulation/mobility element of a city or county's general plan to identify how they will safely accommodate the circulation of all users of the roadway including pedestrians, bicyclists, children, seniors, individuals with disabilities, and transit riders, as well as motorists.

Caltrans Deputy Directive 64-R1: Complete Streets – Integrating the Transportation System

In 2001, Caltrans adopted Deputy Directive 64; a policy directive related to non-motorized travel throughout the State. In October 2008, Deputy Directive 64 was strengthened to reflect changing priorities and challenges. Deputy Directive 64-R1 requires Caltrans to develop multimodal projects in

¹ Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018, Accessed October 2, 2020 at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

balance with community goals, plans, and values. Implicit in these objectives is addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding. Bicycle, pedestrian, and transit travel is facilitated by creating “complete streets,” beginning early in the system planning process and continuing through project delivery and maintenance and operations.

Regional

Plan Bay Area

Plan Bay Area 2040, which was adopted in July 2017, is both the Bay Area’s Regional Transportation Plan (RTP) as well as its Sustainable Communities Strategy (SCS). Plan Bay Area grew out of “The California Sustainable Communities and Climate Protection Act of 2008,” which requires each of the State’s 18 metropolitan areas to reduce greenhouse gas emissions from cars and light trucks.

Within *Plan Bay Area 2040*, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) found that the Bay Area consistently ranks as one of the most congested metropolitan areas in the nation. They concluded, however, that additional roadway capacity would not solve the problem and that the region must instead find ways to operate the existing highway and transit networks more efficiently.

To that end, Plan Bay Area recommends increasing non-auto travel mode share and reducing VMT per capita and per employee by promoting transit-oriented development, transit improvements, and active transportation modes such as walking and bicycling. These strategies seek to not only improve mobility within the region, but also reduce regional and Statewide GHG emissions. Alameda General Plan 2040 policies support:

- Expansion of ferry service from the new, recently completed Seaplane Lagoon ferry terminal at Alameda Point
- Expansion of bus and shuttle services throughout Alameda
- Completion of the Central Avenue Complete Streets Project and the Cross Alameda Trail bicycle and pedestrian path currently under construction
- Improving safety throughout Alameda for bicyclists and pedestrians
- Improving access for individuals with disabilities

In addition, as part of the implementation framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus future growth. PDAs are areas along transportation corridors that are served by public transit, which provide opportunities for development of transit-oriented, infill development within existing communities. Most of the future development in the region is expected to occur within the PDAs.

TPAs are similar in that they are formed within one-half mile around a major transit stop such as a transit center or rail line. Overall, over two-thirds of all regional growth by 2040 is allocated to PDAs

and TPAs. The PDA's in the City of Alameda are Alameda Point PDA and the Northern Waterfront PDA. The TPAs in the City of Alameda include the areas surrounding the Alameda Main Street, Harbor Bay, and Seaplane Lagoon Ferry Terminals, as well as the AC Transit Route 51A corridor along Webster Street, Santa Clara Avenue, and Broadway. The proposed General Plan anticipated that the PDAs and TPAs will absorb most of the City's future growth.

MTC is currently in the process of updating Plan Bay Area. *Plan Bay Area 2050* is expected to be adopted in fall 2021.

Countywide Transportation Plan

The Alameda County Transportation Commission (Alameda CTC) is a joint powers authority that plans, funds, and delivers transportation programs and projects that expand access and improve mobility to foster a vibrant and livable Alameda County. Alameda CTC also serves as the County's congestion management agency. Every four years, Alameda CTC updates the Alameda Countywide Transportation Plan (CTP), a long-range policy document that serves as a guide for future transportation projects, programs, policies, and advocacy for all of Alameda County through 2040. It addresses all parts of Alameda County's transportation system, including capital, operation, and maintenance for all transportation modes.

The CTP establishes countywide goals, objectives, and policies for improving mobility on Alameda County's streets, highways, transit systems, and bicycle/pedestrian facilities, as well as strategies to reduce transportation related impacts. The 2020 CTP was adopted in fall 2020. It includes the following projects within the City of Alameda:

- Alameda Point Transit Network Improvements
- Clement Avenue and Tilden Way Complete Streets
- Lincoln Avenue/Marshall Way Safety Improvements
- Willie Stargell Bus Priority and Multimodal Safety Corridor
- Oakland/Alameda Access Project
- Redwood City-San Francisco-Oakland Ferry
- Seaplane Lagoon-San Francisco Ferry

Alameda CTC Congestion Management Program

Alameda CTC also serves as the County's congestion management agency and conducts periodic monitoring of the major roadways on the congestion management program (CMP) roadway network, with the most recent report adopted in September 2019. Alameda CTC administers a Land Use Analysis Program, which is one of the legislatively required elements of the Alameda CTC Congestion Management Program. The goals of the Land Use Analysis Program are to:

- Better integrate local land use and regional transportation investment decisions;
- Better assess the impacts of development in one community on another community; and

- Promote information sharing between local governments when the decisions made by one jurisdiction will impact another.

Alameda CTC reviews local land use plans and projects with the potential to cause countywide or regional-scale impacts, including general plans. The purpose of Alameda CTC's review is to assess impacts of individual development actions on the regional transportation system and to ensure that significant impacts are appropriately mitigated.

Alameda CTC guidelines state that impacts to all modes should be considered:

- **Transit:** Effects of vehicle traffic on mixed-flow transit operations, transit capacity, transit access/egress, need for future transit service, consistency with adopted plans and circulation element needs.
- **Bicycles:** Effects of vehicle traffic on bicyclist conditions, site development and roadway improvements, and consistency with adopted plans.
- **Pedestrians:** Effects of vehicle traffic on pedestrian conditions, site development and roadway improvements, and consistency with adopted plans.
- **Other impacts and opportunities:** Noise impacts for projects near State highway facilities and opportunities to environmentally clear access improvements for transit-oriented development projects.

Local

City of Alameda General Plan

Alameda has existing goals and policies in the 1990 General Plan relative to traffic operation and the transportation system. Many of the policies include measures intended to promote greater efficiency for the City's transportation system for all users, including motorists, public transit users, bicyclists, pedestrians, and emergency responders.

The objectives contained under Goals 4.1 and 4.2 aim to establish a safe, barrier-free, and efficient transportation system that balances the mobility needs of the community with the overall community objective of creating a livable human and natural environment. The objectives contained under Goal 4.3 focus on encouraging the use of transportation modes other than the single-occupant automobile, especially at peak period, in such a way as to allow all modes to be mutually supportive and to function together as one transportation system. Goal 4.4 focuses on implementing and maintaining the planned transportation system in a coordinated and cost-effective manner.

Alameda Active Transportation Plan

The City of Alameda is currently developing the *Alameda Active Transportation Plan* to guide the development of pedestrian and bicycle infrastructure and supporting programs. The *Alameda Active Transportation Plan* is planned for release in 2021. Documents from July 2020 note the following draft goals:

- **Safety:** Increase the safety of all people using active transportation.

- **Mode Shift:** Increase percentage of walking and bicycling trips.
- **Connectivity and Comfort:** Develop a well-connected network of active transportation facilities that are comfortable and convenient for people of all ages and abilities.
- **Equity:** Provide equal access to active transportation facilities for all people in Alameda and ensure that transportation improvements and programs are implemented equitably throughout the city.
- **Community:** Promote and inspire safe and fun walking, bicycling and rolling to foster a strong culture of walking and bicycling.

City of Alameda Transportation Choices Plan

The 2018 *City of Alameda Transportation Choices Plan* contains the following two goals:

- **Goal 1 - Estuary Crossings:** Decrease drive-alone trips at estuary crossings, especially in the peak period.
- **Goal 2 - Alameda Trips:** Increase the share of walking, bicycling, bus, and carpooling trips within Alameda.

The plan establishes goals of increasing the morning peak-hour non-drive-alone trip share from 27 percent to 39 percent; and increasing the share of walking, bicycling, transit, and carpooling trips in Alameda by 5 percent, from 37 percent to 42 percent. It includes prioritized projects for the near-term, mid-term, and long-term in support of these goals.

Alameda Climate Action and Resiliency Plan

The 2019 *Alameda Climate Action and Resiliency Plan (CARP)* identifies mitigation and adaptation measures towards the vision of achieving net zero carbon emissions and community resiliency as soon as possible. The plan also contains a GHG reduction goal of 50 percent below 2005 levels by 2030. The CARP identifies the following actions related to transportation:

- **Transportation Mode Shift**
 - T1. Reduce commute VMT
 - T2. Build additional bike lanes
 - T3. Traffic signal synchronization
 - T4. Expand *EasyPass* Program
 - T5. Ban gas-powered leaf blowers
- **Transition to Electric, Zero Emission Vehicles**
 - T6. Increase availability of EV charging stations citywide
 - T7. Promote purchase of LEVs and ZEVs
 - T8. Continue programs to encourage new EV purchases
 - T9. Continue to encourage businesses to install EV charging stations
 - T10. Electrify City's fleet

EXISTING CONDITIONS

This subsection describes the existing transportation-related context in the City of Alameda, beginning with a description of travel characteristics and an overview of the street network in Alameda. Existing transit service, bicycle network, and pedestrian facilities are also described, followed by current VMT metrics and travel speeds along the City's major corridors.

Travel Characteristics

The City of Alameda is primarily comprised of residential neighborhoods, commercial areas, and various parks, with an estimated population of nearly 79,000 residents.² Table TRA-1 compares the commute characteristics of Alameda residents and workers to those of Alameda County, the State of California, and the United States (U.S.) as a whole, based on 2014-2018 Census data. Approximately 68 percent of Alameda residents commute by automobile, which is lower than Alameda County (72 percent), the State, and U.S. (84 and 85 percent, respectively). Alameda commuters tend to carpool less and take transit more compared to the rest of the County, the State, and the U.S. as whole.

Alameda residents' transit mode share is about 2 percent more than that of Alameda County and almost four times as much as the State and national averages. Approximately 3 percent of Alameda residents walk to work, which is similar to the State and national averages and slightly below the 4 percent County average. The percentage of Alameda residents that ride their bike to work (2 percent) is greater than or equal to the other regions. Compared to State and national data, Alameda and the County's data show higher percentages of residents working outside their county of residence. Alameda's average commute time (33.9 minutes) is also slightly higher than the average commute time of 29.3 and 26.6 minutes for the State and U.S., respectively. Generally, a slightly larger percentage of Alameda workers leave for work during the typical morning commute period (7:00 AM to 9:00 AM) compared to the County, State, and the U.S. for the same time period. Household vehicle ownership in Alameda (1.92 vehicles per household) is slightly less than in the County as a whole (2.03 vehicles per household).

Alameda workers have a higher rate of automobile mode share than residents. About 80 percent of the workers in Alameda commute by either driving alone or carpooling, which is higher than Alameda or Alameda County residents but lower than California or U.S. About 5 percent of Alameda workers commute by transit, which is much lower than the Alameda or Alameda County residents but similar to California and the U.S. The percent of Alameda workers walking or biking to work is similar to Alameda residents.

² Alameda General Plan, March 2021 Draft. Accessed March 21, 2020 at: https://irp-cdn.multiscreensite.com/f1731050/files/uploaded/AGP_EL1_IntroUpdate_March2021.pdf.

Table TRA-1
Alameda Residents and Workers Journey to Work Travel Characteristics (2018)

Travel Characteristics	City of Alameda (Residents)	City of Alameda (Workers)	Alameda County	California	United States
Commute Mode Choice					
Single-Occupant Automobile	60%	70%	62%	74%	76%
Carpool	8%	10%	10%	10%	9%
Subtotal Commute by Automobile	68%	80%	72%	84%	85%
Public Transit	17%	5%	15%	5%	5%
Bike	2%	2%	2%	1%	<1%
Walk	3%	3%	4%	3%	3%
Other Means	10%	10%	8%	7%	6%
Other Commute Related Data					
Work outside county of residence	34%	N/A	37%	17%	24%
Leave for work between midnight and 7:00 AM	25%	N/A	24%	32%	32%
Leave for work between 7:00 AM and 9:00 AM	50%	N/A	48%	42%	43%
Average Travel Time to Work (minutes)	33.9	N/A	33.4	29.3	26.6
Average Auto Ownership Per Household (vehicles)	1.92	N/A	2.03	2.15	2.05

Notes: Commute by Automobile is subtotal including Single-Occupant Automobile and Carpool mode choice.
Source: US Census Bureau, 2014-2018 American Community Survey 5-Year Estimates.

Table TRA-2 shows mode share for both work and non-work trips in Alameda. The majority of both work and non-work trips are by automobile modes. Transit is a substantial fraction of work trips but a comparably small amount on non-work trips, whereas bike and walk are a substantial fraction of non-work trips but a comparably small amount of work trips. These mode shares are consistent with the findings that compared to the State and U.S., Alameda has a higher percentage of residents working outside their county of residence, and that Alameda’s average commute time is therefore higher than the average commute time for the State and U.S., respectively.

Table TRA-2
Mode Share for Work and Non-Work Trips

	Work Trips ^a	Non-Work Trips ^b	Total Trips ^c
Automobile (Single Occupant and Carpool)	68%	74%	71%
Public Transit	17%	3%	11%
Bike/Walk	5%	23%	13%

^a Source: 2014-2018 American Community Survey 5-Year Estimates

^b Source: 2012 California Household Transportation Survey

^c Based on 2012 California Household Transportation Survey, about 57 percent of all trips are work trips and 43 percent are non-work trips.

Table TRA-3 shows the changes in commuter mode characteristics for Alameda residents between 2000 and 2018. During this period, the single occupant automobile fluctuated but remained the highest mode share. Since 2000, driving alone and carpool mode shares have decreased from about 75 percent to 68 percent, replaced by an increase in other travel modes and work-from-home.

Vehicle Miles Traveled (VMT)

VMT is a measure of the transportation system’s impact on the climate, the environment, and human health. The California Environmental Quality Act (CEQA) (Public Resources Code Section 21099) aligns local environmental review methodologies with statewide objectives to reduce greenhouse gas (GHG) emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl, and reduce vehicle miles traveled in California. Increases in VMT lead to various direct and indirect impacts on the environment and human health, including greenhouse gas emissions and air and noise pollutants. Transportation is a major contributor to the greenhouse gas emissions in

California and in Alameda. Approximately 70 percent of greenhouse gas emissions in Alameda are associated with vehicle miles traveled.³

**Table TRA-3
Changes in Alameda Resident Commute Patterns**

	2000 ^a	2010 ^b	2018 ^c
Single-Occupant Automobile	63%	64%	60%
Carpool	12%	9%	8%
Public Transit	16%	14%	17%
Bike	1%	1%	2%
Walk	3%	4%	3%
Other Means	1%	1%	2%
Worked at Home	4%	6%	7%

^a Source: 2000 Census (<http://www.bayareacensus.ca.gov/cities/Alameda.htm>)

^b Source: 2006-2010 American Community Survey 5-Year Estimates

^c Source: 2014-2018 American Community Survey 5-Year Estimates

The Alameda County Transportation Commission (CTC) Countywide Travel Demand Model (Alameda CTC Model) estimates household VMT per capita for residential uses, and commute VMT per worker for employment-generating uses. The household VMT per capita measures all the trips by motor vehicle on a typical weekday associated with a residential use, such as trips to work, school, or shop, and divides that distance by the number of residents in the study area. The commute VMT per worker measures all of the worker commute trips on a typical weekday by motor vehicle between homes and workplaces and divides that distance by the number of workers in the study area.

Table TRA-4 presents the average VMT per capita for the existing Alameda residents and the average commute VMT per worker for the existing Alameda workers and compares them to the countywide and region wide averages based on the Alameda CTC Model results for 2020. City of Alameda residents have a lower VMT per capita than Alameda County or the Bay Area region. Workers in the City of Alameda have a higher VMT per worker than workers in Alameda County or the Bay Area region.

³ Source: Alameda General Plan 2040

The higher commute VMT per worker is consistent with the prior findings that a higher percentage of Alameda workers than Alameda residents use automobiles for their commute to work.

**Table TRA-4
Existing (2020) VMT Summary**

Geography	Average Household VMT per Capita ^a	Average Commute VMT per Worker ^a
City of Alameda	16.0	18.3
Alameda County	19.3	15.8
Bay Area Region	19.8	18.1

a. Based on the results of the Alameda CTC Countywide Travel Demand Model
Source: Fehr & Peers, 2021.

Existing Roadway Network

The regional and local roadway network serving Alameda are described below.

Regional Access

Regional vehicular access is provided primarily through the interstate freeway system. Freeways are facilities designed to carry large traffic volumes over long distances and separate all conflicting traffic movements through the use of grade-separated interchanges. No freeways are located within the City of Alameda, but Interstate-880 (I-880) in neighboring Oakland provides several connections to the City of Alameda. I-880 can be accessed via the Park Street, Fruitvale Avenue, and High Street Bridges on the east side of the island, via the Webster and Posey Tubes on the west side of the island, and via Doolittle Drive (SR 61) on Bay Farm Island to the southeast. The Park Street Bridge provides direct access to I-880 ramps through 29th Avenue, and the Fruitvale Avenue and High Street Bridges connect with I-880 via 8th and 9th Avenues and Oakport Street and Coliseum Way, respectively. The Webster and Posey Tubes connect with freeway ramps on 5th and 6th Streets. Doolittle Drive connects with I-880 through freeway ramps on Hegenberger Road and 98th Avenue.

According to Caltrans and MTC, I-880 is one of the Bay Area's most congested freeways, with several hours of heavy congestion each day. Congestion is generally heaviest in the northbound direction during the morning commute hours and in the southbound direction during the afternoon and evening hours. Congestion on I-880 has increased in recent years, resulting in increased vehicular delay for Alameda residents attempting to access the region in the morning or return to Alameda in the evening.

Congestion along the I-880 freeway is expected to increase in the next 25 years. According to the Oakland-Alameda Access Project Traffic Operations Analysis Report,⁴ the increase in congestion is estimated to reduce the average speed along I-880 in the northbound direction from about 50 miles per hour (mph) in 2015 to about 31 mph in 2045 during the morning peak period (6:00 to 10:00 AM) and in the southbound direction from about 21 mph in 2015 to 12 mph in 2045 during the afternoon/evening peak period (3:00 to 7:00 PM). The expected increase in congestion on I-880 would affect traffic operations along the corridors connecting Alameda and I-880, and as a result, Alameda residents and workers would experience additional vehicular delay in traveling to and from Alameda.

Commute Hour Travel Times

Given that a large percentage of Alameda residents and workers travel by automobile to work, that a large percentage make that trip during the traditional morning and evening commute hours, that their commutes require that they gain access to the regional freeway system via Webster Street and Park Street, and that travel times to the regional freeway system is influenced by congestion on the I-880 freeway, travel times were evaluated on the two major corridors in and out of Alameda:

- **Webster Street** – both directions of Webster Street (including the Webster/Posey Tubes) between Central Avenue in Alameda and 7th Street in Oakland
- **Park Street** – both directions of Park Street between Otis Drive in Alameda and 7th Street in Oakland

Existing travel times were derived from information from anonymized cell phone data for weekdays in September 2019 in the northbound and southbound directions along the two corridors. Table TRA-5 summarizes the typical range of travel times (minimum and maximum travel times) and the overall travel times for each corridor during both the AM and PM peak periods. As shown in the table, the average travel time on northbound Webster Street in the morning commute period is about 9 minutes and the average morning commute time on northbound Park Street is about 8 minutes. Also shown is that the times can vary significantly during the two-hour peak period. For example, on northbound Webster Street, the travel time, depending on when the commuter is traveling between 7:00 and 9:00 AM can vary dramatically between 5 and 21 minutes, which indicates that the peak commute period is actually less than two hours in length. Park Street is less dramatic, but as shown in Table TRA-5, depending on when the commuter is leaving, the travel time on northbound Park Street in the morning can vary from 5 to 12 minutes.

⁴ Oakland-Alameda Access Project EA#04-0G360 Traffic Operations Analysis Report Final (August 19, 2020). Available at: https://www.alamedactc.org/wp-content/uploads/2020/09/17_OAAP-TOAR-v7-clean-combined-20200916.pdf.

Table TRA-5
Existing Travel Times

Corridor	Direction	Distance (miles)	Travel Times (minutes) ^a					
			AM Peak Period (7:00 to 9:00 AM)			PM Peak Period (4:00 to 6:00 PM)		
			Max	Min	Avg	Max	Min	Avg
Webster Street (Central Avenue – 7th Street)	Northbound	2.0	21	5	9	9	5	6
	Southbound	1.9	7	4	5	8	5	6
Park Street (Otis Drive – 7th Street)	Northbound	1.4	12	5	8	13	5	8
	Southbound	1.4	10	5	6	10	5	7

^a Travel time data collected from anonymized cell phones on weekdays during September 2019
Source: Fehr & Peers, 2021.

Street System in Alameda

According to the *1990 General Plan*, streets in Alameda have the following classification:⁵

- **Regional Arterials:** These streets are designed to carry the heaviest traffic volumes and serve as connections to regional attractions and freeways.
- **Island Arterials:** These streets are designed to provide access for trips that start and end in the City and serve to connect the collector and local streets with the arterial network.
- **Transitional Arterials:** These streets currently function as arterials but are desired to operate as Island Collectors.
- **Island Collectors:** These streets are designed to channel traffic between local streets and arterial streets and to provide access to local attractions.
- **Transitional Collectors:** These streets currently function as island collectors but are desired to operate as Local Streets.
- **Local Streets:** These carry low traffic volumes associated with providing direct land access to adjacent land uses.

⁵ Alameda 1990 General Plan, Accessed September 23, 2020 at: https://irp-cdn.multiscreensite.com/f1731050/files/uploaded/Alameda_1990_GeneralPlan.pdf.

Figure TRA-1 shows the current street classifications.

Truck Routes

Truck routes are streets designed to carry through truck traffic. The currently designated truck routes consist of Main Street, Monarch Street, West Tower Avenue, Atlantic Avenue, Marina Village Parkway, Mariner Square Drive, Webster Street, Central Avenue, Buena Vista Avenue, Clement Avenue, Encinal Avenue, Park Street, Tilden Way, Fruitvale Avenue, Broadway, Otis Drive, Doolittle Drive, Harbor Bay Parkway, and Island Drive.⁶

Public Transit

The various public transit services in Alameda are described below. Figure TRA-2 shows the existing transit facilities and network in Alameda.

Bus Service

The Alameda-Contra Costa Transit District (AC Transit) is the primary bus service provider in Alameda. AC Transit serves 15 cities and adjacent unincorporated communities in the East Bay. Several AC Transit bus routes provide regular service within Alameda. Most bus routes typically operate along major arterial corridors, such as Santa Clara Avenue, Webster Street, and Park Street. These are relatively straight routes that operate from early morning into the late evening.

AC Transit also operates limited stop services such as Route 851 which operates late nights, and the Transbay Routes (Routes O, OX, and W), which serve the Salesforce Transit Center in San Francisco during peak commute periods. Table TRA-6 summarizes the hours of operation, headways and average weekday ridership for the bus routes serving Alameda.

In 2019, the bus stops along Santa Clara Avenue and Park Street had the highest weekday boarding and alightings within Alameda. The most active bus stop was at the Santa Clara Avenue/Park Street intersection, with about 430 boarding and alightings per day. There are about 7,500 AC Transit boardings per weekday in Alameda, and approximately 3,200 boardings per weekday along Santa Clara Avenue. Route 51A, which is the most frequently operated route in Alameda, also has the highest ridership of any routes within the City of Alameda.

⁶ City of Alameda Truck Routes. Available: <https://www.alamedaca.gov/files/assets/public/publicworks/truck-route-map-2009.pdf>. Accessed September 18, 2020.



Figure TRA-1

Existing Roadway Classifications

**Table TRA-6
Existing (2019) AC Transit Service Summary**

Route	From	To	Weekdays ^a			Weekends ^a			Total Daily Boardings ^c	Total Daily Boardings in Alameda ^c
			Operating Hours	Headway ^c (minutes)		Operating Hours	Headway ^c (minutes)			
				Peak	Non-Peak		Peak	Non-Peak		
Local Service										
19	Lafayette Square	Fruitvale BART	5:50 AM - 10:15 PM	20		6:00 AM - 10:00 PM	30		520	230
20	Lafayette Square	Fruitvale Avenue & MacArthur Boulevard	5:00 AM - 12:30 AM	30		5:00 AM - 12:00 AM	30		2,460	1,150
21	Oakland Airport	Fruitvale Avenue & MacArthur Boulevard	6:25 AM - 10:10 PM	30		7:00 AM - 9:00 PM	30		1,420	560
51A	Fruitvale BART	Rockridge BART	5:00 AM - 12:25 AM	10	20	6:00 AM - 12:00 AM	15	20	9,390	3,220
96	W Midway Avenue & Monarch Street	Fruitvale Avenue & Montana Street	6:20 AM - 11:00 PM	30		6:00 AM - 9:00 PM	30		1,190	440
314	Hegenberger Road & Edgewater Drive	West Oakland Post Office	12:50 PM - 1:35 PM	One trip per day (T/Th only)		No service			^d	^d
356	Palo Vista Gardens	Alameda South Shore Center	10:20 AM - 11:00 AM	One trip per day (M/W/F only)		No service			10	3
School Lines										
631	Robert Davey Jr. Drive & Packet Landing Drive	Encinal High School	7:10 AM - 8:05 AM 2:55 PM - 4:20 PM	20		No service			150	150
663	Broadway & Blanding Avenue	Encinal High School	7:20 AM - 7:45 AM 1:10 PM - 4:10 PM	40		No service			30	30

10. Transportation and Circulation

Route	From	To	Weekdays ^a			Weekends ^a			Total Daily Boardings ^c	Total Daily Boardings in Alameda ^c
			Operating Hours	Headway ^c (minutes)		Operating Hours	Headway ^c (minutes)			
				Peak	Non-Peak		Peak	Non-Peak		
687	Island Drive Park & Ride	Lincoln Middle School	7:45 AM – 8:00 AM 1:40 PM – 3:15 PM	75		No service			140	140
Night Service										
851	Fruitvale BART	Allston Way & Shattuck Avenue	12:15 AM – 5:05 AM	60		12:00 AM – 4:00 AM	60		120	30
TransBay Service										
O	Salesforce Transit Center	Fruitvale BART	6:00 AM – 10:40 PM	10	60	6:00 AM – 8:00 PM	60		1,910	1,020
W	Salesforce Transit Center	Broadway & Blanding Avenue	4:05 PM – 8:40 PM	20	40	No service			470	250
OX	Salesforce Transit Center	Island Drive Park & Ride	4:00 PM – 8:35 PM	15	60	No service			560	290

^a Hours and headways as of January/February 2020.

^b Headways are defined as the time interval between two transit vehicles traveling in the same direction over the same route.

^c Weekday boardings from AC Transit, rounded to the nearest 10, from Spring 2019.

^d No ridership information available for Route 314

Source: AC Transit, 2019, summarized by Fehr & Peers, 2021.

Rail Service

Bay Area Rapid Transit (BART) provides regional rail service throughout the East Bay and across the Bay to San Francisco and the Peninsula. BART does not provide direct service within the City of Alameda.

The nearest BART stations to Alameda include:

- **12th Station:** This station is located at 1245 Broadway in Oakland, approximately 1 mile northeast of Alameda. The station has no parking available, with Lake Merritt being the closest station with parking. Bike racks and 12 shared-use electronic bike lockers are also provided. The average daily weekday boardings in February 2020 were 13,900 riders at this station.⁷ The 12th Station can be accessed via AC Transit Routes 19, 20, 51A, and 851.
- **Lake Merritt Station:** This station is located at 800 Madison Street in Oakland, approximately 0.8 miles northeast of the City of Alameda. The station has monthly and single day reserved permit, daily fee, extended weekend, carpool, and airport long-term permit parking. It also has bike racks and 84 electronic bike lockers. The average daily weekday boardings in February 2020 were 7,300 riders at this station.⁷ There is no direct bus service between the Lake Merritt Station and Alameda.
- **Fruitvale Station:** This station is located at 3401 East 12th Street in Oakland, approximately 0.5 miles northeast of Alameda. The station has monthly and single-day reserved permit, daily fee, extended weekend, carpool, and airport long-term permit parking. Bike racks and 28 shared-use electronic bike lockers are also provided. The average daily weekday boardings in February 2020 were 7,700 riders at this station.⁷ Fruitvale Station can be accessed via AC Transit Routes 19, 20, 21, 51A, 851, and O.
- **Coliseum Station:** This station is located at 7200 San Leandro Street in Oakland, approximately 1.7 miles east of Bay Farm Island. The station has monthly and single-day reserved permit, daily fee, extended weekend, and carpool permit parking. Bike racks and 16 shared-use electronic bike lockers are also provided. The average daily weekday boardings in February 2020 were 4,700 riders at this station.⁷ There is no direct bus service between the Coliseum Station and Alameda.

Ferry Service

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) provides regional ferry service throughout the Bay Area under the San Francisco Bay Ferry brand, serving the cities of San Francisco, South San Francisco, Alameda, Oakland, Richmond, and Vallejo. The trips are mostly

⁷ BART, 2020 Monthly Ridership Report, Accessed September 18, 2020 at: <https://www.bart.gov/about/reports/ridership>.

commuter-focused, with most boardings occurring during the peak period in the peak direction (i.e., most boardings in the morning in Alameda go to San Francisco). Alameda has three ferry terminals:

- **Alameda Main Street Terminal:** This terminal is located at 2990 Main Street on the north side of Alameda Island west of the Webster/Posey Tubes. Parking is available at the terminal, along with 20 shared-use electronic bike lockers. In February 2020, the Alameda Main Street and Oakland Terminals combined had around 97,000 boardings.⁸ Ferry service is provided to the San Francisco Ferry Building, Pier 41, and South San Francisco, with seasonal service to Oracle Park. In 2019, 21 ferries departed from the Alameda Main Street Terminal on a typical weekday.⁹
- **Seaplane Lagoon Terminal:** This terminal is located within the Town Center Waterfront District at Alameda Point. It was completed in 2020 and will become the primary terminal for direct service from West Alameda to San Francisco.
- **Harbor Bay Terminal:** This terminal is located at 215 Adelphian Way on Bay Farm Island. Parking is available at the terminal, along with 16 electronic shared-use bike lockers. The Harbor Bay Terminal had around 28,000 boardings in February 2020.⁸ Ferry service is provided to the San Francisco Ferry Building and South San Francisco. In 2019, nine ferries departed from the Harbor Bay Terminal on a typical weekday.⁹

Shuttle Services

The Alameda Loop Shuttle is a free shuttle service operated by the City of Alameda. Three shuttle routes provide access to shopping centers and medical facilities throughout Alameda, including Alameda Hospital, Alameda Main Library, Alameda Theater, Kaiser Permanente, Mastick Senior Center, and South Shore Center. The shuttles operate on Tuesday to Thursday, with different routes for each day, from 8:30 AM to 4:00 PM, with 30-minute headways. In February 2020, around 900 riders used the Alameda Loop Shuttle. Figure TRA-3 shows the three different routes.

Paratransit Services

AC Transit and BART, as fixed-route operators, are federally mandated by the Americans with Disabilities Act (ADA) to provide complementary paratransit services that mirror the fixed-route bus/rail services that they offer. East Bay Paratransit is a service of both AC Transit and BART that provide all regional ADA paratransit trips.

⁸ San Francisco Bay Area Water Emergency Transportation Authority Board of Directors Meeting. Available: <https://weta.sanfranciscobayferry.com/filebrowser/download/497>. Accessed September 18, 2020.

⁹ San Francisco Bay Ferry Schedule. Available: <https://sanfranciscobayferry.com/sites/sfbf/files/masterschedule110419b.pdf>. Accessed September 24, 2020.

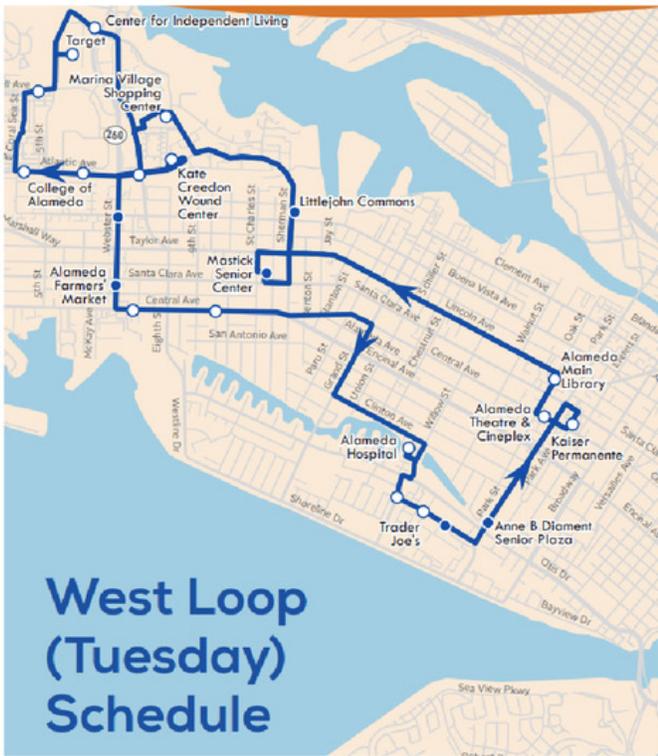


Figure TRA-3

Alameda Loop Shuttle Routes

Source: City of Alameda, 2021

The LIFE ElderCare service provides door-to-door transportation services for people who live in Alameda County and have no one to help them with transportation and essential errands either some or all the time.

Pedestrians

In 2013, the City of Alameda adopted a Complete Streets Policy that formalized the City's vision of a community in which adults and children could walk or bike to meet their travel needs and improve their health and the environment. The City is currently developing the *Alameda Active Transportation Plan* (ATP), which will update both the existing *Pedestrian Plan* (2009) and *Bicycle Master Plan* (2010). The ATP will provide recommendations for walking and biking infrastructure and support programs to ensure walking and biking are viable modes of transportation. The City is also developing a Vision Zero Action Plan to increase street safety.

The overall Citywide pedestrian network is mostly built out. Most streets on Alameda and Bay Farm Islands include at least a 4-foot-wide sidewalk (the minimum required for ADA compliance) on one or both sides. Uni-directional and bi-directional curb ramps exist at many intersections within the City; the bi-directional curb ramps tend to be at streets with high pedestrian volumes, such as Webster and Park Streets. Figure TRA-4 shows the existing and proposed pedestrian facilities in Alameda, including the location of signalized intersections and enhanced crosswalks with rectangular rapid flash beacons (RRFB).

Notable gaps in the pedestrian infrastructure include within Alameda Point (west of Main Street), and on Bay Farm Island, as many of the local streets around Mecartney Road do not have sidewalks. All the bridges connecting to the island provide a sidewalk or a separated path. The Posey Tube has a raised narrow walkway that is shared by pedestrians and bicycles, which requires bicyclists to dismount to pass other bicyclists or pedestrians.

The San Francisco Bay Trail runs through Alameda, with a trail circling around Bay Farm Island and along the south coast of Alameda Island adjacent to Shore Line Drive.¹⁰ The Bay Trail serves as a connection between Alameda and Oakland, with a planned trail expansion to the bicycle/pedestrian path in the Posey Tube and along Tilden Way to the Fruitvale Avenue Bridge.

¹⁰ San Francisco Bay Trail, "San Leandro to Bay Farm Island" and "Alameda and Oakland," Accessed September 18, 2020 at: <https://baytrail.org/get-on-the-trail/map-by-number/alameda-and-oakland/> and <https://baytrail.org/get-on-the-trail/map-by-number/san-leandro-to-bay-farm-island/>.



Figure TRA-4

Existing and Proposed Pedestrian Facilities

Source: City of Alameda, 2021

Major planned pedestrian improvements include the Cross Alameda Trail, which will serve as an east-west pedestrian route between Seaplane Lagoon at Alameda Point and the Fruitvale Avenue Bridge. The Cross Alameda Trail is currently being constructed in phases. Around 40 percent of the trail has been completed, with the segment between Main Street and Constitution Way being the most recently completed.¹¹

In summer of 2020 and in order to support outdoor seating at restaurants and businesses in response to COVID-19, the City of Alameda restriped a three-block stretch of Park Street between Tilden Way and Encinal Avenue and a three-block stretch of Webster Street between Central and Lincoln Avenues. On each street, the striping converted the street from four to two travel lanes, which allowed the relocation of the on-street parking lanes into the two eliminated travel lanes and extension of the sidewalk into the original parking lanes. Left-turn lanes were added at some intersections.

The City also participates in the Alameda County Safe Routes to School program, which encourages families to walk, bike, carpool, or take transit to school. Safe Routes to School Maps are provided for some of the schools to show the recommended routes to school.

Bicycles

The following four classes of bikeway facilities are defined in Chapter 1000 (Bicycle Transportation Design) of the Caltrans *Highway Design Manual*:

- **Class I (Bike Path)** – Provides a completely separated right-of-way for the exclusive use of bicyclists and pedestrians, with minimized cross-flows by motorists. These facilities provide completely separate right-of-way and are designated for the exclusive use of bicyclists and pedestrians with vehicle cross-flow minimized. Existing Shared-Use Paths include the San Francisco Bay Trail and along Ralph Appenzato Memorial Parkway.
- **Class II (Bike Lane)** – Provides a designated lane for exclusive one-way bicycle travel within the paved area of the roadway. Bicycling lanes provide a restricted right-of-way and are designated for the use of bicyclists with a striped lane on a street or highway. Bike lanes are generally 5 feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted. Existing Bike Lanes include Broadway, Central Avenue, Santa Clara Avenue, Grand Street, Mecartney Road, Aughinbaugh Way, Doolittle Drive, Main Street, and Marina Village Parkway.
- **Class III (Bike Route)** – Provides signage designating a shared roadway between bicycles and automobiles. Bicycling routes provide a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles. Class III routes also may be marked by shared lane pavement markings (also known as “sharrows”), which provide

¹¹ City of Alameda Status Report on Transportation May 2020. Available at: https://www.alamedaca.gov/files/sharedassets/public/alameda/transportation/quarterlyreports/6a-status-report-transportation-may-2020_final.pdf. Accessed September 18, 2020.

guidance for where bicycles are expected within vehicle travel lanes. Existing Bike Routes include San Jose Avenue, Oak Street, and Bayview Drive.

- **Class IV (Separated Bikeway)** – Provides a right-of-way for the exclusive use of bicycles and includes a separation, such as parking lane, between the bikeway and roadway. Existing Separated Bikeways include Shore Line Drive and Westline Drive.

Figure TRA-5 shows the existing and planned bicycle facilities and the City's trail network.

As part of the ATP effort, a list of planned bicycle facilities to be constructed between 2020 and 2024 has been released.¹² As shown on Figure TRA-5, a mix of facility types, including bike lanes, separated bikeways, and shared-use paths are planned. New bike lanes and separated bike lanes are planned for Pacific Avenue, Otis Drive, Ferry Point, 5th Street, Clement Avenue, various streets in Alameda Point, and Central Avenue. New shared-use paths/waterfront trails will be built between Bette Street and 5th Street, between Grand and Willow Streets, and between Broadway and Fruitvale Bridge.

¹² Planned Bicycle Facilities, City of Alameda. Available: https://www.activealameda.org/files/assets/transport/open-house-files/bikenetworksoontobeconstructed_8-5x11.pdf. Accessed September 18, 2020.



Figure TRA-5

Existing and Proposed Bicycle and Trail Facilities

Source: City of Alameda, 2021

10.3. Standards of Significance

Consistent with the *CEQA Guidelines* Appendix G, Environmental Checklist Form and OPR's *Technical Advisory* implementation of the proposed project would result in significant transportation impact if it would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle and pedestrian facilities;
- Result in an increase in Household VMT per capita or Commute VMT per worker, consistent with *CEQA Guidelines* Section 15064.3, subdivision (b);¹³
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Consistent with the OPR's *Technical Advisory*, the following thresholds are used to determine if the proposed project would have a significant impact on VMT (i.e., conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b)):

- Residential uses: Household VMT Per Capita exceeds 15 percent below average baseline rate for the Bay Area region
- Employment uses: Commute VMT Per Worker exceeds 15 percent below average baseline rate for the Bay Area region

10.4. Impacts and Mitigation Measures

This section identifies the transportation and circulation impacts that could result from the adoption and implementation of the General Plan. The assessment of transportation and circulation impacts identified in this chapter is based on the standards of significance listed in Section 10.3.

Alameda General Plan 2040 includes a wide variety of policies which are designed to ensure that the City of Alameda supports State and Regional goals to increase non-auto travel mode share and reduce VMT per capita and per employee by promoting transit-oriented development, transit improvements, and active transportation modes such as walking and bicycling.

Specific policies from the *Alameda General Plan 2040* Land Use Element (LU), Climate Action and Conservation Element (CC), Mobility Element (ME) and Health and Safety Element (HS) that would reduce potential transportation and circulation impacts include the following (not all relevant supporting actions are listed):

¹³ CEQA Guidelines Section 15064.3, subdivision (b), refers to the discontinuation of vehicle level of service (LOS) as an impact metric for transportation analysis and instead recommends the use of VMT; this section gives lead agencies discretion to choose the most appropriate methodology to evaluate a project's VMT.

Policy LU-3 Complete Streets. Promote safe and walkable neighborhoods with inter-connected well-designed streets that serve the needs of all Alamedans and all modes of transportation. (See also Policies ME-1, ME-5, ME-6, ME-7, ME-14, CC-7, and HE-12).

Selected Actions:

- a. **Connectivity.** *Connect neighborhoods and major destinations such as parks, open spaces, the waterfront, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure, and avoid sound walls, gated streets and other similar barriers that separate neighborhoods and decrease physical and visual connectivity.*
- b. **Pedestrian-Friendly Environment.** *Provide wide sidewalks, street shade trees, pedestrian lighting, bus benches and shelters, and other pedestrian amenities to support walking, rolling, strolling, window-shopping and sidewalk dining.*
- a. **Safety.** *Eliminate traffic related fatalities and severe injuries on Alameda streets by providing safe, well-designed pedestrian crossings with adequate visibility for motorists and pedestrians, minimizing curb cuts and driveways that cross public sidewalks and bicycle facilities, providing low-stress bicycle routes, and designing streets to keep automobile travel speeds below 25 miles per hour.*

Policy LU-14 Planning for Climate Change. Prepare for climate change and reduce greenhouse gas emissions regionally and locally. (See also Policies CC-3, CC-4, CC-10 and HE-10).

Actions:

- b. **Sustainable Communities Strategy.** *Maintain consistency between the City's General Plan, the Municipal Code, and the region's Sustainable Communities Strategy Plan Bay Area.*
- c. **State and Regional Programs.** *Continually evaluate City policies, ordinances, and actions, to ensure that the City supports and is an active participant in state and regional efforts to address climate change through greenhouse gas emission reduction, transportation system improvements, and increased affordable housing supply near job centers, public transportation facilities, and other services.*
- d. **Policy LU-15 Housing Needs.** *Provide land appropriately zoned to accommodate local and regional affordable housing needs and support the region's Sustainable Communities Strategy to address climate change as well as housing needs. (See also Policies CC-3, HE-1 and HE-2).*

Policy LU-16 Climate-Friendly, Transit-Oriented Mixed-Use Development. Permit higher-density, multi-family and mixed-use development on sites within walking distance of commercial and high quality transit services to reduce automobile dependence, automobile congestion, greenhouse gas emissions, and energy use; provide for affordable housing; make efficient use of land; and support climate friendly modes

of transportation, such as walking, bicycling, and transit use. (See also Policies LU-16, LU-33, LU-34, CC-3, CC-10, ME-6, ME-21, HE-5, HE-10 and HE-11).

Actions:

- a. **Transit-Oriented Zoning.** *To support additional ferry service, bus services, and future rail service in Alameda, amend the zoning code to allow for higher-density, mixed-use, multi-family housing in transit-rich locations.*
- b. **Mixed-Use Shopping Centers.** *Amend the zoning code to facilitate the redevelopment and reinvestment in Alameda’s single-use retail shopping centers and large open parking lots with higher density mixed use development with ground floor commercial, service, and office uses, and upper floor multi-family housing.*
- c. **Incentives.** *Utilize strategic infrastructure investments, public lands, public/private partnerships, and density bonuses and waivers to incentivize and support mixed-use, transit-oriented development in transit rich locations.*
- d. **Transportation Demand Management Programs.** *Require new developments to include transportation services and facilities to support the City’s mode shift goals.*
- e. **Parking Requirements.** *Amend the Municipal Code to replace minimum parking requirements with maximum parking requirements to disincentivize automobile ownership and reduce construction and land costs to help make housing more affordable.*

Policy CC-3 Coordinated Regional and Local Planning. Maintain consistency between local and regional plans to reduce greenhouse gas emissions regionally and locally. (See also Policies LU-14, ME-15, HS-3, HS-16, and HS-63).

Actions:

- a. **City Government Leadership.** *Promote climate friendly policies, standards, practices, technologies and purchasing in all City facilities and operations.*
- b. **State and Regional Programs.** *Support and participate in state and regional efforts to address climate change through greenhouse gas emission reduction, affordable housing, transportation system improvements, and increased housing supply near job centers and existing regional transportation infrastructure.*
- c. **State and Regional Funding.** *Advocate for and support state and regional efforts to provide funding for greenhouse gas reduction, transportation improvements and climate change adaptation at the local level.*
- d. **Sustainable Communities Strategy.** *Maintain consistency between the City’s General Plan and Municipal Code and the regional Sustainable Communities Strategy.*
- e. **Documentation and Open Data.** *Share data in machine-readable formats along with other lessons learned from responding to the climate crisis.*

Policy CC-7 Climate-Friendly Active Modes of Transportation. Reduce greenhouse gas emissions from transportation by improving the local roadway network to support all mobility choices while specifically encouraging walking and bicycling. (See also Policies LU-3, ME-8, ME-14 and ME-23).

Actions:

- a. **Active Transportation Plans.** *Maintain, regularly update and implement bicycle and pedestrian improvement plans identified in the Mobility Element of the General Plan, the Transportation Choices Plan and the Active Transportation Plan.*
- b. **Prioritize Safety.** *Promote the creation of a safe environment for bicycling and walking by establishing a goal of zero annual fatalities and severe injuries for bicyclists and pedestrians using Alameda’s roadway network.*
- c. **Complete Streets.** *Ensure that all streets are designed to provide a safe and convenient environment for all modes, including bicyclists, people using mobility devices such as wheelchairs or walkers, and pedestrians. Adequately maintain sidewalk conditions to avoid tripping hazards.*
- d. **Safe Routes to School.** *Increase walking and biking to school by developing and improving safe routes to schools and out-of-school programs.*
- e. **Mobility for All.** *Prioritize roadway network improvements that increase mobility and equitable access for all residents, especially low-income individuals, youth, seniors, individuals with disabilities, and other vulnerable residents.*
- f. **Connectivity and Inclusiveness.** *Connect neighborhoods and major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure. Minimize sound walls, gates and other barriers that separate neighborhoods and decrease physical and visual connectivity throughout the city.*
- g. **Access to the Shoreline.** *Expand and improve pedestrian and bicycle access to the waterfront and recreational facilities throughout Alameda.*
- h. **Access to Oakland.** *Improve connections for all modes, including transit, bicycle and pedestrian connections to Oakland.*
- i. **West Alameda to Jack London Square Bicycle and Pedestrian Bridge.** *Continue to work with Oakland, Caltrans, the Alameda County Transportation Commission, the State of California, and the US Coast Guard to design, fund, and construct a bike and pedestrian bridge from West Alameda to Jack London Square in Oakland.*

Policy CC-8 Transit Use. Reduce automobile pollution and greenhouse gas emissions by increasing transit use. (See also Policy ME-16).

Actions:

- a. **Partnerships.** Collaborate and partner with AC Transit, Water Emergency Transportation Authority (WETA), BART, community groups, and employers to provide expanded and more convenient transit services throughout the community as well as to downtown Oakland, San Francisco, and the BART system.
- b. **Convenience and Frequency.** Work with AC Transit to provide convenient and frequent bus service within a quarter mile of every Alameda residence and business during normal commute hours.
- c. **Alameda Easy Pass.** Work with AC Transit and WETA to develop and fund an "Alameda EasyPass" program that would provide every Alameda resident with a pass for use on any bus or ferry.
- d. **Transit Connections.** Improve connections between bus transit and water transit facilities and services, such as a cross-town bus service connecting east and west Alameda to the Ferry Terminal services at Alameda Point.
- e. **Oakland Connections.** Establish water shuttle service to connect commuters, pedestrians and bicyclists to Oakland and reduce the need to use automobiles to cross the estuary.
- f. **Transit Priority.** Evaluate the creation of signal priority lanes, transit-only lanes, and queue jump lanes to make transit corridors more efficient and effective.
- g. **First and Last Mile Connections.** Improve safety and access for shared and active transportation around major transportation nodes.
- h. **Alameda BART.** Continue to work with BART to include an Alameda BART station in the design of BART's plan for a second San Francisco Bay crossing connecting Oakland and San Francisco.

Policy CC-9 Vehicle Sharing. Support and encourage vehicle sharing to reduce the demand for vehicle parking and increase access to mobility. (See also Policy ME-17).

Actions:

- a. **Alternative Vehicle Share Programs.** Support alternative vehicle share programs, such as bike share, car share, and scooter share programs.
- b. **Carpooling.** Consider transit and carpool lanes and other methods to support and incent the use of shared vehicles.
- c. **Carpool Parking.** Support the provision of preferential parking spaces for carpool vehicles in public parking lots and within private commercial development that are providing shared vehicle parking.

Policy CC-10: Climate-Friendly, Walkable and Transit-Oriented Development. Reduce reliance on automobile use and reduce vehicle miles traveled by prioritizing walkable, transit-oriented, medium and high density mixed-use development in transit-oriented areas and commercial corridors. (See also Policies LU-33, LU-34 and ME-21).

Actions:

- a. **Density, FAR and Transit.** *When zoning property for commercial, residential or residential mixed-use near transit stops, generally zone for more density and/or floor-area-ratio (FAR) on the parcels closest to the highest-quality existing or planned transit stops to encourage the most efficient use of land and public resources while minimizing vehicle miles traveled.*
- b. **Parking Requirements.** *Revise off-street parking requirements to replace minimum requirements with maximum requirements to limit the amount of onsite parking allowed with each development to reduce reliance on the automobile and automobile ownership.*
- c. **Transportation Demand Management Ordinance.** *Prepare and adopt a Transportation Demand Management Ordinance requiring new development to actively address the mobility of new residents and employees, including but not limited to contributing to annual operations and capital improvements for supplemental transit, water shuttle, land based shuttle services and improvements to the bicycle and pedestrian network.*
- d. **Pedestrian Only Areas.** *Create pedestrian-only areas to support economic activity in and around new development.*

Policy CC-11 Climate-Friendly Employment Commute Behavior. Encourage residents to telecommute or work from home to reduce vehicle miles traveled, greenhouse gas emissions, and commute hour congestion. (See also Policies LU-2, LU-13 and HE-4).

Actions:

- a. **Home Occupations.** *Implement municipal code amendments to allow for a wider variety of “home occupation permit” types in residential zoning districts.*
- b. **Support Telecommuting Professionals.** *Allow and encourage cafes, restaurants, and similar uses that specifically cater to telecommuting professionals in all zoning districts.*
- c. **Flexible Home Office Spaces.** *Allow for and actively encourage the construction of flexible spaces, such as Accessory Units and outdoor spaces to facilitate telecommuting from home in residential zoning districts.*
- d. **Promote Work-Live Environments.** *Support and encourage “work-live” developments in commercial zoning districts.*
- e. **Telecommuting Work Sites.** *Encourage and permit remote work sites, telecommuting workplaces, and shared work locations within Alameda.*

Policy ME-5 Vision Zero. Maintain and implement Vision Zero as the guiding principle for transportation planning, design of streets and sidewalks, and the maintenance of the public rights-of-way. (See also Policies LU-3 and HS-5).

Actions:

- a. **Action Plan.** Complete, and regularly update, a Plan that summarizes specific changes to policies, practices, enforcement procedures, education efforts, infrastructure improvement priorities, and other action items that will reduce speeding, collisions, and collision severity.
- b. **Institutional Commitment.** Ensure that City staff and officials understand and work to support the City's commitment to Vision Zero; integrate Vision Zero into City driver policies and training; and focus on safety in City vehicle purchases and maintenance.
- c. **Community Support.** Foster community support and responsibility for the safety of people traveling within Alameda through outreach, communications, and partnerships.
- d. **Data.** Improve the use, collection, and organization of data to allow for evaluation and reporting that fosters transparency and creates trust with stakeholders and residents.
- e. **Annual Report.** Prepare an annual report on progress toward the Vision Zero goals, utilizing outcome metrics defined in the Vision Zero Action Plan.

Policy ME-6 Vulnerable Users. When designing, redesigning or resurfacing streets, provide safe and convenient access for vulnerable users including children, seniors, people with disabilities, and people walking and bicycling. (See also Policies LU-2, LU-3, and OS-5).

Actions:

- a. **All Ages and Abilities Network.** Street design and transportation projects should enable people of all ages to navigate the streets safely and confidently and be supported by amenities such as shade and benches.
- b. **Safety First.** When designing streets, the safest treatments should be considered the default starting point, and be degraded only if necessary, and after documenting rationale for the approach.
- c. **Safe Routes to Schools.** Collaborate with parents, schools, the Alameda County Transportation Commission, and AC Transit to identify needed infrastructure, educational and encouragement programs, and enforcement to provide for the safety of students riding the bus, walking and bicycling to school.
- d. **Safe School and Day Care Drop Off Zones.** Work with Alameda Unified School district, private schools, day care centers and other institutions and businesses requiring drop off areas for children to ensure that drop off zones are well planned and ensure the safety of children and parents walking, bicycling, and driving their children to school.
- e. **Safe Crossings.** Reduce the number of pedestrian and bicyclist fatalities and the severity of their injuries by minimizing vehicle turning speeds and intersection crossing distances. Limit automobile parking and other visual obstructions within 20 feet of an intersection to maintain sightlines and

visibility for automobile drivers. Provide high-visibility crosswalk markings and bulb-outs at regular and frequent intervals on arterial and collector streets.

- f. **Construction Zones.** Ensure safe and convenient continuity for pedestrians, bicyclists and transit users when construction occurs in the public right-of-way.
- g. **Space Priorities.** When allocating public right-of-way space, the first consideration shall be for people walking, bicycling, and using transit. Space for on-street parking shall be the lower priority.

Policy ME-7 Safe Streets. Reduce collisions resulting in severe injuries and fatalities on Alameda streets by reducing automobile speeds and decreasing collisions between people driving, riding a motorcycle, biking, walking, or wheeling. (See also Policies LU-2, LU-3, and HS-5 and HS-6).

Actions:

- a. **25 MPH.** Reduce the severity of injuries and reduce fatalities by designing streets for a maximum vehicle speed of 25 miles per hour or less, except for Harbor Bay Parkway and Doolittle Drive.
- b. **High Injury Corridors and Intersections.** Prioritize high injury corridors and intersections for transportation infrastructure maintenance, project development, and implementation.
- c. **School Zones, Construction Zones and Senior Areas.** Where permitted by law, consider limiting automobile speeds to 15 MPH in zones adjacent to schools, construction sites or facilities for seniors.
- d. **Traffic Calming Measures.** Improve livability and safety for residents and enhance mobility for people walking, biking and using personal mobility devices by reducing automobile speeds in neighborhood and school areas with the use of traffic calming techniques such as mini-roundabouts, speed tables and cushions, chicanes, sidewalk bulb-outs, and public art.
- e. **Roundabouts.** Increase the use of roundabouts at intersections to improve the safety and lower maintenance costs compared to traffic signals.
- f. **Traffic Signal Timing.** Coordinate the timing of traffic lights and the design of intersections on key corridors to promote safe, efficient, and idle-free vehicle movements when driving at or below 25 miles per hour while disincentivizing vehicle speeds over 25 miles per hour to improve traffic flow while enhancing the safety and convenience of people traveling by bus, by foot, by mobility device, and by bicycle.
- g. **Travel Lane Width.** To reduce speeding, limit lane widths to 10 feet on all streets, except on designated truck routes and streets accommodating AC Transit services where 11 foot lanes are preferable. If no parking is present, one foot may be added to the above to provide shy distance from a vertical curb. Where auto traffic volumes are low, space is constrained, or automobile speeds need to be reduced, further reductions in lane widths

may be considered. Where necessary to accommodate fire prevention aerial apparatus access, protect or improve public safety at specific locations and/or improve transit efficiency, additional clearance may be provided.

- h. **Roadway Widening.** Discourage the widening of existing roadways to create additional automobile travel lanes to accommodate increased automobile traffic volumes, with the exception of increasing transit-exclusive lanes, transit-bicycle exclusive lanes, or non-motorized vehicle lanes, or creating roundabouts.
- i. **Intersection Widening.** Discourage the widening of existing intersections beyond the width of the approaching roadway except for when necessary to create a single exclusive left turn lane, transit exclusive lanes, or non-motorized vehicle lanes, or for the construction of a roundabout.
- j. **Intersection Safety.** To improve safety at stop-controlled or signalized intersections, consider a roundabout design or eliminating right turns on red and adding pedestrian scrambles to existing signals.
- k. **Roundabouts and Traffic Circles.** When considering modification to an intersection, prioritize roundabouts and traffic circles for consideration recognizing that land acquisition needs, operational considerations, or other engineering factors or constraints may result in other intersection solutions on a case-by-case basis.
- l. **Enforcement.** Focus traffic enforcement efforts on high injury corridors and against dangerous moving violations.

Policy ME-9 Emergency Response and Disaster Preparedness. Preserve access for emergency response vehicles to people and property and for evacuation. (See also Policies HS-1, HS-2, and HS-4).

Actions:

- a. **Emergency Response Planning.** Include emergency response needs in all transportation planning, the design of new facilities, and modifications to existing facilities. Establish and sign designated evacuation routes, and provide ongoing education and outreach to ensure that Alameda is evacuation ready. Continue to work with AC Transit and WETA to ensure coordinated services in the event of the need for evacuation.
- b. **Outreach.** Educate the community on disaster preparedness using an all-hazard approach to emergency response.
- c. **Miller-Sweeney Bridge Life Line.** Upgrade the Miller-Sweeney Bridge to meet lifeline standards to ensure that the bridge can be used for the movement of supplies, evacuations and emergency vehicles and to support recovery efforts in the event of a major earthquake.
- d. **Fruitvale Rail Bridge Hazard.** Remove the abandoned Fruitvale Rail Bridge which poses a seismic hazard to the city's lifeline Miller-Sweeney Bridge.

Consider replacing the hazardous structure with crossing for transit, bicycles and pedestrians.

Policy ME-10 Movement. Provide for the safe and efficient daily movement of people, goods, and services. (See also Policies LU-3, OS-7 and HS-6).

Actions:

- a. **Complete Streets.** *Maintain a multimodal system of complete streets and multi-use paths designed for safe access for all modes of transportation and users of all ages and abilities.*
- b. **Best Practices.** *Rely on up-to-date, forward-looking design guides and manuals as well as countermeasure best practices such as those produced by the Federal Highway Administration and National Association of City Transportation Officials (NACTO) in the design of all transportation projects.*
- c. **Self-Enforcing Design.** *Design streets and rights-of-way to support vehicle speeds of 25 miles per hour or less, efficient bus movements and safe bicycle and pedestrian movements, to reduce the need for active enforcement and the risk of bias.*
- d. **Pilot Projects.** *Experiment with low cost, easily reversible street design changes, such as temporary “slow streets”, weekend street closures, lane restriping, and low cost barriers to test new best practices or community ideas that support safe, multimodal transportation.*

Policy ME-13 Alameda Street Grid. Manage and extend the Alameda street grid to maintain the character of Alameda, reduce traffic, and maximize mobility, access, and safety for all modes of transportation.

Actions:

- a. **Cross Alameda Trail.** *Complete the Cross Alameda Trail, the major cross town route for people walking and bicycling, from Seaplane Lagoon to the Miller-Sweeney Bridge.*
- b. **Bay Trail.** *Complete the San Francisco Bay Trail along the shoreline and around the perimeter of Alameda.*
- c. **Shoreline to Sea View Bridge.** *Evaluate the feasibility of connecting the South Shore area to Harbor Bay directly via a causeway and drawbridge for pedestrians, bicyclists and micromobility users, reducing trips by 1.5 miles each way.*
- d. **Central Avenue Safety Improvements.** *Complete the Central Avenue Safety project to reduce speeding and improve safety for people walking and bicycling from Pacific Avenue/Main Street to Encinal Avenue/Sherman Street.*
- e. **Mitchell Avenue Extension.** *Complete the Mitchell Avenue extension from Bette Street to Main Street.*

- f. **Clement Avenue Extension.** Complete the Clement Avenue extension from Sherman Street to Grand Street and from Broadway to Tilden Avenue.
- g. **Tilden Avenue.** Reconfigure Tilden Avenue into a 25 mile per hour, complete street with sidewalks, low-stress bikeways and safe pedestrian crossings.
- h. **Rights-of-Way.** Utilize former railroad and public rights-of-way for transportation improvements and extensions to the Alameda street grid and pathway network.
- i. **Block Sizes.** When designing new streets, typical blocks should be between 200 and 400 feet in length to reflect typical, historic, Alameda block sizes.

Policy ME-14 Active Transportation. Reduce traffic, improve public health, increase transportation equity, reduce greenhouse gas emissions, air and noise pollution, increase access to transit, enhance quality of life, and improve the efficiency of the transportation system by making Alameda a city where people of all ages and abilities can safely, conveniently, and comfortably walk, bike, and roll to their destinations. (See also Policies LU-2, LU-3, OS-7, OS-8, and CC-7).

Actions:

- a. **Connectivity and Comfort.** Develop a well-connected, low-stress network of pedestrian and bicycle facilities that are comfortable and well-designed for people of all ages and abilities and seamlessly link with Alameda's key destinations such as schools, designated commercial corridors, grocery stores, parks and transit stops.
- b. **Maintenance.** Regularly maintain the active transportation network for safety and comfort, and to ensure current design standards are being met.
- c. **Community Awareness and Education.** Foster a strong culture of walking and bicycling through public outreach efforts such as community-wide campaigns, community-implemented street art and placemaking (such as painted bulbouts and intersections), and ongoing education in collaboration with community organizations and neighborhood groups.
- d. **Equity.** Ensure that comfortable bicycle and pedestrian facilities and programs are implemented equitably throughout the city.
- e. **Safety.** Increase the safety of all people bicycling and walking by improving the design of streets and active transportation facilities, educating the public, and enforcing traffic laws.
- f. **Design for Context.** Develop a pedestrian-specific street typology to apply to all city streets, based on street function and characteristics, and match recommended design treatments to each typology.
- g. **Supportive Infrastructure.** Ensure the installation of plentiful secure short and long-term bicycle parking, including on-street bicycle corrals, throughout the city. Develop and implement a citywide bicycle wayfinding signage program.

- h. **Low-stress Bikeways.** *Prioritize low-stress biking infrastructure such as separated bicycle lanes, bicycle boulevards (Slow Streets) and bike trails, which is comfortable for the majority of the community. Build these facilities with enough width to comfortably and safely support all people and devices into the future, including cargo bikes, electric bikes, and scooters, all operating at different speeds. Provide separated bicycle lanes instead of unprotected, standard bicycle lanes, unless not feasible.*
- i. **Separate Pathways.** *Where there is adequate space and existing or anticipated future demand, build separate facilities for people walking and bicycling, given their different speeds.*
- j. **Safer Intersections.** *Use hardscape treatments and traffic signals to separate people walking and bicycling from motorists at busy and larger intersections.*
- k. **Legislative Agenda.** *Support strong regulatory efforts to prioritize safety for people walking or biking, including efforts to improve and accelerate Caltrans' complete streets policies and allow the thoughtful deployment of automated speed cameras.*

Policy ME-16 Transit. Improve mobility and reduce greenhouse gas emissions and air and noise pollution by making Alameda a city where more people have access to safe, reliable, high quality transit. (See also Policy CC-8).

Actions:

- a. **Partnerships.** *Collaborate and partner with AC Transit, the Water Emergency Transit Agency (WETA), BART, the Alameda Transportation Management Associations, community groups, and employers to provide expanded and more convenient transit services throughout the city as well as to downtown Oakland, San Francisco, and the BART system.*
- b. **Travel Time.** *Incentivize transit use by making on- and off-Island transit ride times faster than or comparable to on- and off-Island drive times through traffic management and parking management.*
- c. **Bus Transit.** *Work with AC Transit to provide convenient and frequent bus service within a 1/4 mile of every Alameda resident and business and establish a regular cross Alameda service connecting east Alameda and Park Street to west Alameda and the Alameda Point Ferry Terminals and key retail destinations.*
- d. **Land Use.** *Coordinate transit investments with land use decisions in order to maximize returns, enhance livability, and minimize congestion. Adopt development regulations that discourage automobile ownership in new projects.*
- e. **Water Transit.** *Expand ferry services from Alameda to San Francisco, the Peninsula, and other locations throughout the Bay Area. Consider the use of hovercraft and other water-based transportation technologies to connect the south shore of Alameda to employment centers and other destinations that cannot be served by traditional ferries.*

- f. **BART to Alameda.** Continue to work with BART to include an Alameda BART station in the design of BART's plan for a second San Francisco Bay crossing connecting Oakland and San Francisco.
- g. **Transit Connections.** Improve connections between bus transit and water transit facilities and services, such as a cross-town bus service connecting east and west Alameda to the Ferry Terminal services at Alameda Point.
- h. **Citywide "Transit Pass".** Work with AC Transit, WETA and MTC to develop a multi-modal fare payment system that could be used to develop an "Alameda Transit Pass" program that would provide every Alameda resident and employee with a pass for use on any bus or ferry at any time.
- i. **Bus Transit Priority Infrastructure.** Provide transit priority lanes, transit signal priority, and transit queue jump lanes, and make traffic signal upgrades including coordination, to make transit faster and more reliable.
- j. **Bus Stops.** Ensure consistency with AC Transit Multimodal Design Guidelines and move bus stops to the far side of the intersection to increase safety and improve bus speeds and reliability and work to make all bus stops fully ADA-accessible to accommodate those with mobility challenges.
- k. **Committees.** Maintain committees such as the Interagency Liaison Committee that promote partnerships with transit service providers to improve transit services for Alameda.

Policy ME-17 Shared Mobility. Promote shared mobility devices programs such as bicycle share, car share, and electric scooter share programs that reduce the need for an automobile trip. (See also Policy CC-9).

Actions:

- a. **Car Share.** Continue to partner with car share companies to provide car share services in all Alameda neighborhoods.
- b. **Scooter Share.** Develop a permitting system to all electric scooter companies to operate in Alameda.
- c. **Bike Share.** Continue to explore options and partners to provide bicycle share services in Alameda.

Policy ME-20 New Development. Require that new development support citywide traffic reduction, greenhouse gas reduction, and sustainable transportation. (See also Policies LU-16 and CC-10).

Actions:

- a. **Transportation Demand Management Ordinance.** Prepare and adopt a Transportation Demand Management Ordinance requiring new development to actively meet the mobility needs of residents and employees, including but not limited to contributing to annual operations and capital improvements for supplemental transit, water shuttle,

landbased shuttle services and improvements to the bicycle and pedestrian network.

- b. **Alameda Transportation Management Association.** Expand the Alameda Transportation Management Association to provide transportation services to all new developments, existing business associations and neighborhoods to improve citywide transportation service options and reduce greenhouse gas emissions and vehicle miles traveled in Alameda.

Policy ME-21 Parking and Curbside Management. Manage parking and allocate curb space to reduce congestion, reduce vehicle miles traveled, and increase safety. (See also Policy LU-34).

Actions:

- a. **Availability.** Manage parking pricing to ensure that approximately 15% of public parking is always available, allowing people to find parking faster and reducing emissions and potential conflicts with pedestrians while drivers circle for parking.
- b. **Long-Term Parking.** Ensure that long-term parking pricing is equitable and considers the impact of the fees on lower income or other vulnerable users.
- c. **On-street Metered Parking and Surface Lots.** Utilize parking pricing to encourage one or two open spots on every block, and a few open spots in city-owned surface lots to minimize circling for parking.
- d. **Ferry Terminal Parking.** Establish daily parking fees at all of Alameda's regional ferry terminals. Periodically adjust pricing to ensure that some spaces are always available for riders on later boats.
- e. **Reinvest Funds.** Equitably reinvest net proceeds from parking revenues in improved access and amenities in the community and programs such as rebates or need-based parking passes.
- f. **Disability Parking.** Provide appropriate, well-located, accessible parking for mobility impaired drivers.
- g. **Carpool Parking.** Incentivize and reward carpooling by providing carpool-only parking spaces in locations throughout Alameda such as major employment sites and at ferry terminals and transit transfer locations.
- h. **Bicycle and Scooter Parking.** Provide plentiful and secure parking for micromobility devices (i.e. scooters and bicycles). Where possible, include valet programs funded by parking fees at transportation transfer points, such as the ferry terminals and along commercial transit corridors.
- i. **Shared Off-Street Parking.** Revise development requirements and ordinances to facilitate shared and well managed off street parking facilities.
- j. **Neighborhood Parking Permits.** Continue to provide opportunities for neighborhood preferential parking permits.

Policy ME-22 Environmentally Friendly Transportation. Reduce traffic, pollution, and greenhouse gas emissions by reducing reliance on the single occupancy vehicle and reducing vehicle miles traveled (VMT). (See also Policies CC-6, CC-7, CC-8, CC-9, CC-10, and CC-11).

Selected Actions:

- a. **Climate-Friendly Modes of Transportation.** Reduce greenhouse gas emissions from transportation by improving the local roadway network to support environmentally sensitive mobility choices such as transit, walking and bicycling.
- b. **Transit Use.** Reduce automobile greenhouse gas emissions by increasing transit use.
- c. **Vehicle Sharing and Carpooling.** Reduce automobile greenhouse gas emissions by supporting and encouraging vehicle sharing and carpooling.
- d. **Climate-Friendly, Walkable and Transit-Oriented Development.** Reduce reliance on automobile use and reduce vehicle miles traveled by requiring walkable, transit-oriented, medium and higher-density mixed-use development in transit-oriented areas and along commercial corridors such as much of Park Street, Webster Street and Otis Drive, as well as near ferry terminals.
- e. **Climate-Friendly Employment Commute Behavior.** To reduce vehicle miles traveled, greenhouse gas emissions, and commute hour congestion, make Alameda an ideal location to work from home in the Bay Area by collaborating with employers, Island businesses, and improving work-from-home infrastructure.

Policy HS-26 Fire Prevention Capabilities. Maintain the City's fire prevention, disaster preparedness, and fire-fighting and emergency medical service capabilities.

Policy HS-27 Response Time. Maintain a response time of 5 minutes, 20 seconds, 90 percent of the time, for the first fire unit to be on-scene of a fire.

IMPACTS

Impact 10-1

The Alameda General Plan 2040 would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle and pedestrian facilities? (LTS)

Consistent with Public Resources Code Section 21099(b)(1), *Alameda General Plan 2040* identifies the goals, policies, and actions necessary to reduce the impact of the transportation system on the environment, reduce greenhouse gas emissions consistent with State, Regional and Local Plans, such as the Climate Action and Resiliency Plan and Transportation Choices Plan, improve the multi-modal transportation network, and diversify land uses.

The *Alameda General Plan 2040* Mobility Element states:

A well-designed, safe, multimodal transportation system that meets the needs of all residents, visitors, and business owners, employees, and customers regardless of income, background, ability, neighborhood, or mode of travel is essential to being a healthy, equitable and inclusive city and to protecting the environment and responding to the climate crisis.

In support of this goal, *Alameda General Plan 2040* includes a wide variety of policies and supporting actions. As shown above, the General Plan includes specific policies to ensure that City actions are consistent with State and Regional planning efforts to reduce the impact of the transportation system on the environment. Specifically, Policies ME-10, ME-13, ME-14, ME-15, and ME-17 aim to facilitate the implementation of planned pedestrian and bicycle projects, which encourage the use of these modes and would be consistent with the Alameda ATP, Policies ME-15 and ME-16 would encourage the use of transit modes by aiming to increase transit service provision and support efficient operation of transit, and Policies ME-3, ME-5, ME-6, ME-7, and ME-10 focus on improving the safety of all users, especially the most vulnerable users, including pedestrians and bicyclists. Combined with the above policies, Policies ME-20, ME-21, and ME-22 focus on reducing VMT through various actions oriented towards improving the transit, pedestrian, and bicycling conditions, which is consistent with state and regional policies, such as SB7 43 and Plan Bay Area 2040.

The Mobility Element policies are supported by complementary policies in other elements of the *Alameda General Plan 2040*, such as Policies LU-14, LU-15, and LU-16 in the Land Use and City Design Element and Policies CC-3, CC-4, CC-7, CC-8, CC-10, and CC-11 in the Conservation and Climate Action Element, which together promote and encourage the Mobility Element goal.

Alameda General Plan 2040 policies and associated actions focus on promoting and encouraging the use of transit, bicycle, and pedestrian modes over single-occupant automobiles, and transit oriented, in-fill urban development along the major transit and commercial corridors to encourage bicycling, walking, and shorter trips, as well as transit trips.

Alameda General Plan 2040 is consistent with programs, plans, ordinances, and policies addressing the circulation system. The impacts would be ***less-than-significant***.

Mitigation Measure 10-1

None required.

Impact 10-2

The Alameda General Plan 2040 would result in average household VMT per capita or commute VMT per worker that exceeds 15 percent below the average baseline rate for the Bay Area region. (SU)

The VMT forecasts generated for this CEQA assessment were produced using the Alameda CTC Model. The Model is used to estimate the household VMT per capita for residential uses and the commute VMT per worker for the following two scenarios:

- **Baseline (2020) Conditions** - This scenario represents the land uses and transportation network within and outside of Alameda at time of publishing of the NOP for the General Plan EIR.
- **General Plan Buildout (2040) Conditions** - This scenario includes the land uses and planned transportation improvements associated with buildout of the proposed General Plan within the City of Alameda by 2040, as well as the cumulative land use projections and regional planned transportation improvements outside Alameda. Regional planned transportation improvements include funded and approved transportation improvements as documented in the *Plan Bay Area 2040* and included in the Alameda CTC Travel Demand Model.

The Alameda CTC Model uses a four-step modeling process that considers trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and expected changes in the transportation network. The Alameda CTC Model assigns all predicted trips within, across, to, or from the nine-county San Francisco Bay Area region to the roadway network and transit system by mode (i.e., single-occupant or carpool vehicle, biking, walking, or transit) and transit carrier (i.e., bus, rail, ferry) for a given scenario.

The Alameda CTC Model incorporates land use data and transportation network improvements consistent with *Plan Bay Area 2040* (i.e., the Sustainable Communities Strategy). The base-year land use inputs were modified to reflect current uses within Alameda. The 2040 land use database in the Model was modified to reflect the buildout assumptions of the proposed General Plan.

Table TRA-7 summarizes the number of households, population, and the number of jobs in Alameda under Baseline (2020) and General Plan Buildout (2040) conditions assumed for this analysis. Most of the expected increases in residential units are expected to be in multi-family housing in the Alameda Point and the Northern Waterfront PDAs as well as the City's shopping center sites, such as the South Shore Shopping Center and the Marina Village, and the main commercial corridors along Park and Webster Streets. Most of the job growth is expected to be in the two PDAs at Alameda Point and the Northern Waterfront, as well as the Harbor Bay and the Marina Village Business Parks.

**Table TRA-7
Land Use Assumptions**

Scenario	Households ^a	Population ^a	Employment ^a
Baseline (2020)	31,329	76,961	32,121
General Plan Buildout (2040)	41,324	99,710	45,138
Net Change	9,995 (32%)	22,749 (30%)	13,017 (29%)

a. Based on the Alameda CTC Countywide Travel Demand Model
Source: Fehr & Peers, 2021.

Table TRA-8 summarizes the household VMT per capita for the residential uses and the commute VMT per worker for employment-based uses for the City of Alameda as estimated by the Alameda CTC Model for the Baseline (2020) and General Plan Buildout (2040) conditions. The table also compares the citywide VMT metrics with the 2020 and 2040 Bay Area regional averages and a VMT 15 percent below the 2040 regional averages, which is the threshold used to determine the significance of the VMT impact.

The Alameda CTC Travel Demand Model finds that household VMT per capita and commute VMT per worker would both decrease between 2020 and 2040 under Alameda General Plan 2040. The average household VMT per capita in Alameda is forecast to decline from Baseline (2020) to General Plan Buildout (2040) conditions with the proposed General Plan by about 3 percent. The average household VMT per capita in Alameda under both the Baseline (2020) and General Plan Buildout (2040) conditions is at least 15 percent below the average Bay Area Region household VMT per capita. As such, the proposed General Plan would have a **less than significant impact** on household VMT per capita.

The average commute VMT per worker in Alameda is forecast to decrease from Baseline (2020) to General Plan Buildout (2040) conditions with the proposed General Plan by about 7 percent. Although the reduction in commute VMT per worker results in positive environmental benefits (lower VMT equates to lower GHG emissions), the average commute VMT per worker of 17 miles is only 6 percent below the 2020 Bay Area average, and only 7 percent below the projected 2040 Bay Area average.

Table TRA-8
Average Vehicle Miles Traveled

Scenario	Average Household VMT per Capita ^a	Average Commute VMT per Worker ^a
Alameda Baseline (2020)	16.0	18.3
General Plan Buildout (2040)	15.6	17.0
Bay Area Region Baseline (2020)	19.8	18.1
Bay Area Region Baseline (2040)	19.1	18.3
Bay Area Region (2040) minus 15% (threshold of significance)	16.2	15.5
Below Threshold?	Yes	No

a. Based on the results of the Alameda CTC Countywide Travel Demand Model.
Source: Fehr & Peers, 2021.

Therefore, consistent with the OPR's *Technical Advisory*, this analysis finds that Alameda's commute VMT per worker is not 15 percent below the average baseline rate for the Bay Area region, resulting in a **significant and unavoidable transportation impact**.

Average commute VMT per worker can be reduced through a variety of Transportation Demand Management (TDM), land use, and transportation programs and plans, such as:

- Increasing job opportunities in Alameda for Alameda residents that are currently commuting off-island for jobs.
- Improving transit, bus, and ferry access regionally and locally, so that more Alameda employed residents use transit instead of automobiles and more workers of on-island businesses commute to work in Alameda by transit, instead of by automobile.
- Improving pedestrian and bicycle access between transit facilities, job centers, and residential areas.
- Requiring TDM programs of all new development (both residential development and commercial development that creates employment opportunities) to incentivize transit use and discourage automobile use for commute trips (examples include providing AC Transit passes to all residents in new residential developments or to all employees in new businesses).

As documented above, *Alameda General Plan 2040* policies support and encourage all of the necessary actions to reduce worker VMT. *Alameda General Plan 2040* encourages construction of new employment-based uses in proximity to robust multi-modal transportation infrastructure, such as the Alameda Point and Harbor Bay Ferry Terminals which will result in a reduction of commute VMT per worker between Baseline (2020) and General Plan Buildout (2040) conditions. Policies such as Policies ME-13, ME-14, ME-16, ME-17, ME-22, LU-2, LU-3, CC-7, CC-8, CC-9, CC-10, and CC-11 would directly or indirectly result in the reduction of VMT by improving the infrastructure for travel by walking, bicycling, and transit within Alameda and connecting to outside of Alameda. In addition, Policies such as ME-20, ME- LU-16, LU-34, CC-10 will d reduce the VMT generated by new developments through requiring the implementation of TDM plans and limiting parking supplies.

Although the implementation of these policies will reduce the commute VMT per worker in Alameda, the Alameda CTC Model does not account for implementation of some of these policies because their effectiveness cannot be quantified at this time. Effectiveness of policies, such as Policy ME-20, which require future developments to implement a TDM plan, cannot be quantified at this time because the specific strategies that would be included in the TDM plan for each development is not known at this time and the effectiveness of TDM strategies is dependent on the specific use and settings of the development which are not known at this time. Although implementation of a robust TDM plan can be expected to considerably reduce the VMT generated by a typical office development served by local and regional multi-modal transportation infrastructure, this EIR VMT analysis does not make assumptions about the ultimate content and effectiveness of future TDM programs over the course of the next 20 years and therefore conservatively assumes that the VMT reduction due to implementation of TDM plans would not be adequate to reduce the impact to a less-than-significant level.

The program-level VMT impact for employment-based uses described above does not preclude the finding of less-than-significant impact for future development projects that achieve the applicable VMT thresholds of significance.

Due to the programmatic nature of the proposed project and the inability to accurately estimate the effectiveness of future TDM programs, the impact is conservatively considered ***significant and unavoidable with mitigation***.

Mitigation Measure 10-2

None feasible.

Impact 10-3

Implementation of *Alameda General Plan 2040* would not substantially increase hazards due to a geometric design feature or incompatible land uses. (LTS)

Alameda General Plan 2040 Mobility Element includes Goal 2 and Policies ME-5, ME-6, and ME-7 to reduce hazards due to design, travel speed, or incompatible land uses; make Alameda's streets safer for residents of all ages and abilities; and eliminate fatalities and serious injuries on Alameda's roads and streets consistent with the City's Vision Zero Action Plan. The safety related policies of the Mobility Element are supported by complementary policies in other elements of the *Alameda General Plan 2040*, such as Policy LU-3 in the Land Use and City Design Element and Policy CC-7 in the Conservation and Climate Action Element. The implementation of these policies and related actions would promote the design of improvements to the transportation network that improve safety for all modes of travel.

Since the proposed General Plan is a policy-level plan, all future public and private improvement projects and infrastructure facilities would be subject to additional review and approval to ensure safety. Through the design and engineering review process, City staff evaluates development proposals and street improvements to ensure public health and safety by ensuring adequate and safe sidewalks or crosswalks, dedicated and protected bicycle facilities, realigning sharp curves, prohibiting certain movements, signaling intersections, and improving sight distance, among other measures. All new streets and redesign of existing streets are designed according to applicable federal, State, and local design standards, such as the *California Manual on Uniform Traffic Control Devices* and the *California Highway Design Manual*.

As a result, the impact would be *less-than-significant*.

Mitigation Measure 10-3

None required.

Impact 10-4

Implementation of the *Alameda General Plan 2040* would not result in inadequate emergency access. (LTS)

Alameda General Plan 2040 includes Policies ME-7 and ME-9 in the Mobility Element and Policies HS-26 and HS-27 in the Health and Safety Element to ensure adequate emergency access and response. The implementation of these policies and related actions will ensure adequate emergency access and response.

In addition, the proposed General Plan is a policy-level plan that does not directly address project-level components that will be required to maintain adequate emergency access. City of Alameda staff, including emergency responders, review all development applications to ensure that

applicable requirements are met, including provisions for adequate access for emergency responders and response vehicles, consistent with the Fire Code. Considering the project's accommodation of future traffic, established procedures for reviewing project-level emergency access needs, and in consideration of the General Plan policies addressing emergency access and response, impacts would be ***less-than-significant***.

Mitigation Measure 10-1

None required.

CUMULATIVE IMPACTS

As discussed under Impact 10-2, the implementation of the proposed project would result in a decrease in the average commute VMT per worker in horizon year 2040 compared to the Baseline (2020) conditions but not 15 percent below the 2040 Bay Area regional average. Therefore, the commute VMT per worker is also a cumulative impact that is significant and unavoidable.

11. AIR QUALITY

11.1 Introduction

This chapter presents results of an analysis of potential air quality impacts and related health impacts that could result from implementation of the proposed *Alameda General Plan 2040*. This chapter provides an overview of the existing air quality conditions in the City and the region, the air quality regulatory framework, an analysis of potential air quality impacts that would result from implementation of the proposed General Plan, and identification of applicable mitigation measures. The supporting information, methodology, assumptions, and detailed results used in the air quality analysis are provided in Appendix C.

11.2 Setting

REGULATORY FRAMEWORK

This section summarizes the regulatory context for future development that would be facilitated by the proposed General Plan, including the laws, ordinances, regulations, plans, policies, and programs that are implemented at the State and local levels.

Federal

Federal Clean Air Act

The 1970 federal Clean Air Act (and subsequent amendments) (CAA) was enacted for the purposes of protecting and enhancing the nation’s air resources to benefit public health. The CAA required the U.S. Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (NAAQS or “national standards”), which are the concentrations of pollutants—with an adequate margin of safety—to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

Regulation of air pollutants is achieved through both national and State ambient air quality standards, as well as through emissions limits for individual sources. The EPA has established

NAAQS for outdoor concentrations of the following “criteria” pollutants: carbon monoxide (CO),¹ nitrogen oxides (NO_x),² ozone (O₃), sulfur dioxide (SO₂),³ volatile organic compounds (VOCs) as reactive organic gases (ROGs),⁴ coarse particulate matter less than 10 micrometers in diameter (PM₁₀), fine particulate matter less than 10 micrometers in diameter (PM_{2.5}),⁵ and lead. An ambient air quality standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population such as children and the elderly. The goal is for localized project effects not to cause or contribute to an exceedance of the standards. Ambient air quality standards are classified as either “primary” or “secondary” standards. Primary standards define levels of air quality, including an adequate margin of safety, necessary to protect the public health. Secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. In promulgating the NAAQS, the EPA allowed some states the option to develop stricter state standards. Pursuant to this authority, California adopted its own set of stricter standards under the California Clean Air Act (CCAA) of 1988 (described under State Regulations).

Under amendments to the CAA, the EPA has classified air basins, or portions thereof, as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. If there are inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” The CCAA, which is patterned after the federal CAA, also requires areas to be designated as “attainment” or “non-attainment” for the State standards. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the federal standards and one set with respect to the State standards. Table AQ-1 shows the attainment status of the Bay Area with respect to the federal and state ambient air quality standards for different criteria pollutants and also summarizes the related health effects and principal sources for each pollutant.

¹ CO is a non-reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood-burning stoves and fireplaces.

² When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen (NO_x). Nitric oxide (NO) and nitrogen dioxide (NO₂) are the most significant air pollutants generally referred to as NO_x. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO₂ and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema.

³ SO₂ is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO₂ is also a precursor to the formation of atmospheric sulfate and particulate matter, and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

⁴ VOC means any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—which participates in atmospheric photochemical reactions and, thus, is a precursor of ozone formation. ROGs are any reactive compounds of carbon, excluding methane, CO, carbon dioxide (CO₂), carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

⁵ PM₁₀ and PM_{2.5} consist of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.

Table AQ-1: Ambient Air Quality Standards and Bay Area Attainment Status

Pollutant	Averaging Time	State Standard	Bay Area Attainment Status for California Standard	Federal Primary Standard	Bay Area Attainment Status for Federal Standard	Major Pollutant Sources
Ozone	8 hour	0.070 ppm	Non-Attainment	0.070 ppm	Non-Attainment	Formed when ROG and NOx react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/ industrial mobile equipment.
	1 hour	0.09 ppm	Non-Attainment	---	---	
Carbon Monoxide	8 hour	9.0 ppm	Attainment	9 ppm	Attainment	Internal combustion engines, primarily gasoline-powered motor vehicles
	1 Hour	20 ppm	Attainment	35 ppm	Attainment	
Nitrogen Dioxide	Annual Average	0.030 ppm	---	0.053 ppm	Attainment	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads
	1 Hour	0.18 ppm	Attainment	0.100 ppm	Attainment	
Sulfur Dioxide	Annual Average	---	---	0.030 ppm	---	Fuel combustion, chemical plants, sulfur recovery plants and metal processing
	24 Hour	0.04 ppm	Attainment	0.14 ppm	---	
	1 Hour	0.25 ppm	Attainment	0.075 ppm	---	
Particulate Matter (PM10)	Annual Arithmetic Mean	20 µg/m ³	Non-Attainment	---	---	Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays)
	24 hour	50 µg/m ³	Non-Attainment	150 µg/m ³	Unclassified	
Particulate Matter (PM2.5)	Annual Arithmetic Mean	12 µg/m ³	Non-Attainment	12 µg/m ³	Unclassified/Attainment	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
	24 hour	---	---	35 µg/m ³	Non-Attainment	
Lead	Calendar Quarter	---	---	1.5 µg/m ³	Attainment	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	30 Day Average	1.5 µg/m ³	Attainment	---	---	

NOTE: ppm = parts per million; and µg/m³ = micrograms per cubic meter

SOURCE: Bay Area Air Quality Management District, Air Quality Standards and Attainment Status, <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status#fifteen>.

The San Francisco Bay Area is currently designated *non-attainment* for the State 1-hour and 8-hour ozone standards, the national 8-hour ozone standard, the State PM₁₀ standards (annual and 24-hour), and the State (annual) and national (24-hour) PM_{2.5} standards. The Bay Area is designated *attainment or unclassified* with respect to the other ambient air quality standards.⁶

The federal CAA requires each state to prepare an air quality control plan, referred to as the State Implementation Plan (SIP), that outlines the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards specified in the Clean Air Act. A SIP includes the regulations, programs, and policies that a state will use to clean up polluted areas. States must hold public hearings and provide opportunities for the public and industries to be involved and comment on the development of each state plan.

The federal CAA amendments added requirements for states containing areas that violate the national standards to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has responsibility to review all SIPs to determine if they conform to the mandates of the federal Clean Air Act amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the non-attainment area and may impose additional control measures. Failure to submit an approvable SIP or to implement the plan within mandated timeframes can result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Toxic air contaminants (TACs) are regulated under both State and federal laws.⁷ Federal laws use the term “Hazardous Air Pollutants” (HAPs) to refer to the same types of compounds that are referred to as TACs under State law. Both terms encompass essentially the same compounds. The 1990 federal CAA amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. These substances include certain VOCs, pesticides, herbicides and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal CAA amendments, 189 substances are regulated as HAPs. Section 112(b) of the CAA directs EPA to identify sources of the 189 pollutants, and establishes a 10-year time period for EPA to issue technology-based emissions standards for each source category. Title III of the CAA provides for a

⁶ California Air Resources Board, Maps of State and Federal Area Designations, Accessed January 20, 2021 at: <http://www.arb.ca.gov/desig/adm/adm.htm>.

⁷ Toxic air contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., gasoline service stations, dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

second phase under which EPA is to assess residual risk after the implementation of the first phase of standards and impose new standards, when appropriate, to protect public health.

State Regulations

California Clean Air Act

The California Clean Air Act of 1988 (CCAA) requires non-attainment areas to achieve and maintain the State ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining the State ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide standards. The California Air Resources Board (CARB) sets the California Ambient Air Quality Standards (CAAQS).

Under the CCAA, areas not in compliance with the CAAQS must prepare plans to reduce ozone. Non-compliance with the State ozone standard does not impact the ability to proceed with any transportation plan, program, or project. The first Bay Area Clean Air Plan was adopted in 1991, and updates to the Clean Air Plan have occurred since then, with the most recent adopted version being the *2017 Clean Air Plan*.

Senate Bill 656 (Chapter 738, Statutes of 2003)

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM₁₀ and PM_{2.5}. SB 656 required CARB, in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM₁₀ and PM_{2.5} (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for PM_{2.5}, and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal PM_{2.5} attainment plans, as well as for State ozone plans. This ensures continuing focus on PM reduction and progress towards attaining California's more health protective standards. This list of air district control measures was adopted by CARB on November 18, 2004. CARB also developed a list of State PM control measures for mobile and stationary sources, including measures planned for adoption as part of CARB's *Diesel Risk Reduction Plan*. To comply with SB 656, the Bay Area Air Quality Management District (BAAQMD) reviewed the list of 103 potential PM control measures prepared by CARB and developed a Particulate Matter Attainment Schedule. As a result, the BAAQMD adopted or amended existing rules to reduce particulate matter from internal combustion engines, chain-driven commercial broiling, and residential wood burning, and expanded its public awareness program.

Toxic Air Contaminant Identification and Control Act of 1983

Under the Toxic Air Contaminant Identification and Control Act of 1983 (Assembly Bill (AB) 1807, Chapter 1047, Statutes of 1983), the California Legislature created a two-step identification and risk management program to reduce the risk of health effects from air toxic substances. During the first

step (identification), CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determines if a substance should be formally identified as a toxic air contaminant in California. During the second step (risk management), CARB reviews the emission sources of an identified TAC to determine if any regulatory action is necessary to reduce the risk. The analysis includes a review of controls already in place, the available technologies and associated costs for reducing emissions, and the associated risk. Conducting public outreach is essential during the development of a control plan and any control measures to ensure that CARB efforts are cost-effective and appropriately balance public health protection and economic growth. In 1993, AB 1807 was amended to include the identification and control of additional TACs. Specifically, AB 2728 required CARB to identify the 189 federal hazardous air pollutants as TACs.

Assembly Bill 2588 Air Toxics “Hot Spots” Information and Assessment Act of 1987

In September 1987, the California Legislature established the Air Toxics “Hot Spots” Information and Assessment Act of 1987, Assembly Bill (AB) 2588 (Health and Safety Code Sections 44300-44394). It requires facilities to report their air toxics emissions, ascertain health risks, and notify nearby residents of significant risks. In September 1992, the “Hot Spots” Act was amended by Senate Bill 1731 that requires facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Diesel Risk Reduction Plan

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as TACs, based on data linking diesel PM emissions to increased risks of lung cancer and respiratory disease. Following the identification process, CARB was required to determine if there was a need for further control, which led to creation of the Diesel Advisory Committee to assist in the development of a risk management guidance document and risk reduction plan. In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends control measures to reduce the risks associated with diesel PM and achieve a goal of reducing diesel PM by 75 percent 2010 and by 85 percent by 2020.

Specific statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles will be evaluated and developed. The goal of these regulations is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

California Health and Safety Code

Under the California Health and Safety Code, Division 26 (Air Resources), CARB is authorized to adopt regulations to protect public health and the environment through the reduction of TACs and other air pollutants with adverse health effects. CARB has promulgated several mobile and stationary source airborne toxic control measures (ATCMs) pursuant to this authority. For instance, effective as of July 2003, CARB approved an ATCM that limits school bus idling at or near schools to only when necessary for safety or operational concerns (13 CCR Section 2480). This ATCM is intended to reduce diesel PM and other TACs and air pollutants from heavy-duty motor vehicle

exhaust. It applies to school buses, transit buses, school activity buses, youth buses, general public paratransit vehicles, and other commercial motor vehicles. This ATCM focuses on reducing public exposure to diesel PM and other TACs, particularly for children riding in and playing near school buses and other commercial motor vehicles, who are disproportionately exposed to pollutants from these sources. In addition, effective February 2005, CARB approved an ATCM to limit the idling of diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds, regardless of the state or country in which the vehicle is registered (13 CCR Section 2485).

Regional and Local Air Quality Regulations

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) attains and maintains air quality conditions in the Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans and programs for the attainment of ambient-air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA and CCAA.

As mentioned above, BAAQMD adopts rules and regulations. All projects are subject to BAAQMD's rules and regulations in effect at the time of construction. Specific rules applicable to project construction and operation may include, but are not limited to:

- **Regulation 2, Rule 1, General Permit Requirements.** Includes criteria for issuance or denial of permits, exemptions, appeals against decisions of the Air Pollution Control Officer, and BAAQMD actions on applications.
- **Regulation 2, Rule 2, New Source Review.** Applies to new or modified sources and contains requirements for Best Available Control Technology and emission offsets. Rule 2 implements federal New Source Review and Prevention of Significant Deterioration requirements.
- **Regulation 6, Rule 1, General Requirements.** Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity.
- **Regulation 7, Odorous Substances.** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation, but meeting such limitations shall not exempt such person from any other requirements of BAAQMD, State, or national law. The limitations of this regulation shall not be applicable until BAAQMD receives odor complaints from 10 or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this regulation become effective, as a result of citizen complaints described above, the limits shall remain effective until such time as

no citizen complaints have been received by BAAQMD for one year. The limits of this Regulation shall become applicable again if BAAQMD receives odor complaints from five or more complainants within a 90-day period. BAAQMD staff investigate and track all odor complaints it receives and make attempts to visit the site and identify the source of the objectionable odor and assist the owner or facility in finding a way to reduce the odor.

- **Regulation 8, Rule 3, Architectural Coatings.** Limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within BAAQMD.

EXISTING CONDITIONS

The City of Alameda is located within the San Francisco Bay Area Air Basin (Air Basin), which encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties.

Regional Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The climate of the Air Basin, including Alameda, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is often present over the eastern Pacific Ocean off the West Coast of North America. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, air emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are favorable to the formation of photochemical pollutants, such as ozone and secondary particulates, such as sulfates and nitrates.

Alameda lies in the Northern Alameda and Western Contra Costa Counties climatological sub-region of the Bay Area, which stretches from Richmond to San Leandro. The sub-region's western boundary is defined by the Bay and its eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridge line height of approximately 1,500 feet, which causes the westerly flow of air to split off to the north and south of Oakland, resulting in diminished wind speeds. The prevailing winds for most of the sub-region are from the west. At the northern end of the sub-region, near Richmond, prevailing winds are from the south-southwest.

Temperatures in this sub-region have a narrow range due to the proximity of the moderating marine air. Maximum temperatures during summer average in the mid-70's, with minimums in the mid-50's. Winter highs are in the mid- to high-50's, with lows in the low- to mid-40's. The air pollution potential is lowest for the parts of the sub-region that are closest to the bay, due largely

to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels.

The air pollution potential at the northern (Richmond) and southern (Oakland and San Leandro) parts of the sub-region is marginally higher than communities directly east of the Golden Gate, because of the lower frequency of strong winds. The sub-region contains a variety of industrial air pollution sources and is also traversed by frequently congested major freeways. Traffic and congestion, and the motor vehicle emissions they generate, are increasing.⁸

Local Air Quality

The BAAQMD maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. The monitoring station closest to the Alameda is the Oakland West Monitoring Station at 1100 21st Street in Oakland, which measures levels of ozone, nitrogen dioxide (NO₂), and PM_{2.5}.

Table AQ-2 summarizes the most recent five years of data (2015 through 2019) from the BAAQMD's Oakland West Monitoring Station. The State 1-hour ozone standard and the State and national 8-hour ozone standards were exceeded once in 2019. The national 24-hour PM₁₀ standard was exceeded three times in 2015, seven times in 2017 and fourteen times in 2018 (due primarily to wildfires). No other standards were exceeded at the Oakland West Monitoring Station during the five-year period.

Community Air Risk Evaluation

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, diesel particulate matter (DPM)⁹ was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75-percent reduction in DPM

⁸ Bay Area Air Quality Management District, *Appendix D – Climate, Topography and Air Pollution Potential*, <http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/cegaguid.pdf>.

⁹ In 1998, the California Air Resources Board classified DPM as a TAC, citing its potential to cause cancer and other health problems. The EPA concluded that long-term exposure to diesel engine exhaust is likely to pose a lung cancer hazard to humans and can also contribute to other acute and chronic health effects.

Table AQ-2: Air Quality Data Summary (2015 - 2019)

Pollutant	Standard ^a	2015	2016	2017	2018	2019
Ozone						
Highest 1 Hour Average (ppm) ^b	0.090	0.091	0.065	0.087	0.063	0.101
Days over State Standard		0	0	0	0	1
Highest 8 Hour Average (ppm) ^b	0.070	0.064	0.052	0.068	0.050	0.072
Days over National Standard		0	0	0	0	1
Highest 8 Hour Average (ppm) ^b	0.070	0.065	0.053	0.069	0.050	0.072
Days over State Standard		0	0	0	0	1
Nitrogen Dioxide						
Highest 1 Hour Average (ppm) ^b	0.180/0.100	0.057	0.048	0.052	0.075	0.050
Days over State Standard		0	0	0	0	0
Annual Average ($\mu\text{g}/\text{m}^3$) ^b	0.030/0.053	0.014	0.012	0.013	0.012	0.012
Particulate Matter (PM_{2.5})						
Highest 24 Hour Average ($\mu\text{g}/\text{m}^3$) ^b	35	38.7	23.9	56.0	169.2	29.3
Days over National Standard		3	0	7	14	0
State Annual Average ($\mu\text{g}/\text{m}^3$) ^b	12	**	**	12.9	14.4	7.8
NOTES: Values in bold are in excess of at least one applicable standard.						
a. Generally, state standards and national standards are not to be exceeded more than once per year.						
b. ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter.						
c. ** means there was insufficient data available to determine the value.						
SOURCE: Bay Area Air Quality Management District, Annual Air Quality Summaries, http://www.baaqmd.gov/about-air-quality/air-quality-summaries						

was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.¹⁰

Modeled cancer risks from TACs in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

¹⁰ Bay Area Air Quality Management District, *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004–2013)*, April 2014, http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en.

- Western Contra Costa County and the cities of Richmond and San Pablo;
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward;
- San Jose;
- Eastern side of San Francisco;
- Concord;
- Vallejo; and
- Pittsburgh and Antioch.

The City of Alameda is part of the seven CARE program impacted communities in the Bay Area.¹¹ The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons. In Alameda, the health impact ranges from approximately 346 to 579 cancer risk per million persons depending on the location within the City.¹²

Addressing Sources of Air Pollutants in Community Planning

In January of 2016, the BAAQMD published *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning (Guidebook)*.¹³ BAAQMD's primary goal in providing the *Guidebook* is to support and promote infill development, which is important to reducing vehicle miles traveled and the associated air emissions, while minimizing air pollution exposure for existing and future residents. The *Guidebook* provides developers and planners with the information and tools needed to create health-protective communities.

The *Guidebook* recommends Best Practices to Reduce Emissions and Reduce Exposure to Local Air Pollution. Implementing as many Best Practices to Reduce Emissions as is feasible will reduce potential health risks to the greatest extent. The *Guidebook* also lists examples of a variety of strategies to reduce exposure to, and emissions of, air pollution, including the adoption of air quality-specific ordinances, standard conditions of approval, and incorporation of policies into general plans and other planning documents. To reduce exposure to pollutants, BAAQMD recommends implementing all best practices that are feasible and applicable to a project in areas that are likely to experience elevated levels of air pollution. The *Guidebook* recommends practices like installing indoor air filtration systems, planting dense vegetation, implementing project design

¹¹ Community Air Risk Evaluation Program, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014, https://www.baaqmd.gov/~media/Files/Planning_and_Research/CARE_Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en.

¹² Bay Area Air Quality Management District, *Impacted Areas by Zip Code*, March 2014, http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_ScoresbyZipCode.ashx?la=en.

¹³ Bay Area Air Quality Management District, *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, January 2016, http://www.baaqmd.gov/~media/files/planning-and-research/planning-healthy-places/draft_planninghealthyplaces_marchworkshop-pdf.pdf?la=en.

which provides a buffer between sensitive receptors and emission source, and developing alternative truck routes.

The *Guidebook* provides an interactive map of the Bay Area showing areas with estimated elevated levels of fine particulates and/or toxic air contaminants. The interactive map shows locations where further study is needed, such as a detailed health risk assessment, specifically, locations next to major roads and freeways and large industrial sites, as well as the downtown districts of cities.

Air Quality Plans

In addition to the SIPs require by the CAA, described above, the CCAA also requires development of air quality plans and strategies to meet State air quality standards in areas designated as *non-attainment* (with the exception of areas designated as *non-attainment* for the State PM standards). Maintenance plans are required for attainment areas that had previously been designated non-attainment in order to ensure continued attainment of the standards.

Bay Area ozone levels have been greatly reduced in recent years, but the region still does not fully attain State and national ozone standards. The CCAA, as codified in the California Health & Safety Code, requires regional air districts that do not attain State ozone standards to prepare ozone plans. To that end, BAAQMD's 2017 Clean Air Plan¹⁴ serves to update the most recent Bay Area ozone plan, the 2010 Clean Air Plan. The Health & Safety Code requires that ozone plans propose a control strategy to reduce emissions of ozone precursors—ROG and NOx—and reduce transport of ozone and its precursors to neighboring air basins. The control strategy must either reduce emissions 5 percent or more per year, or include “all feasible measures.” Because reducing emissions of ozone precursors by 5 percent per year is not achievable, the control strategy for the 2017 Clean Air Plan is based on the “all feasible measures” approach.

The 2017 Clean Air Plan includes the Bay Area's first-ever comprehensive Regional Climate Protection Strategy, which identifies potential rules, control measures, and strategies that BAAQMD can pursue to reduce GHG emissions in the Bay Area. Measures of the 2017 Clean Air Plan addressing the transportation sector are in direct support of *Plan Bay Area 2040*, which was prepared by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) and includes the region's transportation plan/sustainable communities strategy. Highlights of the 2017 Clean Air Plan control strategy include:

- **Limit Combustion:** Develop a region-wide strategy to improve fossil fuel combustion efficiency at industrial facilities, beginning with the three largest sources of industrial emissions: oil refineries, power plants, and cement plants.
- **Stop Methane Leaks:** Reduce methane emissions from landfills, and oil and natural gas production and distribution.

¹⁴ Bay Area Air Quality Management District, *Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, Final 2017 Clean Air Plan*, April 19, 2017, http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.pdf?la=en.

- **Reduce Exposure to Toxics:** Reduce emissions of toxic air contaminants by adopting more stringent limits and methods for evaluating toxic risks at existing and new facilities.
- **Put a Price on Driving:** Implement pricing measures to reduce travel demand.
- **Advance Electric Vehicles:** Accelerate the widespread adoption of electric vehicles.
- **Promote Clean Fuels:** Promote the use of clean fuels and low or zero carbon technologies in trucks and heavy-duty vehicles.
- **Accelerate Low-Carbon Buildings:** Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar and ground-source heat pumps.
- **Support More Energy Choices:** Support of community choice energy programs throughout the Bay Area.
- **Make Buildings More Efficient:** Promote energy efficiency in both new and existing buildings.
- **Make Space and Water Heating Cleaner:** Promote the switch from natural gas to electricity for space and water heating in Bay Area buildings.

Sensitive Receptors

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive to poor air quality than the general public because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, individuals over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to BAAQMD, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees. BAAQMD considers the relevant zone of influence for an assessment of air quality health impacts to be within 1,000 feet of a project site.

12.3 Standards of Significance

Appendix G of the *CEQA Guidelines* identifies a number of significant environmental impacts to air quality. A project may have a significant air quality impact if it would include any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The plan-level thresholds of significance from BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of the Alameda General Plan 2040. The thresholds of significance applied to assess plan-level air quality impacts are:

- Operational-related criteria air pollutants and precursors:
 - Consistency with Current Air Quality Plan control measures, and
 - Projected vehicle miles traveled (VMT) or vehicle trip increase is less than or equal to projected population increase.
- Operational-related risks and hazards:
 - Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas), and
 - Overlay zones of at least 500 feet from all freeways and high volume roadways.
- Operational-related odors:
 - Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors.

These standards of significance are adopted for use in this EIR.

11.4 Impacts and Mitigation Measures

The assessment of air quality impacts identified in this chapter is based on the standards of significance listed in Section 11.3. This section identifies air quality impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan.

The proposed Conservation and Climate Action Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to conserve and protect Alameda's natural resources, reduce the community's greenhouse gas emissions and energy use, and prepare for and

address the impacts of climate change. Specific to issues relevant to this chapter, one of the goals of the Conservation and Climate Action Element is to prepare the community to adapt to hazardous air quality days and the impacts of climate change. The specific policies of the Conservation and Climate Action Element that would reduce potential air quality impacts generally target greenhouse gas (GHG) emissions. Therefore, all of the relevant air quality/GHG policies are listed in Chapter 12, Greenhouse Gases.

IMPACTS

Impact 11-1

Implementation of the *Alameda General Plan 2040* would not conflict with or obstruct implementation of the applicable air quality plan. (LTS)

As discussed previously, the BAAQMD's *2017 Clean Air Plan* is the applicable air quality plan for the City of Alameda. According to BAAQMD's guidance, a proposed land use plan is consistent with the *2017 Clean Air Plan* if the proposed land use plan:

1. Supports the primary goals of the *2017 Clean Air Plan*;
2. Includes applicable control measures from the *2017 Clean Air Plan*;
3. Does not cause the disruption, delay or otherwise hinder implementation of any *2017 Clean Air Plan* control measures; and
4. Has a projected VMT increase less than or equal to its projected population increase.

The proposed General Plan's consistency with each of these criteria is discussed below.

Supports the Primary Goals of the *2017 Clean Air Plan*

The primary goals of the *2017 Clean Air Plan* (CAP) are to protect air quality and public health at the regional and local scale and to protect the climate. Any project that would not support these goals would not be considered consistent with the *2017 CAP*. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the *2017 CAP* goals. The proposed General Plan Health and Safety Element's Objective 7 is to protect residents from the harmful effects of air pollutants through reducing diesel emissions, wood smoke, and construction air pollution, and by providing air quality alerts. The proposed Conservation and Climate Action Element also contains several policies that would protect the climate and also provide co-benefits to improve air quality and health in the City. Therefore, the proposed General Plan supports the primary goals of the *2017 CAP*.

Includes Applicable Control Measures from the *2017 Clean Air Plan*

The *2017 Clean Air Plan* contains a control strategy that encompasses 85 individual control measures aimed at reducing air pollution and GHG emissions in the Bay Area. For consistency with climate planning efforts at the State level, the control strategies in the CAP are based on the same economic sector framework used by CARB, which encompass stationary (industrial) sources,

transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. Table AQ-3 identifies the control measures from the CAP that are relevant to the City of Alameda and the GP 2040's consistency with those measures.

As shown in Table AQ-3, the *Alameda General Plan 2040* would be consistent with the applicable control measures from the 2017 CAP because the General Plan implements similar measures through specific policies that would improve air quality in the City. Thus, the proposed General Plan includes applicable control measures from the 2017 CAP.

Does not Cause the Disruption, Delay or Otherwise Hinder Implementation of any 2017 Clean Air Plan Control Measures

Table AQ-3 demonstrates that the *Alameda General Plan 2040* would not cause the disruption, delay or otherwise hinder implementation of any 2017 CAP control measures. The General Plan does not include any component that would disrupt, delay or hinder implementation of any of the CAP control measures.

Has a Projected VMT Increase Less than or Equal to its Projected Population Increase

The VMT increase from implementation of the *Alameda General Plan 2040* was analyzed by Fehr & Peers,¹⁵ which found that although the total daily VMT would increase from the existing (year 2020) 2,662,100 VMT to 3,524,400 VMT in 2040 with buildout of the *Alameda General Plan 2040*, the service population (population plus jobs) would also increase from the existing (year 2020) 109,100 service population to a service population of 144,800 in 2040 with buildout of the General Plan. Due to the balanced growth of both residential and employment opportunities in the *Alameda General Plan 2040*, as well as the extensive public transit options available in the City, the daily VMT per capita is anticipated to be reduced from 24.4 in 2020 to 24.3 in 2040. Furthermore, the Mobility Element of the General Plan includes Policy ME-20, New Development, which requires that new development support citywide traffic reduction, greenhouse gas reduction, and sustainable transportation. As such, the proposed General Plan has a projected VMT increase less than its projected population increase; buildout of the General Plan would not result in an increase in VMT per service population. Therefore, impacts due to an increase in VMT would be less than significant.

¹⁵ The transportation impact analysis performed by Fehr & Peers is presented in Chapter 10.

Table AQ-3: Consistency with 2017 Clean Air Plan

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
<p>SS34 Wood Smoke. Consider further limits on wood burning, including additional limits to exemptions from BAAQMD Rule 6-3: Wood Burning Devices.</p>	Yes	<p>The General Plan contains the following policies related to wood smoke in order to improve air quality:</p> <p>Policy SN-60-9: Reduce Wood Smoke: Adopt ordinances and regulations to reduce wood smoke in Alameda.</p>
<p>TR2 Trip Reduction Programs: Encourage trip reduction policies and programs in local plans, e.g., general and specific plans while providing grants to support trip reduction efforts. Encourage local governments to require mitigation of vehicle travel as part of new development approval, to adopt transit benefits ordinances in order to reduce transit costs to employees, and to develop innovative ways to encourage rideshare, transit, cycling, and walking for work trips.</p>	Yes	<p>The General Plan contains the following policies to reduce trips and vehicle miles traveled in order to improve air quality:</p> <p>Policy CC-9: Climate-Friendly Active Modes of Transportation. Reduce GHG emissions from Transportation by improving the local roadway network to support all modes and specifically encourage walking and bicycling.</p> <p>Policy CC-10: Transit Use. Reduce automobile GHG emissions by increasing transit use.</p> <p>Policy CC-11: Vehicle Sharing. Support and encourage vehicle sharing to reduce the number of vehicles on the roadway network to reduce GHG emissions, and reduce traffic congestion.</p> <p>Policy CC-12: Climate-Friendly, Transit-Oriented Development. Reduce automobile use and vehicle miles traveled by new residents by requiring transit oriented, medium and high density mixed use development on transit and commercial corridors and near ferry terminals in Alameda.</p> <p>Policy CC-13: Climate-Friendly Employment Commute Behavior. Encourage residents to telecommute or work from home to reduce commute trips, reduce GHG emissions, and reduce commute hour congestion.</p>
<p>TR9 Bicycle and Pedestrian Access and Facilities: Encourage planning for bicycle and pedestrian facilities in local plans, e.g., general and specific plans, fund bike lanes, routes, paths and bicycle parking facilities.</p>	Yes	<p>The General Plan contains the following policies related to bicycle and pedestrian access/facilities in order to improve air quality:</p>

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
		<p>Policy CC-9: Climate-Friendly Active Modes of Transportation. Reduce GHG emissions from Transportation by improving the local roadway network to support all modes and specifically encourage walking and bicycling.</p> <p>Policy CC-12: Climate-Friendly, Transit-Oriented Development. Reduce automobile use and vehicle miles traveled by new residents by requiring transit oriented, medium and high density mixed use development on transit and commercial corridors and near ferry terminals in Alameda.</p>
<p>TR13 Parking Policies: Encourage parking policies and programs in local plans, e.g., reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing (such as “SF Park”) in high-traffic areas.</p>	<p>Yes</p>	<p>The General Plan contains the following policies related to parking policies in order to improve air quality:</p> <p>Policy CC-11: Vehicle Sharing. Support and encourage vehicle sharing to reduce the number of vehicles on the roadway network to reduce GHG emissions, and reduce traffic congestion.</p> <p>Policy CC-12: Climate-Friendly, Transit-Oriented Development. Reduce automobile use and vehicle miles traveled by new residents by requiring transit oriented, medium and high density mixed use development on transit and commercial corridors and near ferry terminals in Alameda.</p>
<p>EN2 Decrease Electricity Demand: Work with local governments to adopt additional energy efficiency policies and programs. Support local government energy efficiency program via best practices, model ordinances, and technical support. Work with partners to develop messaging to decrease electricity demand during peak times.</p>	<p>Yes</p>	<p>The General Plan contains the following policies reducing electricity demand in order to improve air quality:</p> <p>Policy CC-15: Zero Net Energy and Green Building. Require newly constructed buildings and structures to comply with the City’s adopted Green Building Ordinances with the intent of meeting or exceeding the State’s zero net energy goals.</p> <p>Policy CC-16: Energy Efficiency and Conservation. Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and</p>

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
		private facilities, infrastructure and equipment.
BL4 Urban Heat Island Mitigation: Develop and urge adoption of a model ordinance for “cool parking” that promotes the use of cool surface treatments for new parking facilities, as well existing surface lots undergoing resurfacing.	Yes	The General Plan contains the following policies related to the urban heat island effect in order to improve air quality: Policy CC-5: Trees and Sequestration. Preserve, maintain, and expand the number of trees in Alameda on both public and private property to increase carbon sequestration and reduce heat island effects.
NW2 Urban Tree Planting: Develop or identify an existing model municipal tree planting ordinance and encourage local governments to adopt such an ordinance. Include tree planting recommendations from the Air District’s technical guidance, best practices for local plans, and CEQA review.	Yes	The General Plan contains the following policies related tree planting in order to improve air quality: Policy CC-5: Trees and Sequestration. Preserve, maintain, and expand the number of trees in Alameda on both public and private property to increase carbon sequestration and reduce heat island effects.
WA3 Green Waste Diversion: Develop model policies to facilitate local adoption of ordinances and programs to reduce the amount of green waste going to landfills.	Yes	The General Plan contains the following policies related to waste diversion in order to improve air quality: Policy CC-19: Zero Waste Culture. Create a zero waste culture by developing programs and campaigns that recognize the shared responsibility for each individual to reduce and divert waste from landfill disposal.
WA4 Recycling and Waste Reduction: Develop or identify and promote model ordinances on community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects.	Yes	The General Plan contains the following policies related to recycling and waste reductions in order to improve air quality: Policy CC-19: Zero Waste Culture. Create a zero waste culture by developing programs and campaigns that recognize the shared responsibility for each individual to reduce and divert waste from landfill disposal.
WR2 Support Water Conservation: Develop a list of best practices that reduce water consumption and increase on-site water recycling in new and existing buildings; incorporate into local planning guidance.	Yes	The General Plan contains the following policies reducing water demand in order to improve air quality: Policy CC-18: Water Efficiency and Conservation. Minimize water use in new construction and landscaped areas.

SOURCE: Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 19, 2017.

In conclusion, development envisioned by the *Alameda General Plan 2040* would be consistent with the 2017 CAP, since it supports the primary goals of the CAP, includes applicable control measures from the CAP, would not disrupt, delay or hinder implementation of any CAP control measures, and would not result in an increase in VMT per service population. Therefore, the proposed General Plan would not result in an inconsistency with the 2017 Clean Air Plan and impacts would be ***less than significant***.

Mitigation Measure 11-1

None required.

Impact 11-2

Construction of new development allowed under the *Alameda General Plan 2040* could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (S)

The BAAQMD *CEQA Air Quality Guidelines* do not require an evaluation of construction emissions for plan-level projects. There is no specific proposed development under the proposed General Plan at this time. Future development proposals under the General Plan would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potentially significant air quality impacts. Because the details regarding future construction activities are not known at this time, including phasing of future individual projects, construction duration, and preliminary construction equipment, construction emissions are evaluated qualitatively in accordance with BAAQMD's plan-level guidance.

Construction emissions associated with individual development projects allowed under the *Alameda General Plan 2040* would generate an increase in criteria air pollutants. BAAQMD has developed project-level thresholds for construction activities. Subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds. Construction emissions from buildout of future projects within the City would primarily be: (1) exhaust emissions from off-road diesel-powered construction equipment; (2) dust generated by demolition, grading, earthmoving, and other construction activities; (3) exhaust emissions from on-road vehicles; and (4) off-gas emissions of ROG from application of asphalt, paints, and coatings.

Although BAAQMD's *CEQA Air Quality Guidelines* have no plan-level significance thresholds for construction, they include project-level thresholds for construction emissions. If a project's construction emissions fall below the project-level thresholds, the project's impacts on regional air quality would be individually and cumulatively less than significant. Future projects would also be required to comply with BAAQMD's Rules and Regulations such as Regulation 8-3-301, which limits the allowed VOC levels in the architectural coatings applied onto buildings within the City, and Regulation 11, Rule 2, which limits asbestos emissions during demolition.

BAAQMD's project-level significance thresholds consider fugitive dust impacts to be less than significant with implementation of best management practices (BMPs). However, without implementation of BMPs for fugitive dust, construction of future development allowed under the proposed General Plan would have a **potentially significant impact** on air quality. Implementation of Mitigation Measure 11-2, BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects, would reduce potentially significant fugitive dust impacts to *less than significant*.

Mitigation Measure 11-2

BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects. Future discretionary projects within the City shall implement the following measures or equivalent, expanded, or modified measures based on project- and site-specific conditions:

- 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.*
- 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*
- 3. All visible mud or dirt track-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 shall be prohibited.*
- 4. All vehicle speeds on unpaved roads shall be limited to 15 mph.*
- 5. 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.*
- 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*
- 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*
- 8. A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.*

Impact 11-3

Operation of new development allowed under the *Alameda General Plan 2040* would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (LTS)

The BAAQMD *CEQA Air Quality Guidelines* do not require an evaluation of operational emissions for plan-level projects. There is no proposed development under the *Alameda General Plan 2040* at this time. Future development proposals under the General Plan would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potential air quality impacts. Operational thresholds at the plan-level are:

- Consistency with Current Air Quality Plan control measures, and
- Projected VMT or vehicle trip increase is less than or equal to projected population increase.

As discussed under Impact 11-1, the proposed General Plan would be consistent with the 2017 CAP and the increase in VMT would not exceed the projected increase in service population under General Plan buildout. Furthermore, future development would be required to meet BAAQMD's Rules and Regulations, such as Regulation 6-3-306, which restricts the installation of wood burning fireplaces into a new building, and Regulation 8-3-301, which limits the allowed VOC levels in the architectural coatings applied onto buildings within the City. Subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds and future development would also be required to meet the current Title 24 Building Energy Efficiency Standards. Therefore, operational impacts of the proposed General Plan on air quality would be *less than significant*.

Mitigation Measure 11-3

None required.

Impact 11-4

New development allowed under the *Alameda General Plan 2040* could expose sensitive receptors to substantial pollutant concentrations. (S)

New Sources of Toxic Air Contaminants

Construction activities and various industrial and commercial processes (e.g., warehousing, manufacturing, dry cleaning, gasoline stations, generators, etc.) associated with future projects under the proposed General Plan would be expected to release TACs. TAC emissions generated by stationary and point sources in the Air Basin are regulated and controlled by the BAAQMD. Emissions of TACs from mobile sources are regulated by State rules and regulations, not by the BAAQMD, and have the potential to generate substantial concentrations of air pollutants.

Construction activities associated with future development under the proposed General Plan within 1,000 feet of existing sensitive receptors would have the potential to expose sensitive receptors to substantial concentrations of air pollutants and exceed BAAQMD's project-level thresholds for health impacts. BAAQMD's *CEQA Guidelines* indicate construction-related health impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable. The Office of Environmental Health Hazard Assessment does not recommend assessing health impacts for construction projects lasting less than two months.¹⁶

Operation of future permitted stationary sources facilitated by the *Alameda General Plan 2040*—such as dry cleaners or gasoline stations—that release TACs within 1,000 feet of existing sensitive receptors would have the potential to generate substantial TAC emissions and exceed BAAQMD's project-level thresholds for health impacts. However, these future permitted stationary sources of TAC emissions would require permits from the BAAQMD prior to development and operation. TAC emissions from future permitted stationary sources would be regulated by BAAQMD through permitting and would be subject to further studies and health risk assessment prior to the issuance of any necessary air quality permits under BAAQMD Regulation 2, Rule 2, New Source Review, and Rule 5, New Source Review of Toxic Air Contaminants.

Operation of future non-residential development allowed under the General Plan that are not regulated by the BAAQMD—such as warehousing operations that include off-road equipment, heavy trucks, and trucks with transport refrigeration units (TRUs)—would have the potential to generate substantial TAC emissions. Individual projects within 1,000 feet of sensitive receptors that include more than 100 truck trips per day, 40 trucks with TRUs per day, or where TRU unit operations exceed 300 hours per week could potentially exceed the BAAQMD's project-level risks and hazards significance thresholds and would be potentially significant.¹⁷

Future development proposals under the proposed General Plan would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potentially significant health impacts. Absent appropriate mitigation, future project-related construction activities and future non-residential development that generates substantial TAC emissions and are not regulated by the BAAQMD could have a **potentially significant impact** on human health from the exposure to new sources of substantial TACs. Implementation of the following mitigation measure would reduce the impact to a less-than-significant level:

Mitigation Measure 11-4(a)

Future discretionary projects within the City that generate substantial toxic air contaminant (TAC) emissions (that are not regulated by the Bay Area Air Quality Management District (BAAQMD)) that would be located within 1,000 feet of sensitive receptors shall submit a

¹⁶ Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015.

¹⁷ California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005

Health Risk Assessment (HRA) to the City prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD. If the HRA shows that the incremental cancer risk, PM_{2.5} concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's project-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures are capable of reducing potential PM_{2.5} concentrations, cancer risks, and non-cancer risks to below BAAQMD's project-level significance thresholds. Projects that generate substantial TAC emissions that are not regulated by the BAAQMD include:

- 1. Construction activities (on a case-by-case basis) lasting greater than two months, taking into consideration the specific construction-related characteristics of the project and proximity to off-site receptors, as applicable.*
- 2. Facilities that include more than 100 truck trips per day, 40 trucks with transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week.*

According to the requirements under the California Public Resources Code, Division 13, Environmental Quality (§21000 *et seq.*), projects within ¼ mile of a school that involve the construction or alteration of a facility that might reasonably be anticipated to emit hazardous air emissions, and that may impose a health or safety hazard to persons who would attend or would be employed at the school, must meet all requirements per *CEQA Guidelines* §15186(b)(1) and (b)(2). The lead agency must consult with the affected school district or districts regarding the potential impact of the project on the school and notify the affected school district(s) of the project in writing, not less than 30 days prior to approval or certification of the CEQA document.

Siting of Sensitive Receptors within 1,000 feet of Existing Sources of TACs

Existing TAC sources of concern within the City include stationary sources permitted by BAAQMD, roadways with more than 10,000 annual average daily traffic (AADT), and highways or freeways. According to BAAQMD's database of permitted stationary sources risk and hazards, there are currently approximately 80 permitted stationary sources within the City.¹⁸ State Route (SR) 61 and 260 are highways within the City that meet BAAQMD's criteria for an existing source of TACs. Park Street also meets the criteria by having more than 10,000 AADT.

Figure AQ-1 identifies the existing permitted stationary sources of TACs within the City as of January 2021, as well as roadways SR 61, SR 260, and Park Street. BAAQMD's Health Screening Tool should be reviewed for a current map of permitted stationary sources during subsequent environmental review of future development projects. The locations of existing permitted stationary sources of TACs are approximate and BAAQMD should be contacted for accurate locations of permitted stationary sources within 1,000 feet of a future development project site.

¹⁸ Bay Area Air Quality Management District, Permitted Sources Risks and Hazards Map, <https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65>.

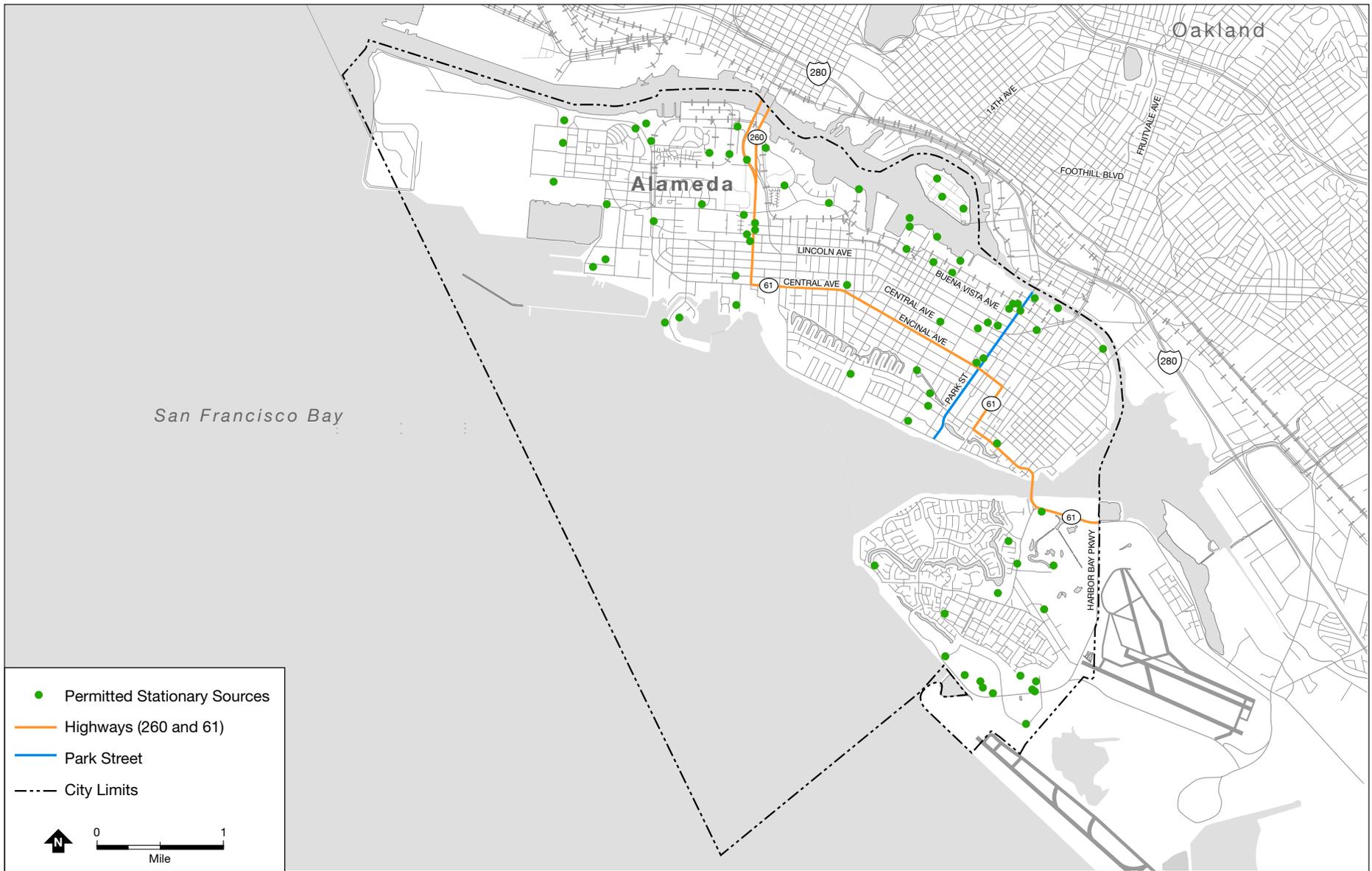


Figure AQ-1

Existing Sources of TACs

Source: RCH Group

Future development proposals allowed under the *Alameda General Plan 2040* would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potentially significant health impacts. Absent mitigation, future development siting sensitive receptors within 1,000 feet of existing TAC sources that exceed BAAQMD's cumulative risks and hazards significance thresholds would have a **potentially significant impact** on the health of sensitive receptors. Implementation of Mitigation Measure 11-4(b) would reduce impacts to less than significant with mitigation.

Mitigation Measure 11-4(b)

Future discretionary projects within the City that site sensitive receptors within 1,000 feet of existing major sources of toxic air contaminants (TACs) (e.g., permitted stationary sources, highways, freeways and roadways with over 10,000 annual average daily traffic (AADT)) shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the Bay Area Air Quality Management District (BAAQMD). If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's cumulative-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures (e.g., electrostatic filtering systems) are capable of reducing potential cancer and noncancer risks to below BAAQMD's significance thresholds.

Impact 11-5

New development allowed under the *Alameda General Plan 2040* would not result in other emissions (such as those leading to odors) that could adversely affect a substantial number of people. (LTS)

Construction emissions associated with individual development projects allowed under the *Alameda General Plan 2040* would generate fugitive dust during construction activities (see Impact 11-2). Implementation of Mitigation Measure 11-2, BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects, would reduce potentially significant fugitive dust impacts to *less than significant*.

Under the BAAQMD *CEQA Guidelines*, a plan-level environmental analysis must identify locations of odor sources in the plan and identify goals, policies, and objectives to minimize potentially adverse impacts. The *Alameda General Plan 2040* does not include sources of objectionable odors or other emissions that could adversely affect a substantial number of people and, consequently, the proposed General Plan does not include any goals, policies, or objectives to minimize odors in the City. As stated in the BAAQMD *CEQA Guidelines*, land uses that typically produce objectionable odors include agricultural uses, wastewater treatment plants, food manufacturing plants, chemical plants, composting, refineries, landfills, and confined animal facilities. The proposed General Plan does not propose any such land uses. Rather, projected development in the General Plan would include typical residential, commercial, and industrial development, and would include uses that are not anticipated to produce objectionable odors that could affect a substantial number of

people. Future development proposals under the GP 2040 would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potentially significant odor impacts. Therefore, odor impacts would be ***less than significant***.

Mitigation Measure 11-5

None required.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative impacts related to air quality includes the San Francisco Bay Area Air Basin. New development allowed under the proposed General Plan could, in conjunction with existing development and future development in the Air Basin, result in cumulative impacts to air quality. However, each new development project pursued under the General Plan would require evaluation for potential air quality impacts, and mitigation would be identified to reduce or avoid potentially significant impacts. If a project's air quality emissions fall below the BAAQMD's project-level thresholds, the project's impacts on regional air quality would be individually and cumulatively less than significant. Each future development project in Alameda would be assessed for potential air quality impacts under BAAQMD's project-level thresholds and would be required to implement Mitigation Measures 11-2, 11-4(a), and 11-4(b). Each future development project in Alameda would also be required to comply with BAAQMD's rules/regulations and proposed General Plan policies intended to protect and improve air quality. Implementation of mitigation measures and compliance with these regulations and policies would further reduce air quality emissions. In addition, the BAAQMD's *2017 Clean Air Plan* provides regional measures to reduce ozone and PM_{2.5} emissions to meet the EPA attainment levels, while accounting for the anticipated growth of over two million new residents within the Air Basin over the next several decades. Given this, potential air quality impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

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12. GREENHOUSE GASES

12.1 Introduction

This chapter presents results of an analysis of potential greenhouse gas (GHG) impacts that could result from implementation of the proposed *Alameda General Plan 2040*. This chapter provides an overview of the existing climate conditions in the region and State, GHG emission levels in Alameda and California, the GHG regulatory framework, an analysis of potential GHG impacts that would result from implementation of the proposed General Plan, and identification of applicable mitigation measures. The supporting information, methodology, assumptions, and detailed results used in the GHG analysis are provided in Appendix C.

12.2 Setting

REGULATORY FRAMEWORK

This section summarizes the regulatory context for future development that would be facilitated by the proposed General Plan, including the laws, ordinances, regulations, plans, policies, and programs that are implemented at the State and local levels.

Federal

U.S. Environmental Protection Agency (EPA)

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the EPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court in *Utility Air Regulatory Group v. EPA* (134 S. Ct. 2427 [2014]) held that the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to

require limitations on GHG emissions based on the application of Best Available Control Technology (BACT).

State Regulations

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. California has a several regulations aimed at reducing the state’s GHG emissions. These initiatives are summarized below.

Assembly Bill 1493

Assembly Bill (AB) 1493 (2002), California’s Advanced Clean Cars program (referred to as “Pavley”), requires CARB to develop and adopt regulations to achieve “the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.” On June 30, 2009, the U.S. EPA granted the waiver of Clean Air Act preemption to California for its GHG emissions standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as “LEV (Low Emission Vehicle) III GHG” regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs, and will provide major reductions in GHG emissions.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California’s vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California’s resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

In 2006 California passed the California Global Warming Solutions Act (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and

market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a Statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce Statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the State reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce Statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25- to 30-percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low-carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program. On May 22, 2014, the First Update to the Climate Change

Scoping Plan was approved by the Board, along with the finalized environmental documents. On November 30, 2017, the Second Update to the Climate Change Scoping Plan was approved by CARB.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

SB 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emissions reduction targets to be achieved from passenger vehicles by 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPOs) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) were assigned joint targets of a 10-percent reduction in GHGs from transportation sources by 2020 and a 19-percent reduction in GHGs from transportation sources by 2035.

The ABAG/MTC *Plan Bay Area 2040* is a long-range land use and transportation plan for the San Francisco Bay Area region that seeks to achieve these mandated GHG emissions reductions. *Plan Bay Area 2040* contains ten goals with performance targets to meet these goals that seek to promote healthy and safe communities by reducing impacts from air pollution, protecting open space and agriculture, and increasing active transportation.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders "All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets." The Executive Order also states that "CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent."

Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently-adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a Statewide per-capita goal of 6 metric tons of carbon dioxide equivalent (CO₂e) by 2030 and 2 metric tons of CO₂e by 2050. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's Renewables Portfolio Standard Program, which was last updated by SB X 1-2 in 2011. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the Governor Edmund G. Brown issued Executive Order B-55-18, which established a new Statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing Statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

Regional and Local Air Quality Regulations

BAAQMD 2017 Clean Air Plan

The Bay Area Air Quality Management District (BAAQMD) regulates GHG emissions through specific rules and regulations as well as project- and plan-level emissions thresholds for GHGs to ensure that the Bay Area contributes to its fair share of emissions reductions. In 2017, BAAQMD published the *2017 Clean Air Plan*, which includes policy approaches, control measures, and technical programs that will help the region make progress toward the goal of reducing GHG emissions by 2050 to 80 percent below 1990 levels.

Alameda Climate Action and Resiliency Plan (CARP)

Alameda’s City Council adopted the Climate Action and Resiliency Plan (CARP) in September 2019. The CARP adopts an integrated approach known as the “Climate Safe Path,” which emphasizes reducing GHGs to achieve net-zero carbon emissions as soon as possible, as well as adapting the City to handle the climate change impacts it is currently experiencing. The CARP proposes the following new actions:

- **Transportation:** Reduce the impacts of solo driving by encouraging mode shift (e.g., taking the bus, bicycling, walking, and avoiding trips altogether) and electric vehicle (EV) use. One approach to these actions is to pursue innovative programs such as peak-hour congestion pricing.
- **Buildings:** Now that the City has shifted to 100-percent clean electricity, eliminate as much natural gas use as possible by fuel shifting—that is, converting natural gas use to electricity use. This can be accomplished by requiring new residential developments to be all-electric and replacing gas-powered appliances in existing buildings.
- **Sequestration:** Draw down carbon already in the atmosphere by applying compost (created from diverted organic waste) in parks and open areas and planting more trees. The City will begin its sequestration efforts with pilot projects and eventually expand them to larger areas.
- **Waste:** Reduce the amount of material the City sends to landfill by increasing composting and recycling, as laid out in the *Zero Waste Implementation Plan (ZWIP)* Update. This will pave the way for reaching true sustainability by transitioning to a circular economy that keeps raw materials in a constant flow, rather than a linear economy that extracts raw materials and then disposes of them.

Bay Area Air Quality Management District

BAAQMD attains and maintains air quality conditions in the Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans and programs for the attainment of ambient-air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA and CCAA.

As mentioned above, BAAQMD adopts rules and regulations. All projects are subject to BAAQMD's rules and regulations in effect at the time of construction. Specific rules applicable to project construction and operation may include, but are not limited to:

- **Regulation 2, Rule 1, General Permit Requirements.** Includes criteria for issuance or denial of permits, exemptions, appeals against decisions of the Air Pollution Control Officer, and BAAQMD actions on applications.
- **Regulation 2, Rule 2, New Source Review.** Applies to new or modified sources and contains requirements for Best Available Control Technology and emission offsets. Rule 2 implements federal New Source Review and Prevention of Significant Deterioration requirements.
- **Regulation 6, Rule 1, General Requirements.** Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity.
- **Regulation 7, Odorous Substances.** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation, but meeting such limitations shall not exempt such person from any other requirements of BAAQMD, State, or national law. The limitations of this regulation shall not be applicable until BAAQMD receives odor complaints from 10 or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this regulation become effective, as a result of citizen complaints described above, the limits shall remain effective until such time as no citizen complaints have been received by BAAQMD for one year. The limits of this Regulation shall become applicable again if BAAQMD receives odor complaints from five or more complainants within a 90-day period. BAAQMD staff investigate and track all odor complaints it receives and make attempts to visit the site and identify the source of the objectionable odor and assist the owner or facility in finding a way to reduce the odor.
- **Regulation 8, Rule 3, Architectural Coatings.** Limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within BAAQMD.

EXISTING CONDITIONS

Global Climate Change

Climate is defined as the average statistics of weather, which include temperature, precipitation, and seasonal patterns such as storms and wind, in a particular region. Global climate change refers to the long-term and irrevocable shift in these weather-related patterns. Using ice cores and geological records, baseline temperature and carbon dioxide (CO₂) data extends back to previous ice ages thousands of years ago. Over the last 10,000 years, the rate of temperature change has typically been incremental, with warming and cooling occurring over the course of thousands of years. However, scientists have observed an unprecedented increase in the rate of warming over the past 150 years, roughly coinciding with the global industrial revolution, which has resulted in substantial increases in GHG emissions into the atmosphere. The anticipated impacts of climate change in California range from water shortages to inundation from sea level rise. Transportation systems contribute to climate change primarily through the emissions of certain GHGs (carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)) from nonrenewable energy (primarily gasoline and diesel fuels) used to operate passenger, commercial, and transit vehicles. Land use changes contribute to climate change through construction and operational use of electricity and natural gas, and waste production.

The International Panel on Climate Change (IPCC) has reached consensus that human-caused emissions of GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. The IPCC has concluded that it is "extremely likely" that more than half of the observed increases in global average surface temperature from 1951 to 2010 were caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces together. The IPCC predicts that the global mean surface temperature increase by the end of the 21st century (2081–2100) relative to 1986–2005, could range from 0.5 to 8.7 degrees Fahrenheit. Additionally, the IPCC projects that global mean sea level rise will continue during the 21st century, very likely at a faster rate than observed from 1971 to 2010. For the period 2081–2100 relative to 1986–2005, the rise will likely range from 10 to 32 inches.¹

According to the California Energy Commission (CEC), accelerating global climate change has the potential to cause adverse impacts in the Bay Area, including but not limited to:

- **Water Supply:** Changes in local rainfall, salt water intrusion, sea water flooding the delta, and a reduced Sierra snowpack can all threaten the Bay Area's water supply.
- **Infrastructure:** Increased risks of flooding because of sea level rise, coastal erosion, more frequent and extreme storms, and stronger precipitation events may lead to damage, inoperability, or impairment of critical infrastructure such as wastewater treatment plants, sewage, power plants, and transportation. This would affect not only daily commutes and activities, but also emergency response.

¹ IPCC, *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2013. <https://www.ipcc.ch/report/ar5/wg1/>.

- **Agriculture:** Changes in temperatures, more extreme heat days, and the earlier onset of spring may lead to suboptimal growing conditions for grapes and other agricultural products that significantly contribute to the Bay Area economy and tourism.
- **Ecosystems and Biodiversity:** The Bay Area’s coastal wetlands are threatened by sea level rise and cannot naturally move inland because of existing development. Consequently, sea level rise threatens the destruction of this important ecosystem, which in turn threatens the region’s freshwater fish species, and may allow non-native species to thrive. Increased temperatures also result in increased fire risk.
- **Energy Demand, Supply, and Transmission:** Energy demand will increase as temperature extremes become more common. This could lead to rolling blackouts or other issues with the Bay Area’s aging energy infrastructure.
- **Public Health:** Most Bay Area residences and businesses were not built with air conditioning to control temperatures on extreme heat days. Occupants of such buildings are at greater risk of heat stroke on extreme heat days. Higher temperatures also lead to worsened air quality and potentially the spread of diseases and pests. Increased incidence and severity of wildfires may also contribute to worsening air quality. These changes will disproportionately burden children, the elderly, and those with pre-existing health conditions.²

Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The six primary GHGs are:

- **carbon dioxide (CO₂),** emitted when solid waste, fossil fuels (oil, natural gas, and coal), and wood and wood products are burned;
- **methane (CH₄),** produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, incomplete fossil fuel combustion, and water and wastewater treatment;
- **nitrous oxide (N₂O),** typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning;
- **hydrofluorocarbons (HFCs),** primarily used as refrigerants;
- **perfluorocarbons (PFCs),** originally introduced as alternatives to ozone depleting substances and typically emitted as by-products of industrial and manufacturing processes; and

² State of California, *California’s Fourth Climate Change Assessment, San Francisco Bay Area Region Report*. 2018. https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf.

- **sulfur hexafluoride (SF₆)**, primarily used in electrical transmission and distribution.

Although there are other contributors to global warming, these six GHGs are identified by the EPA as threatening the public health and welfare of current and future generations. GHGs have varying potential to trap heat in the atmosphere, known as global warming potential (GWP), and atmospheric lifetimes. GWP reflects how long GHGs remain in the atmosphere, on average, and how intensely they absorb energy. Gases with a higher GWP absorb more energy per pound than gases with a lower GWP, and thus contribute more to warming Earth. For example, one ton of CH₄ has the same contribution to the greenhouse effect as approximately 28 tons of CO₂; hence, CH₄ has a 100-year GWP of 28 while CO₂ has a GWP of 1. GWP ranges from 1 (for CO₂) to 23,500 (for SF₆).

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO₂ equivalents. CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWP than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e.

Greenhouse Gas Regional Emission Estimates

In 2018, the United States emitted about 6,677 million metric tons of CO₂. Emissions increased from 2017 to 2018 by 3.1 percent. Greenhouse gas emissions in 2018 (after accounting for sequestration from the land sector) were 10.2 percent below 2005 levels. The 2018 increase was largely driven by an increase in emissions from fossil fuel combustion, which was a result of multiple factors, including more electricity use to meet greater heating and cooling demands due to a colder winter and hotter summer in 2018 in comparison to 2017.³

In 2018, California emitted approximately 425 million metric tons of CO₂e, about 1 million metric tons of CO₂e higher than 2017 levels and 6 million metric tons of CO₂e below the 2020 GHG limit of 431 million metric tons of CO₂e. Consistent with recent years, these reductions have occurred while California's economy has continued to grow and generate jobs. In 2018, California's GDP grew 4.3 percent while the emissions per GDP declined by 0.4 percent compared to 2017. The transportation sector remains the largest source of GHG emissions (40 percent) in the State, but transportation emissions decreased in 2018 compared to 2017, which is the first year-over-year decrease since 2013. The electricity sector and industrial sector account for 15 percent and 21 percent of California's GHG emissions, respectively. The residential/commercial sector and the agricultural sector account for 10 percent and 8 percent of California's GHG emissions, respectively. High GWP gases (refrigerants), recycling/waste, and other emissions make up the final 7 percent of California's GHG emissions.⁴

³ United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.

⁴ California Air Resources Board, *Emissions Trends Report 2000-2018*, https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

The 2015 GHG emissions inventory prepared by BAAQMD for the *2017 Clean Air Plan* indicates that the Bay Area emitted approximately 85 million metric tons of CO₂e emissions in 2015. The transportation and stationary sources sectors represent the largest sources of GHG emissions, accounting for 41 percent and 26 percent, respectively. Energy sources account for approximately 14 percent of the Bay Area's GHG emissions, followed by buildings at approximately 10 percent. High GWP gases (refrigerants), recycling/waste, and agriculture make up the final 8 percent of the Bay Area's GHG emissions.⁵

In 2017, the City of Alameda developed an inventory for a new 2015 baseline for the City's CARP. The City's GHG Emissions Inventory contains three main sectors of GHG emissions: transportation (e.g., passenger, commercial, and off-road vehicles); building energy use (i.e., residential, commercial, and industrial use of electricity and natural gas); and waste, water, and wastewater (i.e., landfill and water/wastewater treatment operations). The City generated 409,461 metric tons of CO₂e in 2015. Of the sources in this total, the largest contributors include transportation and building energy use emissions, which contribute approximately 52 percent and 46 percent, respectively. Waste, water, and wastewater contribute approximately 2 percent of the City's GHG emissions. GHG emissions projections estimate the City will generate 292,473 metric tons of CO₂e in 2020. Of the sources in this total, the largest contributors will include transportation and building energy use emissions, which will contribute approximately 70 percent and 27 percent, respectively. Building Energy Use will be significantly reduced in 2020 due to Alameda Municipal Power shifting to provide 100-percent clean electricity. Waste, water, and wastewater contribute approximately 3 percent of the City's 2020 GHG emissions.

12.3 Standards of Significance

The significance of potential impacts was determined based on State *CEQA Guidelines*, Appendix G, and the plan-level thresholds of significance in the BAAQMD *CEQA Air Quality Guidelines*. Using Appendix G evaluation thresholds, the *Alameda General Plan 2040* would be considered to have significant GHG emissions impacts if it were to:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the GHG emissions.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence on climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The assessment of climate change impacts

⁵ Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 19, 2017, http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.pdf?la=en

typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.⁶

The plan-level thresholds of significance from the BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of the *Alameda General Plan 2040*. The thresholds of significance applied to assess plan-level air quality impacts are:

- Inconsistency with a qualified GHG Reduction Plan; or
- Exceeds the efficiency plan threshold of 6.6 metric tons of CO₂e per service population per year.

According to BAAQMD, if a project is consistent with an adopted Qualified Greenhouse Gas Reduction Strategy that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with *CEQA Guidelines* Sections 15064(h)(3) and 15183.5(b), which provide that a "lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program . . . that provides specific requirements that will avoid or substantially lessen the cumulative problem . . ." BAAQMD's *CEQA Air Quality Guidelines* provide the following methodology to determine if a plan meets the definition of a Qualified Greenhouse Gas Reduction Strategy:

- a) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- b) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
- c) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- e) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;
- f) Be adopted in a public process following environmental review.

Although the City's CARP meets many of the criteria above, the CARP only addresses development through 2030. Therefore, this analysis does not apply the Consistency with a qualified GHG Reduction Plan significance threshold.

⁶ *CEQA Guidelines*, Section 15064(h)(1).

The second threshold, the efficiency plan threshold of 6.6 metric tons of CO₂e per service population per year, is relevant for use, but it is intended to achieve the State's 2020 goal of reducing emissions to 1990 levels and not post-2020 goals. Therefore, while it cannot be applied to the *Alameda General Plan 2040*, a year 2040 GHG efficiency threshold can be calculated to represent the rate of emissions reductions necessary for the General Plan to achieve a fair share of Statewide GHG reductions necessary to meet post-2020 GHG reductions targets.

With the release of the 2017 Scoping Plan, CARB recognized the need to balance population growth with emissions reductions and, in doing so, provided a new local plan level methodology for target setting that provides consistency with State GHG reduction goals using per-capita efficiency targets. These Statewide per-capita targets account for all emissions sectors in the State, Statewide population forecasts, and the Statewide reductions necessary to achieve the 2030 and 2050 Statewide target under SB 32. The targets are generated by dividing the Statewide 2030 GHG emissions targets by the Statewide service population (employees plus residents) for that year. The 2017 Scoping Plan recommends that local governments aim to achieve a community-wide goal of no more than 6 metric tons of CO₂e per service population by 2030 and no more than 2 metric tons of CO₂e per service population by 2050. Based on linear interpolation of these two goals, this would result in a GHG reduction goal of 4 metric tons of CO₂e per service population by year 2040.

To determine whether the proposed General Plan would impede substantial progress toward achieving the GHG emissions reduction targets established by AB 32, SB 32, and the 2017 Scoping Plan, this analysis establishes a 2040 efficiency threshold of 4 metric tons of CO₂e per service population consistent with the 2017 Scoping Plan. The efficiency threshold represents the rate of emissions reductions necessary for the City of Alameda to achieve a fair share of Statewide GHG reductions necessary to meet the long-term targets.

These standards of significance are adopted for use in this EIR.

12.4 Impacts and Mitigation Measures

The assessment of greenhouse gas impacts identified in this chapter is based on the standards of significance listed in Section 12.3. This section identifies GHG impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan.

The proposed Conservation and Climate Action Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to conserve and protect Alameda's natural resources, reduce the community's greenhouse gas emissions and energy use, and to prepare for and address the impacts of climate change. Specific to issues relevant to this chapter, one of the goals of the Conservation and Climate Action Element is to reduce the community's GHG emissions, which are causing global heating, climate change, and environmental and social impacts. Another relevant goal is to prepare the community to adapt to the disruptions and impacts of climate change. The specific policies of the Conservation and Climate Action Element that would reduce

GHG emissions and their associated impacts are listed below (not all relevant supporting actions are listed). They are followed by relevant policies from other proposed General Plan elements.

Conservation and Climate Action Element

Goal 1 Empower community action, partnership and leadership to address local and global environmental and climatic emergencies.

Policy CC-1 Community Action. Empower local community members and leaders to participate, plan, and implement the changes in both individual and collective behavior and actions that are needed to address the climate crisis.

Policy CC-2 Social Vulnerability. Prioritize the needs of the most vulnerable communities when prioritizing public investments and improvements to address climate change.

Policy CC-3 Coordinated Regional and Local Planning. Maintain consistency between local and regional plans to reduce greenhouse gas emissions regionally and locally.

Actions:

- **City Government Leadership.** Promote climate friendly policies, standards, practices, technologies and purchasing in all City facilities and operations.
- **State and Regional Programs.** Support and participate in state and regional efforts to address climate change through greenhouse gas emission reduction, transportation system improvements, and increased housing supply near job centers and existing regional transportation infrastructure.
- **State and Regional Funding.** Advocate for and support state and regional efforts to provide funding for greenhouse gas reduction, transportation improvements and climate change adaptation at the local level.
- **Sustainable Communities Strategy.** Maintain consistency between the City's General Plan and Municipal Code and the regional Sustainable Communities Strategy.

Policy CC-4 Net Zero Green House Gas Emissions. Take actions to make Alameda a net zero GHG community.

Actions:

- **Partnerships.** Continue to partner on greenhouse gas emission reduction and adaptation strategies with other agencies, including, but not limited to, Caltrans, AC Transit, Bay Conservation and Development Commission, Water Emergency Transit Agency, East Bay Regional Park District, Port of Oakland, East Bay Municipal Utility District, Pacific Gas & Electric, and the US Department of Veterans Affairs.
- **Alameda Climate Action and Resiliency Plan Annual Review and Funding Priorities.** Implement and update as necessary Alameda's Climate Action and Resiliency Plan (CARP) to reduce GHG emissions to 50 percent below 2005 levels by 2030 and achieve net zero GHG

emissions as soon as possible. Implement adaptation strategies to address sea level and ground water rise, storm surges, inland stormwater system flooding, drought, extreme heat, and unhealthy wildfire smoke..

- **Annual Review.** *Annually review and re-evaluate programs, projects, and annual budget for climate action measures and evolving climatic and public health threats, such as groundwater rise, wildfire smoke events, and global pandemics.*
- **100% Renewable Energy Goal.** *Support powering Alameda with 100% renewable energy by promoting the generation, transmission and use of a range of renewable energy sources such as solar, wind power and waste to meet current and future demand. Support Alameda Municipal Power's efforts to provide power from 100% clean, non-fossil fuel sources to all residential and commercial users in Alameda.*
- **On-Island Generation.** *Support development of on-island solar power generation and on-island wind power with appropriately sized generation, storage, and microgrid distribution infrastructure to be able to provide power for a range of uses, including essential functions. Permit renewable energy generation facilities by right in zones with compatible uses and remove financial disincentives associated with the installation of clean energy generation and storage equipment.*
- **Local Climate Impact Mitigations.** *Require any carbon neutral goals and initiatives to reduce or sequester greenhouse gas emissions locally and not use taxpayer money to purchase carbon credits from outside the City of Alameda.*

Goal 2: Reduce the community's greenhouse gas emissions, which are contributing to global warming, climate change, and environmental and social impacts.

Policy CC-6 **Climate-Friendly Vehicles and Equipment.** Reduce transportation greenhouse gas emissions by promoting, and when appropriate, requiring the use of low and zero emission vehicles and equipment and taking action to support use of micro-mobility devices to reduce energy use and carbon emissions from personal vehicles.

Actions:

- **EV Charging.** *Support the increase in supply of publicly accessible electric vehicle charging stations in Alameda.*
- **New Development.** *Require electric vehicle charging stations in all new development.*
- **Permitting.** *Streamline local permitting for hydrogen fueling and electric vehicle charging infrastructure.*
- **City Fleet Vehicles.** *Replace public fleet vehicles with zero emission vehicles.*
- **Buses.** *Encourage AC Transit to continue its efforts to replace diesel buses with clean zero emission buses.*

- **Ferries.** Encourage WETA to replace diesel ferries with low or zero emission ferries.
- **EV Action Plan.** Prepare and adopt an Electric Vehicle Adoption Plan that provides a path forward for increased EV adoption in Alameda, including:
 - Bolstering charging infrastructure availability,
 - Driving community awareness,
 - Facilitating EV adoption, and
 - Supporting EV services and innovation.

Policy CC-7 Climate-Friendly Active Modes of Transportation. Reduce greenhouse gas emissions from transportation by improving the local roadway network to support all mobility choices while specifically encourage walking and bicycling.

Actions:

- **Active Transportation Plans.** Maintain, regularly update and implement bicycle and pedestrian improvement plans identified in the Mobility Element of the General Plan, the Transportation Choices Plan and the Active Transportation Plan.
- **Prioritize safety.** Promote the creation of a safe environment for bicycling and walking by establishing a goal of zero annual fatalities and severe injuries for bicyclists and pedestrians using Alameda’s roadway network.
- **Complete streets.** Ensure that all streets are designed to provide a safe and convenient environment for all modes, including bicyclists, people using mobility devices such as wheelchairs or walkers, and pedestrians. Adequately maintain sidewalk conditions to avoid tripping hazards.
- **Safe routes to school.** Increase walking and biking to school by developing and improving safe routes to schools and out-of-school programs.
- **Mobility for all.** Prioritize roadway network improvements that increase mobility and equitable access for all residents, especially low-income individuals, youth, seniors, individuals with disabilities, and other vulnerable residents.

Policy CC-8 Transit Use. Reduce automobile pollution and greenhouse gas emissions by increasing transit use.

Actions:

- **Partnerships.** Collaborate and partner with AC Transit, Water Emergency Transit Agency (WETA), BART, community groups, and employers to provide expanded and more convenient transit services throughout the community as well as to downtown Oakland, San Francisco, and the BART system.

- **Convenience and Frequency.** Work with AC Transit to provide convenient and frequent bus service within a quarter mile of every Alameda resident and business during normal commute hours.
- **Alameda Easy Pass.** Work with AC Transit and WETA to develop and fund an “Alameda EasyPass” program that would provide every Alameda resident with a pass for use on any bus or ferry.
- **Transit Connections.** Improve connections between bus transit and water transit facilities and services, such as a cross-town bus service connecting east and west Alameda to the Ferry Terminal services at Alameda Point.
- **Transit Connections.** Improve connections between bus transit and water transit facilities and services, such as a cross-town bus service connecting east and west Alameda to the Ferry Terminal services at Alameda Point.
- **Oakland Connections.** Establish water shuttle service to connect commuters, pedestrians and bicyclists to Oakland and reduce the need to use automobiles to cross the estuary.
- **Transit Priority.** Evaluate the creation of signal priority lanes, transit-only lanes, and queue jump lanes to make transit corridors more efficient and effective.
- **First and Last Mile Connections.** Improve safety and access for shared and active transportation around major transportation nodes.
- **Alameda BART.** Continue to work with BART to include an Alameda BART station in the design of BART’s plan for a second San Francisco Bay crossing connecting Oakland and San Francisco.

Policy CC-9 **Vehicle Sharing.** Support and encourage vehicle sharing to reduce the demand for vehicle parking and increase access to mobility.

Actions:

- **Alternative Vehicle Share Programs.** Support alternative vehicle share programs, such as bike share, car share, and scooter share programs.
- **Carpooling.** Consider transit and carpool lanes and other methods to support and incent the use of shared vehicles.
- **Carpool Parking.** Support the provision of preferential parking spaces for carpool vehicles in public parking lots and within private commercial development that are providing shared vehicle parking. Increase mobility and equitable access for all residents, especially low-income, youth, seniors, disabled, and other vulnerable residents.
- **Connectivity and Inclusiveness.** Connect neighborhoods and major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure. Prohibit sound walls, gates and other barriers that

separate neighborhoods and decrease physical and visual connectivity throughout the City.

Policy CC-10 Climate-Friendly, Walkable and Transit-Oriented Development. Reduce reliance on automobile use and reduce vehicle miles traveled by prioritizing walkable, transit oriented, medium and high density mixed-use development in transit-oriented areas and commercial corridors.

Actions:

- **Density, FAR and Transit.** *When zoning property for commercial, residential or residential mixed-use near transit stops generally zoned for more density and/or floor-area-ratio (FAR) on the parcels closest to the highest-quality existing or planned transit stops to encourage the most efficient use of land and public resources while minimizing vehicle miles traveled.*
- **Parking Requirements.** *Revise off-street parking requirements to replace minimum requirements with maximum requirements to limit the amount of onsite parking allowed with each development to reduce reliance on the automobile and automobile ownership.*
- **Transportation Demand Management Ordinance.** *Prepare and adopt a Transportation Demand Management Ordinance requiring new development to actively address the mobility of new residents and employees, including but not limited to contributing to annual operations and capital improvements for supplemental transit, water shuttle, land based shuttle services and improvements to the bicycle and pedestrian network.*
- **Pedestrian Only Areas.** *Create pedestrian-only areas to support economic activity in and around new development.*

Policy CC-11 Climate-Friendly Employment Commute Behavior. Encourage residents to telecommute or work from home to reduce vehicle miles traveled, greenhouse gas emissions, and commute hour congestion.

Actions:

- **Home Occupations:** *Implement municipal code amendments to allow for a wider variety of “home occupation permit” types in residential zoning districts.*
- **Support Telecommuting Professionals.** *Allow and encourage cafes, restaurants, and similar uses that specifically cater to telecommuting professionals in all zoning districts.*
- **Flexible Home Office Spaces.** *Allow for and actively encourage the construction of flexible spaces, such as Accessory Units and outdoor spaces to facilitate telecommuting from home in residential zoning districts.*
- **Promote Work-Live Environments.** *Support and encourage “work-live” developments in commercial zoning districts.*

- **Telecommuting Work Sites.** Encourage and permit remote work sites, telecommuting workplaces, and shared work locations within Alameda.

Policy CC-12 User Fees and Congestion Pricing. Advocate for changes to State law that would allow local jurisdictions to implement programs such as congestion pricing or tolling to actively manage roadway use to reduce vehicle miles travelled and greenhouse gas emissions.

Action:

- **Equity.** Ensure that user fees are equitable and consider the impact of costs on lower income or other vulnerable communities and users.

Policy CC-13 Alameda’s Building Stock. Reduce greenhouse gas emissions from natural gas combustion and natural gas leaks.

Actions:

- **Construction Regulations.** Prepare and adopt citywide regulations limiting use of natural gas and encouraging the use of clean energy electricity.
- **New Construction Reach Codes.** Adopt reach codes that ban the use of fossil-fuels in all new buildings constructed in Alameda.
- **Renovation to Clean Energy.** Develop regulations and incentives to facilitate the conversion of existing buildings with natural gas infrastructure to clean energy alternatives.
- **Development on City Land.** Limit the use and expansion of natural gas infrastructure on city land to the extent feasible and practicable.
- **Rebate Programs.** Support programs that encourage homeowners/commercial building owners to implement electrification retrofits, with an emphasis on Alameda’s most vulnerable residents.
- **Partners.** Partner with PG&E and other utility companies to plan for the safe transition from natural gas to clean energy alternatives, including removal of infrastructure that pose hazards when not in use.

Policy CC-14 Energy Efficiency and Conservation. Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment.

Actions:

- **Weatherization and Energy Efficient Building Renovations.** Streamline permitting requirements for energy-efficient building renovations such as weatherization.
- **Public Facilities.** Incorporate renewable energy and energy efficiency into public facility capital improvements.
- **Low Carbon Materials.** Require or promote the use of low-carbon building materials where available.

- **Energy Audits.** Consider requirements for energy audits or updates at major renovations or time of sale.
- **Incentives.** Incent the use of the Living Community Challenge, LEED for Neighborhood Development, or similar third-party certification system to certify climate friendly construction.
- **Solar Panels.** Encourage installation of solar panels and energy storage equipment in new development.
- **Low Carbon Materials.** Seek low-carbon alternatives to conventional construction materials.

Policy CC-15 Neighborhood Resilience Coordination. Consider piloting building electrification, water conservation and other climate initiatives at a block or neighborhood level to more cost effectively transition to climate friendly energy, water, and resource use similar to the EcoBlocks model in Oakland.

Policy CC-16 Water Efficiency and Conservation. Minimize water use in new construction and landscaped areas to make Alameda more resilient to drought and generate less wastewater.

Actions:

- **Water Efficient Landscape Requirements.** Maintain up-to-date water-efficient landscaping regulations and ordinances to reduce water use in both private and public landscapes.
- **Bay-Friendly Landscapes.** Require new developments to include native plant species, and non-invasive drought tolerant/low water use plants in landscaping.
- **Water-Efficient Buildings.** Require low-flow fixtures, such as low-flow toilets and faucets in new construction.
- **Recycled and Reclaimed Water.** Coordinate the production and usage of recycled and reclaimed water for potable and non-potable uses.

Policy CC-17 Zero Waste Culture. Create a zero waste culture by implementing the City of Alameda 2018 Zero Waste Implementation Plan (ZWIP).

Actions:

- **Zero Waste Awareness.** Promote a zero waste culture by developing programs and campaigns that recognize the shared responsibility for each individual to reduce and divert waste from landfill disposal.
- **Single-Use Plastics.** Work toward eliminating single-use plastic products. Promote and require compostable, recyclable and/or reusable products.
- **Technical Assistance.** Provide targeted technical assistance for commercial and multi-family waste generators, which have the greatest opportunity to reduce waste sent to landfill.

- **Food Recovery.** Work with waste management partners to create a food recovery program and enhance organics management to reduce organic material disposal in landfills and reduce greenhouse gas emissions.
- **Salvageable Materials.** Update the City's construction and demolition debris recycling ordinance to include specific incentives or requirements for deconstruction (rather than demolition) of existing buildings to salvage usable building components (lumber, doors, fireplaces, brick) on homes of a certain age.
- **CAL Green.** Implement CALGreen building code requirements to divert and recycle construction and demolition waste, and to use locally-sourced building materials and recycled content building materials, including mulch/compost.
- **Franchise Agreements.** Expand the high diversion franchise agreement with waste management partner(s) related to recycling, organics and construction and demolition waste to further support Alameda in reaching its zero waste goal.

Policy CC-18 Building Renovation and Reuse. To reduce construction waste and GHG emissions associated with construction material manufacture and transportation, encourage and facilitate renovation and rehabilitation of existing buildings instead of demolition and new construction.

Goal 3 Prepare the community to adapt to the disruptions and impacts of climate change, including but not limited to rising sea and groundwater levels, increasingly severe storms and flooding, more frequent heat events, hazardous air quality days, and power outages.

Policy CC-19 Sea Level Rise Protection. Reduce the potential for injury, property damage, and loss of natural habitat resulting from sea level rise.

Actions:

- **Flood Protection Maps.** Work independently or in cooperation with county and regional agencies to delineate projected inundation zones for years 2070 and 2100 representing sea level as the sea level rise allowance plus mean higher high water consistent with the most up to date guidance from the Ocean Protection Council (OPC) for sea level rise in California.
- **Contaminated Lands.** Identify and map lands at risk of inundation from rising ground water and flood inundation.
- **Land Planning.** Prioritize areas of little or no flood risk for new flood-incompatible development (i.e. housing and commercial development) in new plans or zoning decisions.
- **Shoreline Habitat and Buffer Lands.** Identify, preserve and restore existing undeveloped areas susceptible to sea level rise to increase flood water storage which can reduce flood risk, enhance biodiversity, and improve water quality. Maintain and restore existing natural features

(i.e. marsh, vegetation, sills, etc.) between new development and the shore to allow for marsh or beach migration.

- **Conservation Easements.** Consider use of conservation easements to maintain private lands for shoreline and beach migration.
- **Nature Based Flood Control Systems.** When designing new flood control systems where none currently exist, prioritize use of nature based flood control systems, such as horizontal levees, marsh lands, or beach restoration.

Policy CC-20 Land Development. Require new development to reduce the potential for injury, property damage, and loss of natural habitat resulting from groundwater and sea level rise.

Policy CC-21 Sea Level Rise Plans. Develop neighborhood shoreline sea level rise protection and funding plans to address increasing sea and groundwater level rise and storm events.

Policy CC-22 Critical Public Assets. Implement improvements to move or protect critical public assets threatened by sea-level rise or rising groundwater.

Actions:

- **Stormwater.** Identify funding sources to improve the public stormwater infrastructure and ensure it meets current needs and is prepared for the effects of sea level rise and climate change.
- **Transportation.** Work with Caltrans and the Alameda County Transportation Commission to identify funding to adapt the regional and local roadways in Alameda.

Policy CC-23 Rising Groundwater. Prepare for the impacts of rising groundwater levels on private and public property.

Actions:

- **Infrastructure and Access.** Develop plans and strategies to protect and/or relocate critical infrastructure and maintain access to impacted property.
- **Building Codes.** Prepare and adopt revised zoning and building codes to increase resiliency of new buildings against the impacts of rising groundwater.
- **Annual Review.** Annually monitor groundwater levels and progress on specific strategies to mitigate impacts.

Policy CC-24 Water Retention. Develop and maintain large and small areas to retain water within the City that may serve as areas of “retreat” during large storm events.

Policy CC-25 Heat and Wildfire Smoke Emergencies. Create a network of smoke and heat emergency shelters throughout Alameda.

Goal 4 Protect and conserve Alameda’s natural resources and recognize their intrinsic importance in responding to climate change and fostering a healthy environment

that sustains people, neighborhoods and the unique natural resources of the island.

Policy CC-26 Urban Forest. Take actions to maintain and expand the number of trees in Alameda on public and private property to improve public health, reduce pollution, and reduce heat island effects.

Actions:

- **Tree Preservation.** Continue to require and incent the preservation of large healthy native trees and vegetation.
- **New Development and Parking Lots.** Require ample tree plantings in new development and related parking lots.
- **Strengthen Tree Replacement Requirement.** Strengthen the tree replacement requirement for any protected trees removed due to new development or redevelopment.
- **Prioritize Tree Planting.** Invest in tree planting and maintenance, especially in low canopy areas, neighborhoods with under-served or under-represented communities and in areas identified by the Bay Area Greenprint (that uses a variety of factors such as pollution, heat island effects, and vulnerable communities).
- **Resilient Urban Forest.** Support the increase of the tree canopy in Alameda with drought tolerant, shade-producing, fire resistant tree species.
- **Public Parks and Lands.** Utilize public parks and public lands, such as Alameda Point, to significantly increase the urban forest.
- **Maintain and Update the City's Master Tree Plan.** Ensure an up-to-date, climate friendly Master Tree Plan that selects drought tolerant, shade-producing, fire-resistant tree species adapted to Alameda's changing climate. This plan should include:
 - Design of new tree wells to allow better infiltration of stormwater;
 - Promotion of sidewalk gardens and other sidewalk landscaping;
 - Expansion of greenery in the public right-of-way and removal of impervious surfaces as feasible;
 - Strategies to reduce conflicts between trees, tree roots, and other public infrastructure such as sidewalks, overhead lines and street infrastructure; and
 - Identification of funding for both expansion and maintenance of the urban forest.

Policy CC-27 Habitat and Biological Resource Protection and Restoration. Protect and restore natural habitat in support of biodiversity and protect sensitive biological resources and to prepare for climate change.

Policy CC-32 Lagoons. Continue to preserve and maintain all lagoons as natural habitat as well as an integral component of the City's green infrastructure network and flood control system.

Policy CC-33 Green Infrastructure. Protect San Francisco Bay, San Leandro Bay, and the Alameda Oakland Estuary by promoting, requiring, and constructing green infrastructure that improves stormwater runoff quality, minimizes stormwater impacts on stormwater infrastructure, improves flood management, and increases groundwater recharge.

Land Use and City Design Element

Policy LU-3 Complete Streets. Promote safe and walkable neighborhoods with inter-connected well-designed streets that serve the needs of all Alamedans and all modes of transportation.

Policy LU-11 On-Island Employment. Increase on-island employment to provide additional employment opportunities for Alameda residents, reduce commute hour congestion, and reduce transportation related greenhouse gas emissions.

Policy LU-13 Green Economy. Promote a green economy that reduces greenhouse gas emissions generated by Alameda businesses.

Actions:

- **Incentives.** Provide incentives and support for businesses that benefit Alamedans and the environment by reducing their greenhouse gas emissions and air pollution through clean energy alternatives, electrification of buildings and operations, and other environmental best practices.
- **Green Business Practices.** Encourage Alameda businesses and industries to become more sustainable and continue to make positive contributions to the community by, for example, hiring locally, supporting telecommuting, utilizing solar power and prioritizing electric vehicles. This includes providing electric vehicle charging stations and a variety of transit options.
- **Housing and Transportation.** To reduce greenhouse gas emissions generated by employee commute trips, support housing at all affordability levels in proximity to employment areas, improve bus, ferry, bicycle and pedestrian facilities in proximity to employment areas, and allow child care facilities in business areas.

Goal 3 Make Alameda a more sustainable and environmentally sensitive community.

Policy LU-14 Planning for Climate Change. Prepare for climate change and reduce greenhouse gas emissions regionally and locally.

Actions:

- **Sustainable Communities Strategy.** Maintain consistency between the City's General Plan, the Municipal Code, and the region's Sustainable Communities Strategy Plan Bay Area.

- **State and Regional Programs.** Continually evaluate City policies, ordinances, and actions, to ensure that the City supports and is an active participant in state and regional efforts to address climate change through greenhouse gas emission reduction, transportation system improvements, and increased affordable housing supply near job centers, public transportation facilities, and other services.

Policy LU-15 Housing Needs. Provide land appropriately zoned to accommodate local and regional affordable housing needs and support the region’s Sustainable Communities Strategy to address climate change as well as housing needs.

Policy LU-16 Climate-Friendly, Transit-Oriented Mixed-Use Development. Permit higher-density, multi-family and mixed-use development on sites within walking distance of commercial and high quality transit services to reduce automobile dependence, automobile congestion, greenhouse gas emissions, and energy use; provide for affordable housing; make efficient use of land; and support climate friendly modes of transportation, such as walking, bicycling, and transit use.

Actions:

- **Transit-Oriented Zoning.** To support additional ferry service, bus services, and future rail service in Alameda, amend the zoning code to allow for higher-density, mixed-use, multi-family housing in transit-rich locations.
- **Mixed-Use Shopping Centers.** Amend the zoning code to facilitate the redevelopment and reinvestment in Alameda’s single-use retail shopping centers and large open parking lots with higher density mixed use development with ground floor commercial, service, and office uses, and upper floor multi-family housing.
- **Incentives.** Utilize strategic infrastructure investments, public lands, public/private partnerships, and density bonuses and waivers to incentivize and support mixed-use, transit-oriented development in transit rich locations.
- **Transportation Demand Management Programs.** Require new developments to include transportation services and facilities to support the City’s mode shift goals.
- **Parking Requirements.** Amend the Municipal Code to replace minimum parking requirements with maximum parking requirements to disincentivize automobile ownership and reduce construction and land costs to help make housing more affordable.

Policy LU-17 Adaptive Reuse and Restoration. Support and encourage rehabilitation, restoration, and reuse of existing structures to retain the structure’s embodied energy and reduce the generation of waste.

Mobility Element

Goal 3 Expand and improve alternatives to low occupancy automobile trips to incentivize trip planning and mode shift to more environmentally sustainable modes of transportation while recognizing the diverse needs for mobility.

Policy ME-14 Active Transportation. Reduce traffic, improve public health, increase transportation equity, reduce greenhouse gas emissions, air and noise pollution, increase access to transit, enhance quality of life, and improve the efficiency of the transportation system by making Alameda a city where people of all ages and abilities can safely, conveniently, and comfortably walk, bike, and roll to their destinations. (See also Policies LU-2, LU-3, OS-7, OS-8, and CC-7).

Actions:

- **Connectivity and Comfort.** *Develop a well-connected, low-stress network of pedestrian and bicycle facilities that are comfortable and well-designed for people of all ages and abilities and seamlessly link with Alameda’s key destinations such as schools, designated commercial corridors, grocery stores, parks and transit stops.*
- **Maintenance.** *Regularly maintain the active transportation network for safety and comfort, and to ensure current design standards are being met.*
- **Community Awareness and Education.** *Foster a strong culture of walking and bicycling through public outreach efforts such as community-wide campaigns, community-implemented street art and placemaking (such as painted bulb-outs and intersections), and ongoing education in collaboration with community organizations and neighborhood groups.*
- **Equity.** *Ensure that comfortable bicycle and pedestrian facilities and programs are implemented equitably throughout the city.*
- **Safety.** *Increase the safety of all people bicycling and walking by improving the design of streets and active transportation facilities, educating the public, and enforcing traffic laws.*
- **Design for Context.** *Develop a pedestrian-specific street typology to apply to all city streets, based on street function and characteristics, and match recommended design treatments to each typology.*
- **Supportive Infrastructure.** *Ensure the installation of plentiful secure short and long-term bicycle parking, including on-street bicycle corrals, throughout the city. Develop and implement a citywide bicycle wayfinding signage program.*
- **Low-stress Bikeways.** *Prioritize low-stress biking infrastructure such as separated bicycle lanes, bicycle boulevards (Slow Streets) and bike trails, which is comfortable for the majority of the community. Build these facilities with enough width to comfortably and safely support all people and devices into the future, including cargo bikes, electric bikes, and*

scooters, all operating at different speeds. Provide separated bicycle lanes instead of unprotected, standard bicycle lanes, unless not feasible.

- **Separate Pathways.** Where there is adequate space and existing or anticipated future demand, build separate facilities for people walking and bicycling, given their different speeds.
- **Safer Intersections.** Use hardscape treatments and traffic signals to separate people walking and bicycling from motorists at busy and larger intersections.
- **Legislative Agenda.** Support strong regulatory efforts to prioritize safety for people walking or biking, including efforts to improve and accelerate Caltrans' complete streets policies and allow the thoughtful deployment of automated speed cameras.

Policy ME-16 Transit. Improve mobility and reduce greenhouse gas emissions and air and noise pollution by making Alameda a city where more people have access to safe, reliable, high quality transit.

Actions:

- **Partnerships.** Collaborate and partner with AC Transit, the Water Emergency Transit Agency (WETA), BART, the Alameda Transportation Management Associations, community groups, and employers to provide expanded and more convenient transit services throughout the city as well as to downtown Oakland, San Francisco, and the BART system.
- **Travel Time.** Incentivize transit use by making on- and off-Island transit ride times faster than or comparable to on- and off-Island drive times through traffic management and parking management.
- **Bus Transit.** Work with AC Transit to provide convenient and frequent bus service within a 1/4 mile of every Alameda resident and business and establish a regular cross Alameda service connecting east Alameda and Park Street to west Alameda and the Alameda Point Ferry Terminals and key retail destinations.
- **Land Use.** Coordinate transit investments with land use decisions in order to maximize returns, enhance livability, and minimize congestion. Adopt development regulations that discourage automobile ownership in new projects.
- **Water Transit.** Expand ferry services from Alameda to San Francisco, the Peninsula, and other locations throughout the Bay Area. Consider the use of hovercraft and other water-based transportation technologies to connect the south shore of Alameda to employment centers and other destinations that cannot be served by traditional ferries.
- **BART to Alameda.** Continue to work with BART to include an Alameda BART station in the design of BART's plan for a second San Francisco Bay crossing connecting Oakland and San Francisco.

- **Transit Connections.** *Improve connections between bus transit and water transit facilities and services, such as a cross-town bus service connecting east and west Alameda to the Ferry Terminal services at Alameda Point.*
- **Citywide “Transit Pass.”** *Work with AC Transit, WETA and MTC to develop a multi-modal fare payment system that could be used to develop an “Alameda Transit Pass” program that would provide every Alameda resident and employee with a pass for use on any bus or ferry at any time.*
- **Bus Transit Priority Infrastructure.** *Provide transit priority lanes, transit signal priority, and transit queue jump lanes, and make traffic signal upgrades including coordination, to make transit faster and more reliable.*
- **Bus Stops.** *Ensure consistency with AC Transit Multimodal Design Guidelines and move bus stops to the far side of the intersection to increase safety and improve bus speeds and reliability and work to make all bus stops fully ADA-accessible to accommodate those with mobility challenges.*
- **Committees.** *Maintain committees such as the Interagency Liaison Committee that promote partnerships with transit service providers to improve transit services for Alameda.*

Policy ME-17 Shared Mobility. Promote shared mobility devices programs such as bicycle share, car share, and electric scooter share programs that reduce the need for an automobile trip.

Actions:

- **Car Share.** *Continue to partner with car share companies to provide car share services in all Alameda neighborhoods.*
- **Scooter Share.** *Develop a permitting system to all electric scooter companies to operate in Alameda.*
- **Bike Share.** *Continue to explore options and partners to provide bicycle share services in Alameda.*

Policy ME-20 New Development. Require that new development support citywide traffic reduction, greenhouse gas reduction, and sustainable transportation.

Actions:

- **Transportation Demand Management Ordinance.** *Prepare and adopt a Transportation Demand Management Ordinance requiring new development to actively meet the mobility needs of residents and employees, including but not limited to contributing to annual operations and capital improvements for supplemental transit, water shuttle, land-based shuttle services and improvements to the bicycle and pedestrian network.*

- **Alameda Transportation Management Association.** Expand the Alameda Transportation Management Association to provide transportation services to all new developments, existing business associations and neighborhoods to improve citywide transportation service options and reduce greenhouse gas emissions and vehicle miles traveled in Alameda.

Policy ME-21 Parking and Curbside Management. Manage parking and allocate curb space to reduce congestion, reduce vehicle miles traveled, and increase safety.

Actions:

- **Availability.** Manage parking pricing to ensure that approximately 15% of public parking is always available, allowing people to find parking faster and reducing emissions and potential conflicts with pedestrians while drivers circle for parking.
- **Long-Term Parking.** Ensure that long-term parking pricing is equitable and considers the impact of the fees on lower income or other vulnerable users.
- **On-street Metered Parking and Surface Lots.** Utilize parking pricing to encourage one or two open spots on every block, and a few open spots in city-owned surface lots to minimize circling for parking.
- **Ferry Terminal Parking.** Establish daily parking fees at all of Alameda's regional ferry terminals. Periodically adjust pricing to ensure that some spaces are always available for riders on later boats.
- **Reinvest Funds.** Equitably reinvest net proceeds from parking revenues in improved access and amenities in the community and programs such as rebates or need-based parking passes.
- **Disability Parking.** Provide appropriate, well-located, accessible parking for mobility impaired drivers.
- **Carpool Parking.** Incentivize and reward carpooling by providing carpool-only parking spaces in locations throughout Alameda such as major employment sites and at ferry terminals and transit transfer locations.
- **Bicycle and Scooter Parking.** Provide plentiful and secure parking for micro-mobility devices (i.e. scooters and bicycles). Where possible, include valet programs funded by parking fees at transportation transfer points, such as the ferry terminals and along commercial transit corridors.
- **Shared Off-Street Parking.** Revise development requirements and ordinances to facilitate shared and well-managed off street parking facilities.
- **Neighborhood Parking Permits.** Continue to provide opportunities for neighborhood preferential parking permits.

Goal 4 Sustainability - Reduce the impacts of transportation systems on the environment and transition to a more resilient transportation system to address the impacts of climate change.

Policy ME-22 Environmentally Friendly Transportation. Reduce traffic, pollution, and greenhouse gas emissions by reducing reliance on the single occupancy vehicle and reducing vehicle miles traveled (VMT).

Actions:

- **Climate-Friendly Modes of Transportation.** Reduce pollution and transportation greenhouse gas emissions by promoting, and when appropriate, requiring the use of low and zero emission vehicles and equipment and taking action to support use of micro mobility devices to reduce energy use and carbon emissions from personal vehicles.
- **Clean Transit.** Support and encourage use of hydrogen fuel cells and other alternative energy sources for transit vehicles.
- **Climate-Friendly Modes of Transportation.** Reduce greenhouse gas emissions from transportation by improving the local roadway network to support environmentally sensitive mobility choices such as transit, walking and bicycling.
- **Transit Use.** Reduce automobile greenhouse gas emissions by increasing transit use.
- **Vehicle Sharing and Carpooling.** Reduce automobile greenhouse gas emissions by supporting and encouraging vehicle sharing and carpooling.
- **Climate-Friendly, Walkable and Transit-Oriented Development.** Reduce reliance on automobile use and reduce vehicle miles traveled by requiring walkable, transit-oriented, medium and higher-density mixed-use development in transit-rich areas and along commercial corridors such as much of Park Street, Webster Street and Otis Drive, as well as near ferry terminals.
- **Climate-Friendly Employment Commute Behavior.** To reduce vehicle miles travelled, greenhouse gas emissions, and commute hour congestion, make Alameda an ideal location to work from home in the Bay Area by collaborating with employers, Island businesses, and improving work-from-home infrastructure.

Policy ME-23 Resilient Transportation Infrastructure. Plan, develop and construct transportation infrastructure that is resilient to the impacts of climate change and reduces greenhouse gas emissions.

Actions:

- **Adaptation Strategies.** Implement improvements to protect critical transportation facilities threatened by sea-level rise or rising groundwater.

- **Nature Based Design.** Require the use of bioswales, rain gardens, trees, coastal habitat restoration, and pervious materials as an integral part of an adaptation solution to enhance water quality, ecosystem health and the visual appearance of the facility, and to reduce greenhouse gas emissions, the urban heat island effect and the flooding impacts on the stormwater system and the San Francisco Bay.
- **Lifecycle Emissions.** Reduce lifecycle emissions by considering variables such as asphalt compaction effect on vehicle fuel efficiency and transportation project design specifications.

Policy ME-24 Regional Partners. Work with Caltrans, the East Bay Regional Park District (EBRPD), the Alameda County Transportation Commission and the City and Port of Oakland to prepare regional facilities for the impacts of climate change and identify funding to adapt the regional and local roadways in Alameda.

Open Space, Recreation, and Parks Element

GOAL 2 Expand and improve the parks and open space system to address the evolving needs of a growing community, serve all residents and neighborhoods equitably throughout the city, and adapt to the climate crisis.

Policy OS-11 Climate Adaptation. Adapt the existing park and open space network to rising sea levels, more severe storm events and wave energy and rising groundwater.

Actions:

- **Green Infrastructure.** Utilize natural, green or 'soft infrastructure' such as sand dunes and wetlands over 'hard infrastructure' (concrete seawalls and/or levees) wherever possible.
- **Hidden Benefits.** Recognize and promote the open space network as an expanding asset that contributes to community character, reduces stormwater runoff and increases citywide resiliency.

Health and Safety Element

OBJECTIVE 3 Minimize risks of loss of life, personal injury, property damage and environmental degradation posed by sea level rise, flooding and storm water runoff.

Policy HS-17 Public Infrastructure Priorities. Identify public transportation, open space, and stormwater and wastewater facilities, shoreline assets, and other public assets vulnerable to sea level and groundwater rise and flooding hazards, and prioritize projects for adaptation funding.

Policy HS-18 Preferred Strategies. Develop sea level and groundwater rise adaptive strategies for different areas of the City for public discussion and evaluation, including but not limited to: avoidance/planned retreat, enhanced levees, setback levees to accommodate habitat transition zones, buffer zones, beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood-proofing structures, and/or provisions for additional flood water pumping stations, and inland detention basins to reduce peak discharges.

Policy HS-19 Public Infrastructure. Protect and upgrade public infrastructure, including but not limited to streets, wastewater systems and pump stations, storm water systems and pump stations and electric systems and facilities to ensure capacity and resilience during storm events, high tides, and groundwater and sea level rise, to decrease the chance of flooding of nearby streets, utilities, and private property.

Policy HS-63 Diesel Emissions. Continue to work with the Bay Area Air Quality Management District (BAAQMD) to reduce diesel related air quality impacts throughout the region and in Alameda.

Policy HS-64 Reduce Wood Smoke. Adopt ordinances and regulations to reduce wood smoke in Alameda.

Policy HS-65 Construction Air Pollution. Protect public health by requiring best management practices at construction sites and carefully evaluating the potential health risks of projects that generate substantial toxic air contaminants or projects that proposed to place a sensitive use in proximity to an existing source of contaminants.

Actions:

- **Construction Dust.** Reduce dust and harmful air pollutants resulting from construction activities by requiring compliance with best management practices (BMPs) as recommended by the Bay Area Air Quality Management District (BAAQMD).
- **Health Risk Assessment.** Require preparation of a Health Risk Assessment in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD and adoption of any recommended health risk mitigations for projects that generate substantial toxic air contaminant (TAC) emissions within 1,000 feet of sensitive receptors or for sensitive receptor uses proposed to be located within 1,000 feet of an existing major source of toxic air contaminants.

IMPACTS

Impact 12-1

Implementation of the Alameda General Plan 2040 would not generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment. (LTS)

Construction Emissions

Construction activities associated with future development under the proposed General Plan would generate temporary short-term GHG emissions from heavy-duty construction equipment, worker trips, and material delivery and hauling. On-site activities would consist of the operation of off-road construction equipment, as well as on-site truck travel (e.g., haul trucks, dump trucks, and concrete trucks). Off-site sources would include emissions from construction vehicles used for hauling materials and worker vehicle trips.

The BAAQMD has not established thresholds of significance for GHG emissions resulting from construction activities at the General Plan level. Rather, the BAAQMD encourages the incorporation of best management practices (BMPs) to reduce GHG emissions during construction. New development facilitated by the *Alameda General Plan 2040* would be required to comply with the BAAQMD BMPs for reducing construction emissions of PM₁₀ and PM_{2.5}. The provisions to limit idling set forth in the BAAQMD BMPs would also reduce GHG emissions during construction.

The Alameda Municipal Code also contains a Waste Management Plan requirement for all projects in the City that cost \$100,000 or more to construct. The Waste Management Plan details the volume or weight of construction and demolition debris by material type to be generated and the maximum amount that can feasibly be diverted via reuse or recycling, while requiring at least a 50 percent diversion from disposal sites.

The proposed General Plan includes policies and programs specifically designed to address GHG emissions during project construction activities. Policy CC-17—Zero Waste Culture calls for the City to update the construction and demolition recycling ordinance to reduce the waste that often ends up in a landfill that could be reused or recycled. Policy CC-17 also implements CALGreen building code requirements to divert and recycle construction and demolition waste, and to use locally-sourced building materials and recycling content building materials, including mulch/compost.

Future development facilitated by the *Alameda General Plan 2040* would be required to comply with the requirements of the General Plan and programs related to GHG emissions as well as applicable BAAQMD regulations and standards in the Alameda Municipal Code. Therefore, future development under the proposed General Plan during construction would not result in significant adverse effects related to GHG emissions. Thus, General Plan construction GHG emission impacts would be ***less than significant***.

Operational Emissions

The operational GHG emissions from buildout of the proposed General Plan have been calculated through use of CARB's EMFAC 2017 Model⁷ for transportation emissions and the City's CARP for building energy, waste, water and wastewater (see Appendix C for supporting calculations). The operational GHG emissions are based on General Plan buildout conditions within the City, which would increase daily vehicle miles traveled (VMT) by 862,300, population by 22,700 persons, and jobs by 13,000 compared to 2020 baseline conditions. The 2040 population and jobs are projected to be 99,700 and 45,100, respectively, which equals a service population of 144,800.

Table GHG-1 shows the estimated GHG emissions generated from the entire City for the year 2040. It should be noted that Table GHG-1 is based on current (year 2020) emission rates for building energy usage, solid waste, water, and wastewater sources, while adjusting the year 2020 emissions to year 2040 emissions as a function of service population (population and jobs). Future State

⁷ California Air Resources Board, EMFAC2017 Web Database, V1.0.2, <https://arb.ca.gov/emfac/2017/>

regulations will result in lower emissions from these sectors, but 2020 emissions rates are conservatively used in this analysis.

Transportation-related GHG emissions are based on VMT projections for 2040 General Plan buildout conditions within the City and 2040 GHG emission factors from CARB’s EMFAC 2017 Model, which calculates a 31-percent decrease in 2040 GHG emission factors compared to 2020 GHG emission factors due to future regulatory improvements and increased use of electric vehicles. In addition, the transportation-sector emissions only account for previously adopted State regulations and do not account for recent State regulations, including the anticipated reductions from Executive Order N-79-20 (September 2020) that requires 100 percent of new passenger vehicles sold in California to be zero-emissions by 2035. The proposed GHG emission reduction policies and programs in the proposed General Plan would further reduce the GHG emissions shown in Table GHG-1.

As shown in Table GHG-1, the Citywide GHG emissions per service population are projected to be 2.2 metric tons of CO₂e in 2040 with implementation of the General Plan. The GHG emissions per service population for the 2040 buildout conditions would not exceed the 4 metric tons of CO₂e per service population threshold. The threshold was calculated based on GHG emissions thresholds provided in CARB’s Scoping Plan.

The proposed General Plan would further reduce GHG emissions through additional policies and programs specifically designed to address GHG emissions during operation. Policy CC-6–Climate-Friendly Vehicles and Equipment, Policy CC-10–Climate Friendly, Walkable and Transit-Oriented Development, Policy CC-14–Energy Efficiency and Conservation, and Policy CC-16–Water Efficiency and Conservation would all reduce GHG emissions during operation of future projects.

Table GHG-1: Estimated GP 2040 Buildout Greenhouse Gas Emissions

Source	Annual CO ₂ e Metric Tons
Transportation	207,352
Building Energy Usage	105,650
Waste, Water, and Wastewater	10,969
Total Emissions	323,971
Service Population (Population + Jobs)	144,800
Emissions Per Service Population	2.2
<i>2040 Efficiency Threshold</i>	4
Potentially Significant?	No

SOURCE: CARB EMFAC 2017 and City of Alameda CARP 2019.

In addition, the 2019 California Code of Regulations Title 24 Part 6 standards (Building Energy Efficiency Standards) also now require all homes built in California to have zero-net-energy use, which is achieved through energy-efficiency measures as well as required rooftop solar photovoltaic

systems. The Building Energy Efficiency Standards also apply to non-residential buildings and require a variety of energy efficiency measures to be implemented during construction of the structures to reduce energy usage as well as GHG emissions. Subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds. Therefore, operational GHG impacts of the *Alameda General Plan 2040* would be ***less than significant***.

Mitigation Measure 12-1

None required.

Impact 12-2

Implementation of the *Alameda General Plan 2040* would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. (LTS)

2017 Climate Change Scoping Plan

In the 2017 Climate Change Scoping Plan, the CARB recommends local plan-level targets of no more than 6.0 metric tons of CO₂e per capita by 2030 and no more than 2.0 metric tons of CO₂e per capita by 2050. Based on a linear interpolation of these two GHG reduction goals, the proposed target for the *Alameda General Plan 2040* would be no more than 4.0 metric tons of CO₂e per service population by 2040. As shown in Table GHG-1, the City is projected to emit 2.2 metric tons of CO₂e per service population at buildout of the General Plan. As such, the City is projected to achieve the GHG reduction target numbers provided in the 2017 Climate Change Scoping Plan.

Additionally, the City's proposed General Plan and approved CARP provide GHG reduction actions similar to those recommended in the 2017 Climate Change Scoping Plan. In addition, the Building Energy Efficiency Standards also now require all homes built in California shall to zero-net-energy use, which can be achieved through energy-efficiency measures as well as required rooftop solar photovoltaic systems. The Building Energy Efficiency Standards also apply to non-residential buildings and require a variety of energy efficiency measures to be implemented during construction of the structures to reduce energy as usage as well as air emissions.

Future projects under the proposed General Plan would be required to comply with State standards for new construction as well as local GHG reduction actions in the City's proposed General Plan and approved CARP. Therefore, development facilitated by the proposed General Plan would not conflict with the 2017 Climate Change Scoping Plan.

Plan Bay Area 2040: Strategy for a Sustainable Region

To achieve the ABAG and MTC sustainable vision for the San Francisco Bay Area, the *Plan Bay Area 2040* land use concept plan concentrates the majority of population and employment growth in and around Priority Development Areas (PDAs). Under this Plan, PDAs are described as transit-

oriented, infill development opportunity areas within existing communities. Two-thirds of all regional growth by 2040 is allocated within PDAs. The PDAs are also expected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or about 744,230) of new jobs. The City of Alameda is located within the Bayside Subregion that is forecasted to have an increase of 272,000 housing units between the baseline year of 2010 and the proposed plan year of 2040. Buildout of the proposed General Plan could yield up to approximately 10,000 new residential units. As such, the General Plan would promote implementation of *Plan Bay Area 2040*. In addition, as described above, the policies and programs of the *Alameda General Plan 2040* encourage the use of alternative modes of travel and reduce dependence on auto use, consistent with Plan Bay Area's vision. Therefore, implementation of the proposed General Plan would not conflict with *Plan Bay Area 2040*.

BAAQMD 2017 Clean Air Plan

The BAAQMD's *2017 Clean Air Plan* contains control measures that focus primarily on reducing GHG emissions across the following sectors: stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. Table GHG-2 identifies the control measures from the *2017 Clean Air Plan* that are relevant to the City of Alameda and the proposed General Plan's consistency with those measures.

As demonstrated by Table GHG-2, the General Plan would be consistent with the applicable control measures of the *2017 Clean Air Plan*. Future projects allowed by the *Alameda General Plan 2040* would be required to comply with requirements of the General Plan and CARP that aim to reduce GHG emissions in the City. Therefore, development facilitated by the proposed General Plan would not conflict with the *2017 Clean Air Plan*.

Conclusion

In conclusion, development facilitated by the proposed General Plan would be required to comply with applicable policies in the General Plan and CARP intended to reduce GHG emissions. In addition, the City and activities within the City would be required to comply with existing and new federal, State, and local statutes and regulations related to GHG emissions. As demonstrated above, development facilitated by the proposed General Plan would not conflict with the applicable plans for reducing GHG emissions. Therefore, impacts related to conflicts with plans, policies and regulations for reducing GHG emissions would be ***less than significant***.

Mitigation Measure 12-2

None required.

Table GHG-2: Consistency with 2017 Clean Air Plan

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
<p>TR2 Trip Reduction Programs: Encourage trip reduction policies and programs in local plans, e.g., general and specific plans while providing grants to support trip reduction efforts. Encourage local governments to require mitigation of vehicle travel as part of new development approval, to adopt transit benefits ordinances in order to reduce transit costs to employees, and to develop innovative ways to encourage rideshare, transit, cycling, and walking for work trips.</p>	Yes	<p>The General Plan contains the following policies to reduce trips and vehicle miles traveled in order to improve air quality:</p> <p>Policy CC-7: Climate-Friendly Active Modes of Transportation. Reduce greenhouse gas emissions from transportation by improving the local roadway network to support all mobility choices while specifically encourage walking and bicycling.</p> <p>Policy CC-8: Transit Use. Reduce automobile GHG emissions by increasing transit use.</p> <p>Policy CC-9: Vehicle Sharing. Support and encourage vehicle sharing to reduce the demand for vehicle parking and increase access to mobility.</p> <p>Policy CC-10: Climate-Friendly, Walkable and Transit-Oriented Development. Reduce reliance on automobile use and reduce vehicle miles traveled by prioritizing transit oriented, medium and high density mixed-use development in transit-oriented areas and commercial corridors.</p> <p>Policy CC-11: Climate-Friendly Employment Commute Behavior. Encourage residents to telecommute or work from home to reduce vehicle miles traveled and greenhouse gas emissions.</p>
<p>TR9 Bicycle and Pedestrian Access and Facilities: Encourage planning for bicycle and pedestrian facilities in local plans, e.g., general and specific plans, fund bike lanes, routes, paths and bicycle parking facilities.</p>	Yes	<p>The General Plan contains the following policies related to bicycle and pedestrian access/facilities in order to improve air quality:</p> <p>Policy CC-7: Climate-Friendly Active Modes of Transportation. Reduce greenhouse gas emissions from transportation by improving the local roadway network to support all mobility choices while specifically encourage walking and bicycling.</p>

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
		<p>Policy CC-10: Climate-Friendly, Walkable and Transit-Oriented Development. Reduce reliance on automobile use and reduce vehicle miles traveled by prioritizing transit oriented, medium and high density mixed-use development in transit-oriented areas and commercial corridors.</p>
<p>TR13 Parking Policies: Encourage parking policies and programs in local plans, e.g., reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing (such as “SF Park”) in high-traffic areas.</p>	<p>Yes</p>	<p>The General Plan contains the following policies related to parking policies in order to improve air quality:</p> <p>Policy CC-9: Vehicle Sharing. Support and encourage vehicle sharing to reduce the demand for vehicle parking and increase access to mobility.</p> <p>Policy CC-10: Climate-Friendly, Walkable and Transit-Oriented Development. Reduce reliance on automobile use and reduce vehicle miles traveled by prioritizing transit oriented, medium and high density mixed-use development in transit-oriented areas and commercial corridors.</p>
<p>EN2 Decrease Electricity Demand: Work with local governments to adopt additional energy efficiency policies and programs. Support local government energy efficiency program via best practices, model ordinances, and technical support. Work with partners to develop messaging to decrease electricity demand during peak times.</p>	<p>Yes</p>	<p>The General Plan contains the following policy reducing electricity demand in order to improve air quality:</p> <p>Policy CC-14: Energy Efficiency and Conservation. Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment.</p>
<p>BL4 Urban Heat Island Mitigation: Develop and urge adoption of a model ordinance for “cool parking” that promotes the use of cool surface treatments for new parking facilities, as well existing surface lots undergoing resurfacing.</p>	<p>Yes</p>	<p>The General Plan contains the following policy related to the urban heat island effect in order to improve air quality:</p> <p>Policy CC-26: Urban Forest. Take actions to maintain and expand the number of trees in Alameda on public and private property to improve public health, reduce pollution, and reduce heat island effects.</p>
<p>NW2 Urban Tree Planting: Develop or identify an existing model municipal tree planting ordinance and encourage local governments to adopt such an ordinance. Include tree planting recommendations from</p>	<p>Yes</p>	<p>The General Plan contains the following policy related tree planting in order to improve air quality:</p>

2017 Bay Area Clean Air Plan Control Measure	Consistent?	Discussion
the Air District's technical guidance, best practices for local plans, and CEQA review.		Policy CC-26: Urban Forest. Take actions to maintain and expand the number of trees in Alameda on public and private property to improve public health, reduce pollution, and reduce heat island effects.
WA3 Green Waste Diversion: Develop model policies to facilitate local adoption of ordinances and programs to reduce the amount of green waste going to landfills.	Yes	The General Plan contains the following policy related to waste diversion in order to improve air quality: Policy CC-17: Zero Waste Culture. Create a zero waste culture by implementing the City of Alameda 2018 Zero Waste Implementation Plan (ZWIP).
WA4 Recycling and Waste Reduction: Develop or identify and promote model ordinances on community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects.	Yes	The General Plan contains the following policy related to recycling and waste reductions in order to improve air quality: Policy CC-17: Zero Waste Culture. Create a zero waste culture by implementing the City of Alameda 2018 Zero Waste Implementation Plan (ZWIP).
WR2 Support Water Conservation: Develop a list of best practices that reduce water consumption and increase on-site water recycling in new and existing buildings; incorporate into local planning guidance.	Yes	The General Plan contains the following policy reducing water demand in order to improve air quality: Policy CC-16: Water Efficiency and Conservation. Minimize water use in new construction and landscaped areas to make Alameda more resilient to drought and generate less wastewater.

SOURCE: Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 19, 2017.

CUMULATIVE IMPACTS

GHG emissions related to implementation of the General Plan are not confined to a particular air basin as GHG emissions are a global pollutant. Thus, impacts related to GHG emissions and global climate change also address cumulative impacts. Therefore, the analyses under Impacts 12-1 and 12-2 also address cumulative impacts. As discussed under Impact 12-1, the Citywide GHG emissions per service population are projected to be 2.2 metric tons of CO₂e in 2040 with implementation of the General Plan, well below the 4 metric tons of CO₂e per service population threshold based on GHG emissions thresholds provided in CARB's Scoping Plan. As discussed under Impact 12-2, development facilitated by the General Plan would not conflict with applicable plans, policies, or regulations for reducing GHG emissions.

Furthermore, each new development project pursued under the *Alameda General Plan 2040* would require evaluation for potential GHG emissions impacts, and mitigation would be identified to reduce or avoid potentially significant impacts. If a project's GHG emissions fall below the BAAQMD's project-level thresholds, the project's GHG emissions impacts would be individually and cumulatively less than significant. Each future development project in Alameda would be assessed for potential GHG emissions impacts under BAAQMD's project-level thresholds and would be required to comply with existing and new federal, State, and local statutes and regulations related to GHG emissions, including General Plan policies intended to reduce GHG emissions. Compliance with these regulations and policies would further reduce GHG emissions. Given this, potential GHG emissions impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

13. NOISE

13.1 Introduction

This chapter describes the noise environment in the City of Alameda and identifies potential noise impacts expected to result from implementation of the *Alameda General Plan 2040*. The chapter addresses relevant City of Alameda noise goals and policies pertaining to the control of noise as set forth in the Safety and Noise Element of the proposed General Plan and noise regulations in the City of Alameda Municipal Code.

13.2 Setting

Similar to most jurisdictions, Alameda's regulation of noise is based on commonly-employed noise parameters that are based on the fundamental metric of a decibel (dB), which is a unit of sound energy intensity caused by rapid fluctuation of air pressure as sound waves travel outward from a source. Decibels are logarithmic units that compare the wide range of sound intensities to which the human ear is sensitive, with 0 dB corresponding roughly to the threshold of hearing.

A frequency weighting measure, which simulates human perception, is commonly used to describe noise environments and to assess impacts on noise-sensitive areas. A-weighting of sound levels best reflects the human ear's reduced sensitivity to low and extremely high frequencies, and correlates well with human perceptions of the annoying aspects of noise. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. The dBA scale is cited in most noise criteria, including Alameda's General Plan and Municipal Code standards.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A-weighted sound level over a given time period (L_{eq});¹ average day-night 24-hour average sound level (L_{dn})² with a nighttime increase of 10 dBA to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL),³ also a 24-hour average that includes both an evening and a nighttime weighting. Peak

¹ The Equivalent Sound Level (L_{eq}) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

² L_{dn} is the day-night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a ten-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

³ CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

noise levels, such as train pass-bys or operation of heavy-duty construction equipment, are often described as the highest instantaneous noise measurement during any measurement period (L_{max}).

Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45-60 dBA range, and high above 60 dBA. Outdoor day/night sound levels (L_{dn}) vary over 50 dBA, depending on the specific type of land use. The L_{dn} noise levels average approximately 35 dBA in wilderness areas, 40 to 50 dBA in small towns or wooded residential areas, 75 dBA in major metropolis downtown areas, and 85 dBA near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse levels of noise with respect to public health. Table NOI-1 identifies decibel levels for common sounds heard in the environment.

Table NOI-1
Typical Noise Levels

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	Normal speech at 3 feet
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10-20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: (modified from Caltrans Technical Noise Supplement, 2013)

Exposures to very high noise levels can damage hearing. Noise can also interfere with sleep, increase stress, and cause other adverse health effects, but human response to noise varies, and noise that provokes annoyance or discomfort in one person may be easily tolerated by another person. In general, people find high-frequency noise, such as intermittent peak noise levels emitted by a heavy-duty truck, more objectionable than a low-frequency noise, such as the steady drone of

a fan. The A-weighting scale discussed above reflects the fact that humans have better hearing sensitivities in the high-frequency region than the low.

The amount of background noise present before an intruding noise occurs affects people's perception of noise. If the intruding noise is very distinctive or considerably louder than the background ambient noise, it is usually perceived as more objectionable, such as when a jet aircraft flies over a residential area. The context of noise also affects the perception of noise. For example, most people will find an automobile horn more disturbing at 2:00 a.m. than the same noise in traffic at rush hour.

The trained healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady single-frequency (pure tone) signals in the mid-frequency range under controlled conditions in an acoustics laboratory, while changes of 2 dBA can be detected outside such controlled conditions by trained ears. However, the average person can barely perceive noise level changes of 3 dBA in normal environmental noise.⁴

Noise is not additive in a linear, arithmetic way, such that adding two noise sources of the same volume results in a doubling of the combined noise levels. Sound decibels are logarithmic units, and combine accordingly. For example, if noise sources of 69 dB and 70 dB are combined, the resulting noise level is 73 dB. When the difference between the two noise sources is greater, the combined sound value is increased by a lower amount. For example, if noise sources of 60 dB and 66 dB are combined, the resulting noise level is 67 dB.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dBA per doubling of distance because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dBA per doubling of distance). Widely distributed noise, such as a large industrial facility spread over many acres or a street with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA each time the distance doubles from the source, which also depends on ground absorption.⁵ Noise from large construction sites will exhibit characteristics of both "point" and "line" sources, and attenuation will therefore generally range between 4.5 and 7.5 dBA each time the distance doubles. Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will further increase the attenuation provided by distance alone.

⁴ California Department of Transportation (Caltrans), Division of Environmental Analysis, *Technical Noise Supplement*, Section 2.2.1.1: Human Response to Changes in Noise Levels, September 2013.

⁵ California Department of Transportation (Caltrans), Division of Environmental Analysis, *Technical Noise Supplement*, Section 2.1.4: Sound Propagation, September 2013.

REGULATORY FRAMEWORK

Federal

U.S Environmental Protection Agency

The primary mission of the U.S. Environmental Protection Agency (EPA) is to protect human health and the environment. In order to ensure that Americans have clean air, land, and water, the EPA administers and enforces a wide range of environmental laws and regulations. The agency also conducts scientific research on the effects of pollutants on ecosystems and human health at national Office of Research and Development laboratories operated at each of the EPA's ten regional offices located throughout the country. Two key environmental laws administered by the EPA—the Clean Air Act and the Clean Water Act—are discussed in Chapter 6, Air Quality, and Chapter 12, Hydrology and Water Quality, respectively. Two additional environmental laws administered by the EPA are addressed below.

Noise Control Act

The Noise Control Act of 1972 (42 U.S.C. §4901 *et seq.*) established a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The Act authorized the establishment of federal noise emission standards for products distributed in commerce (e.g., machinery, equipment, appliances, etc.) and established a framework for effective coordination of federal research and activities in noise control. While primary responsibility for control of noise rests with State and local governments, the Noise Control Act provides a uniform federal approach for addressing major noise sources in commerce. The Noise Control Act directs the EPA to coordinate the programs of all federal agencies relating to noise research and noise control.

Quiet Communities Act

The Quiet Communities Act of 2015 (H.R. 3384) required the EPA to reestablish an Office of Noise Abatement and Control, previously phased out in 1982, and reauthorized the Office's activities through fiscal year 2020. The bill amends the Noise Control Act of 1972 to expand the quiet communities grant program to include grants for establishing and implementing training programs on use of noise abatement equipment and implementing noise abatement plans.

The Quiet Communities Act identifies the following responsibilities of the Office of Noise Abatement and Control: (1) promoting the development of effective state and local noise control programs; (2) carrying out a national noise control research program; (3) carrying out a national noise environmental assessment program; (4) establishing regional technical assistance centers to assist state and local noise control programs; (5) assessing the effectiveness of the Noise Control Act of 1972; and (6) conducting related outreach and educational activities. The Office must emphasize noise abatement approaches that rely on local and state activities, market incentives, and coordination with other agencies.

The bill also requires the EPA to conduct a study of airport noise that examines the selection of noise measurement methodologies used by the Federal Aviation Administration, the threshold of noise at which health impacts are felt, and the effectiveness of noise abatement programs at airports in the U.S.

State

CCR Title 24 Noise Insulation Standards

Title 24 of the California Code of Regulations, the Building Standards Administrative Code, contains the State Noise Insulation Standards (Part 2, Appendix Chapter 12A), which specify interior noise standards for new hotels, motels, apartment houses, and dwellings other than single-family dwellings. Such new structures must be designed to reduce outdoor noise to an interior level of (no more than) 45 L_{dn}. The California Noise Insulation Standards also establish standards for sound isolation of separating walls, corridor walls, and floor/ceiling assemblies in multi-family residential construction. State noise standards for on-road motor vehicles are contained in the Motor Vehicle Code.

Government Code Section 65302(f)

Government Code Section 65300 *et seq.* establishes requirements for general plans that must be adopted by each county and city in the State. Section 65302(f) requires the general plan to include a noise element that identifies and appraises noise problems in the community. The noise element must analyze and quantify, to the extent practicable, the current and projected noise levels for highways and freeways, primary arterials and major local streets, railroads and ground rapid transit systems, airport operations and aircraft overflights, industrial plants, and other ground stationary noise sources that contribute to the community noise environment, such as military installations.

The Governor's Office of Planning and Research (OPR) publishes detailed guidelines for preparation of general plans in compliance with Government Code Section 65300 *et seq.*⁶ These guidelines note that the first Noise Element Guidelines were issued by the Department of Health Services Office of Noise Control in 1976 pursuant to Health and Safety Code section 46050.1, followed shortly thereafter by a model noise ordinance. Although the Office of Noise Control no longer exists, the principles that it developed are still valid and widely used. Its Noise Element Guidelines, which are presented in Appendix D of the *General Plan Guidelines*, are an additional resource that local governments may consult in the development of their noise elements. Appendix D provides a land use compatibility matrix for establishing acceptable ambient outdoor noise levels for different types of land uses. Most California cities and counties incorporate this matrix, shown on Figure NOI-1, into their noise elements. The matrix identifies a range of noise levels that are normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable for a range of different land uses, with the most restrictive noise ranges applicable to residential uses and noise-sensitive land uses such as schools, libraries, churches, hospitals, and nursing homes.

⁶ State of California, Governor's Office of Planning and Research, *General Plan Guidelines*, 2017.

COMMUNITY NOISE EXPOSURE

LAND USE CATEGORY	Ldn or Cnel, dB					
	55	60	65	70	75	80
Residential - Low Density Single family, Duplex, Mobile Homes	Orange	Orange	Grey	Grey	Dark Grey	Dark Grey
Residential Multi. Family	Orange	Orange	Orange	Grey	Dark Grey	Dark Grey
Transient Lodging Motels, Hotels	Orange	Orange	Orange	Grey	Dark Grey	Dark Grey
Schools, Libraries, Churches, Hospitals, Nursing Homes	Orange	Orange	Orange	Orange	Grey	Dark Grey
Auditoriums, Concert Halls, Amphitheaters	Grey	Grey	Grey	Grey	Dark Grey	Dark Grey
Sports Arena, Outdoor Spectator Sports	Grey	Grey	Grey	Grey	Dark Grey	Dark Grey
Playgrounds, Neighborhood Parks	Orange	Orange	Orange	Orange	Grey	Dark Grey
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Orange	Orange	Orange	Orange	Orange	Dark Grey
Office Buildings Business Commercial and Professional	Orange	Orange	Orange	Orange	Orange	Dark Grey
Industrial, Manufacturing, Utilities, Agriculture	Orange	Orange	Orange	Orange	Orange	Dark Grey

INTERPRETATION:



Normally Acceptable

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



Normally Unacceptable

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



Clearly Unacceptable

New construction or development should generally not be undertaken.

Figure NOI-1

**Land Use Compatibility for
Community Noise Environments**

Source: Governor's Office of Planning and Research, 2020

Local/Regional

OAK Airport Land Use Compatibility Plan

As discussed in more detail in Chapter 16, Hazards and Hazardous Materials, Bay Farm Island and the eastern end of Alameda Island are located within the Airport Influence Area (AIA) surrounding Oakland International Airport, and new development within these areas would therefore be subject to the provisions of the *Oakland International Airport Land Use Compatibility Plan (ALUCP)*.⁷ The ALUCP is intended to minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."⁸ With respect to noise, the ALUCP identifies noise contours that are designated around Oakland International Airport (OAK), corresponding to 60-, 65-, 70-, and 75-decibel (dB) Community Noise Equivalent Level (CNEL) exposure contours. More recent noise contour mapping excludes the 60-dB contour, as illustrated on Figure NOI-2. The noise compatibility zones were established to prevent the development of noise-sensitive land uses in areas surrounding the airport that are exposed to significant levels of aircraft noise. Although the southern portion of Bay Farm Island is located within the 65-dB contour, most of the City lies outside the airport's noise compatibility zones.

Table 3-1 of the ALUCP lists compatibility criteria for land uses within the different noise exposure zones surrounding Oakland International Airport, similar to the Land Use Noise Compatibility Matrix included in the *State of California General Plan Guidelines (2017)* published by the Governor's Office of Planning and Research, and which is reflected in the Noise and Safety Element of the proposed Alameda General Plan. The criteria for some of the more likely future development on Bay Farm Island within Oakland International Airport's noise compatibility zones include the following:

- **Residential** uses within the 60-dB noise contour are *Conditionally Acceptable*, while such uses are *Incompatible* within the 65- and 70-dB contours.
- **Office and Commercial** uses are *Compatible* within the 60-dB noise contour and *Conditionally Acceptable* within the 65- and 70-dB noise contours.
- **Light Industrial/Research and Development** uses are *Compatible* within the 60- and 65-dB noise contours and are *Conditionally Acceptable* within the 70-dB noise contour.

Conditionally Acceptable uses must be capable of attenuating exterior noise to the indoor CNEL of 45 dB, though standard construction methods will normally suffice to achieve this standard. With respect to outdoor uses, the ALUCP states that "caution should be exercised with regard to noise-sensitive uses." The ALUCP identifies the following noise-sensitive land uses on Bay Farm Island within the AIA: Tillman Park, Leydecker Park, Godfrey Park, Harrington Field, Amelia Earhart Elementary, Coastline Christian School, a daycare center, and several places of worship.

⁷ Alameda County Airport Land Use Commission, *Oakland International Airport–Airport Land Use Compatibility Plan*, December 2010.

⁸ California Public Utilities Code, Section 21670(a)(2).



Figure NOI-2

Noise Compatibility Zones Surrounding Oakland International Airport

Source: Port of Oakland

Alameda Noise Regulations

Chapter IV, Article II of the Alameda Municipal Code sets forth the Alameda Noise Regulations, which establish acceptable outdoor noise levels as measured at receiving properties. Municipal Code Section 4-10.4 states that it is unlawful for any person to create or allow the creation of noise that exceeds the limits defined in the Noise Regulations. One set of standards is established for commercial properties, while a more restrictive set of standards applies to residential, school, church, hospital, and public library properties. Five levels of restrictions are promulgated for each of the land use groups. As shown in Table NOI-2, the louder a noise is, the shorter the time that that noise level is permitted. For example, a noise level of 70 dBA may only be produced on a residential property for a maximum of 1 minute out of any given hour.

Table NOI-2
Alameda Exterior Noise Standards at Receiving Land Uses

Category	Cumulative Number of Minutes Allowed in Any 1-Hour Time Period	Noise Limit (dBA) for Applicable Time Period	
		Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Single- or Multi-Family Residential, School, Hospital, Church, or Public Library Properties			
1	30	55 dBA	50 dBA
2	15	60 dBA	55 dBA
3	5	65 dBA	60 dBA
4	1	70 dBA	65 dBA
5	0	75 dBA	70 dBA
Commercial Properties			
1	30	65 dBA	60 dBA
2	15	70 dBA	65 dBA
3	5	75 dBA	70 dBA
4	1	80 dBA	75 dBA
5	0	85 dBA	80 dBA

Source: Alameda Municipal Code, Section 4-10.4

The Alameda Noise Regulations also generally prohibit any person from willfully or negligently causing any noise disturbance, which it defines as any sound which endangers or injures the safety or health of human beings or annoys or disturbs a reasonable person of normal sensitivity. Factors that may be considered in determining whether a noise disturbance exists include, but are not limited to, the following:

- The relative sound level of the objectionable noise to the ambient noise;
- The proximity of the objectionable noise to residential sleeping facilities or public camping facilities;
- The number of persons affected by the objectionable noise;
- The day of the week and time of day or night the objectionable noise occurs;
- The duration of the objectionable noise and its tonal, informational, or musical content;
- Whether the objectionable noise is continuous, recurrent, or intermittent;
- The nature and zoning of the area within which the objectionable noise emanates; and
- Whether the objectionable noise can be heard 200 feet away from where it emanates during the day, or 100 feet away from where it emanates during nighttime hours.

Section 4-10.5 of the Alameda Noise Regulations prohibit a range of specific acts, noises, and noise sources, including some of the following examples (among others):

- any radio, television set, phonograph, drum, musical instrument, or similar device which produces or reproduces sound in such a manner as to create a noise disturbance;
- any animal or bird which howls, barks, meows, squawks, or makes other noises continuously and/or incessantly for a period of 10 minutes or intermittently for one-half hour or more which creates a noise disturbance across a residential or commercial real property line, excluding animals or birds teased or provoked or making noise in response to a person trespassing or threatening to trespass upon private property in or upon which the animal or bird is situated;
- testing of any emergency alarm device or system between the hours of 7:00 p.m. and 7:00 a.m.;
- sounding of burglar alarms or fire alarms for more than 15 minutes;
- Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line; or
- playing of vehicle or portable radio, tape, or disc devices in public places so that the device is audible 50 feet from the device.

Noises excluded from regulation include those from recreational programs or activities conducted within City parks between the hours of 9:00 a.m. and 10:15 p.m., refuse and garbage collection by a City-authorized collector that occurs between 5:30 a.m. and 10:00 p.m., and maintenance of residential properties that occurs between the hours of 7:00 a.m. and 9:00 p.m. on any day except

Saturday or Sunday, or between the hours of 9:00 a.m. and 8:00 p.m. on Saturday or Sunday. Emergency warnings, such as police, fire, and ambulance sirens, are also exempt from noise regulation.

Pursuant to Section 4-10.7 of the Alameda Municipal Code, noise-generating construction activities must be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays. Construction is prohibited on Sundays and holidays. Certain exemptions apply, including for construction work performed by a person at his/her principal place of residence or rental property.

EXISTING CONDITIONS

The existing ambient noise environment throughout Alameda is predominantly comprised of two noise sources: vehicular traffic on the City's roadways and aircraft traffic flying into and out of Oakland International Airport and San Francisco International Airport. Other significant noise sources along the Northern Waterfront include industrial and commercial activity at the Port of Oakland and ship maintenance and other activities on Coast Guard Island. Aircraft overflights are the most significant sources of noise impacts in Alameda's residential neighborhoods, with some Alameda residents currently experiencing single-event noise in excess of 80 dBA on a nightly basis.

The corridors along Alameda's more heavily traveled roadways have the highest continuous sources of noise, as shown on Figure NOI-3. The highest ambient noise levels measured by the City occur on the Otis Drive bridge connecting Alameda Island to Bay Farm Island, where the average noise level is 75 to 79 dBA CNEL. This same noise level flanks Island Drive as it comes off the bridge, continuing south for about 1,700 feet to Robert Davey Jr. Drive. The alignment of Harbor Bay Parkway provides the other primary source of vehicular noise on Bay Farm Island, with an ambient noise level of 70 to 74 dBA CNEL extending along its entire length.

On the main island, the noisiest roadways are Webster Street and Constitution Way south of the Webster/Posey Tubes, Ralph Appezato Memorial Parkway (RAMP), Lincoln Avenue, and Santa Clara Avenue and Encinal Avenue between Grand Street and Park Street, which all have an ambient noise level of 70 to 74 dBA CNEL flanking the roadways. Relatively high noise levels of 65 to 69 dBA CNEL occur along Broadway, Otis Drive, and Buena Vista Avenue, and along Central Avenue and Lincoln Avenue west of Grand Street.

As shown on Figure NOI-1, only the southern edge of Bay Farm Island is located with the 65-dBA noise contour defined around Oakland International Airport; this is a commercial area and there are no residential receptors within the 65-dBA noise contour. Nonetheless, peak instantaneous noise events from aircraft overflights are routinely experienced in Alameda neighborhoods at noise levels above 65 dBA L_{max} .



Figure NOI-3

Projected 2040 Noise Levels in Alameda

Source: City of Alameda, 2017

13.3 Standards of Significance

Appendix G of the *CEQA Guidelines* identifies a number of significant environmental impacts related to noise. A project may have a significant noise impact if it would include any of the following:

- generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- generation of excessive groundborne vibration or groundborne noise levels; or
- for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels.

13.4 Impacts and Mitigation Measures

The assessment of noise impacts identified in this chapter is based on the standards of significance listed in Section 13.3. This section identifies noise impacts that could result from the adoption and implementation of the proposed General Plan.

The proposed Health and Safety Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to reduce excessive and harmful noise from noise sources in Alameda. Specific objectives and policies of the Health and Safety Element that would reduce potential noise impacts include the following:

- Objective 6** **Protect Alameda residents from the harmful effects of exposure to excessive noise from aircraft, buses, boats, trucks and automobiles, and adjacent land uses.**
- Policy HS-41** **Transportation Noise.** Support state and federal legislation to reduce transportation noise from cars, trucks, and aircraft.
- Policy HS-42** **Aircraft Noise Reductions.** Through the City’s federal lobbying agenda, support and advocate for operational practices, changes to aircraft, new technologies, and physical improvements that would reduce the number of properties in Alameda that are impacted by aircraft noise.
- Policy HS-43** **Oakland International Airport Expansion and Settlement Agreement.** Oppose any expansion of operations at Oakland International Airport that would exceed the limits established by the existing Settlement Agreements.
- Policy HS-44** **Single Event Noise Exposure.** Work with Oakland International Airport to reduce the incidence of single event noise exposure above those currently experienced.
- Policy HS-45** **Neighborhood Noise Impacts.** Promote the reduction of existing and future potential harmful aircraft noise impacts in Alameda neighborhoods. (See also Policies LU-1 and ME-2).

Actions:

- **Community Participation.** *Actively promote participation in forums and discussions regarding operations and expansion plans for Oakland International Airport, including various working groups composed of individuals representing the City of Alameda, the City of San Leandro, the Port of Oakland, the Federal Aviation Administration (FAA), and the air transport industry to monitor the airport's noise control program and to make recommendations for the benefit of City of Alameda residents. These groups include the South Field & North Field Research Groups, Oakland Airport-Community Noise Management Forum and Oakland International Airport Aviation Stakeholder Advisory Committee.*
- **Representation.** *Seek local representation on all task forces, commissions and advisory boards established to guide airport policies and programs.*
- **Adherence.** *Seek adherence by airport operators to operational, development and management policies that will minimize noise nuisance and safety concerns for Alameda.*
- **North Field.** *Work with Oakland International Airport and the FAA to limit night use of North Field to Stage 3 and Stage 4 aircraft, and pursue mitigation of aircraft noise impacts to the fullest extent possible.*
- **Mitigation.** *Ensure that any changes to aircraft operations that would potentially result in increased noise levels in Alameda incorporate comprehensive noise mitigation measures, even when the impacts will be of limited duration. To the greatest extent feasible, any changes in airport activity should avoid impacts to noise sensitive uses such as residential areas and schools.*
- **Noise Abatement.** *To the extent permitted by the 1976 Settlement Agreement, the 2001 Settlement Agreement, the 2002 Settlement Agreement, the 2003 Addendum to the Settlement Agreement and the Written Compliance Plan, advocate for noise abatement and mitigation programs that are based not only on the airport's noise contour maps, but that consider other factors such as the frequency of overflights, single-event noise levels, the altitude of aircraft, the hours of operation, low frequency noise, and sensitive receptors. Monitor implementation and compliance with the Settlement Agreements of 1976, 2001 and 2002 and the Written Compliance Plan.*
- **Monitoring and Assurance.** *Obtain assurance that the future noise exposure for Alameda is known and that aircraft operations will be controlled to ensure that the projected noise levels are not exceeded. Validation of the 65 dB CNEL contour is to be carried out by means of a permanent full-time noise monitoring system to ensure compliance with the California Airport Noise standards and the ALUC Plan.*

Policy HS-46 Airport Expansion. Advocate for the following operational measures to be incorporated into any plans for the expansion of the Oakland International Airport:

Actions

- **Stage 3 and Stage 4 (least noisy) aircraft.** Continue to only allow Stage 3 and 4 aircraft on all runways directly overflying Alameda residential areas.
- **Enforced flight path alterations for noise abatement.** Continue to enforce flight path alterations for noise abatement for all runways, with remote monitoring sites maintained in locations mutually acceptable to the Port and the City.
- **Prohibition of Touch-and-Go Operations.** Continue to prohibit touch and go operations by jet aircraft.
- **Prohibition of Noisy Engine Ground Run-Ups at Night.** Continue to prohibit Ground Run-Ups outside of the Ground Run-Up Enclosure.
- **Prohibition of Intersection Departures.** Continue to prohibit intersection departures on Runway 28.

- Policy HS-47 Noise Monitoring.** Support the Port of Oakland in continuing to maintain a permanent full-time noise monitoring system that will (a) measure noise continuously, (b) separate OAK noise events from other noise source events, particularly overflights from other airports, (c) measure and augment CNEL values, (d) provide information on excessively noisy aircraft operations, (e) monitor effectiveness of noise abatement programs, and (f) meet the performance specifications of the California Noise Standards.
- Policy HS-48 Airport Safety Zones.** Regulate land uses within designated airport safety zones, height referral areas, and noise compatibility zones to minimize the possibility of future noise conflicts and accident hazards.
- Policy HS-49 Aircraft Crash Readiness.** Maintain a high degree of readiness to respond to aircraft crashes through participation in preparedness drills and mutual aid activities with the City and Port of Oakland to ensure quick and effective response to emergencies.
- Policy HS-50 Vehicles.** Enforce compliance with noise emissions standards for all types of automotive vehicles established by the California Vehicle Code and by federal regulations.
- Policy HS-51 Ships.** With the cooperation of the U.S. Coast Guard, the City of Oakland, and the Port of Oakland, enforce California noise emission standards for engine-driven maritime vessels.
- Policy HS-52 Transit.** Encourage BART and AC Transit to develop and apply noise-reduction technologies that reduce noise impacts associated with BART trains and buses.
- Policy HS-53 Streets.** Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions or design changes to Alameda streets. (See also Policies LU-2, ME-10 and ME-14).
- Policy HS-54 Truck Routes.** Maintain day and nighttime truck routes that minimize the number of residents exposed to truck noise. (See also Policy ME-11).

- Policy HS-55 Bay Farm Island Settlement Agreement.** Require new or replacement residential development within 500 feet north of the 65 dB CNEL Settlement Agreement line on Bay Farm Island, to include noise insulation that meets the standards established in the Airport Land Use Commission Plan for assumed exterior 65 dB CNEL.
- Policy HS-56 Interior Noise.** Support interior noise reduction strategies in all buildings, especially new or replacement residential construction, hotels, motels, and schools to ensure acceptable interior noise levels consistent with Figure 7.5.
- Policy HS-57 Disclosure.** Ensure that purchasers of property within or adjacent to the following areas are aware of existing and future potential noise conditions and the limitations of the City’s ability to abate existing or future noise conditions: the Oakland International Airport Influence Areas, as defined by the Alameda County Airport Land Use Commission (ALUC), commercial districts, truck routes, major arterials, Alameda Unified School District facilities, City recreation facilities, and business parks. Require the full disclosure of the existing and potential future noise levels within deeds and lease agreements as a condition of project approval, whenever possible.
- Policy HS-58 Business Operations.** To the extent feasible, through the development entitlement process, require local businesses to reduce noise impacts on the community by avoiding or replacing excessively noisy equipment and machinery, applying noise-reduction technology, and following operating procedures that limit the potential for conflicts.
- Policy HS-59 Noise Reduction Strategies in All Construction Projects.** Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage to structures will occur and disturbance to sensitive receptors would be minimized.
- Policy HS-60 Significant CEQA Impacts.** In making a determination of impact under the California Environmental Quality Act (CEQA), consider the following impacts to be “significant” if the proposed project causes: an increase in the Ldn noise exposure of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable for the affected land use, as indicated by State guidelines, or any increase in Ldn of 6 dBA or more.
- Policy HS-61 Community Noise Ordinance.** Continue to Enforce the Community Noise Ordinance by promptly responding to local noise complaints.

NOISE IMPACTS

Impact 13-1

Implementation of *Alameda General Plan 2040* could potentially generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (LTS)

Similar to existing noise conditions in Alameda, the primary source of noise that could be generated by implementation of the General Plan would be the noise generated by additional vehicular traffic generated by increases in population and automobile trips and temporary noise associated with construction of new buildings and construction associated with the redesign of streets and public facilities to reduce deaths and severe injuries on City streets and roads and improve access for transit, bicycles and pedestrians.

While some industrial development could produce other types of excessive noise, such as from operation of industrial equipment or machinery, these types of industries are not common in Alameda and new commercial development over the last 20 years has resulted in new office buildings, new bio-technology laboratories and offices, and light manufacturing businesses, none of which generate significant off-site noise impacts.

Project- and site-specific noise impacts from a specific use in the future would need to be evaluated at the time a specific project is proposed for consistency with the City of Alameda Noise Ordinance. Furthermore, General Plan Policy HS-58 requires local businesses to reduce noise impacts on the community by avoiding or replacing excessively noisy equipment and machinery, applying noise-reduction technology, and following operating procedures that limit the potential for noise conflicts, which would help minimize potential noise impacts from future commercial and industrial development.

Aircraft noise generated by the Oakland International Airport is a significant source of existing noise within the environment. The General Plan includes a number of policies addressing Oakland International Airport noise, but the General Plan would not result in an increase or decrease in the existing or future noise levels generated by the Oakland International Airport. Furthermore, new plane technology is resulting in a gradual decrease in the noise generated by an aircraft jet engine.

Vehicular traffic noise is a major noise source in Alameda. The noise level generated by a moving car is related to the speed of the vehicle and the volume of traffic on the street. With the citywide 25 mile per hour speed limit and General Plan policies in support of calming traffic in Alameda, reducing automobile trips, eliminating illegal speeding, and making Alameda streets safer for bicyclists, pedestrians, and transit riders, it should not be expected that the traffic noise produced by new development would have the potential to substantially increase the existing ambient noise levels. This is because, with respect to traffic noise sources, a doubling of traffic volumes is generally required before an increase in ambient noise will be perceived by the average person,

corresponding to a noise level increase of 3 dB.⁹ No development allowed under the General Plan would have the potential to double existing traffic volumes and, therefore, traffic from future development would not produce a perceptible increase in ambient noise levels.

While some future residential development could be developed on major transit corridors with existing high ambient noise levels, General Plan policies and Uniform Building Code standards establish the construction requirements to ensure a healthy and acceptable interior noise level in residential units and other sensitive land uses. Such a project would be required to meet the interior noise standards stipulated in the CCR Title 24 Noise Insulation Standards, which prohibit interior levels of residential buildings from exceeding 45 L_{dn}.

The Alameda Noise Regulations promulgated in Chapter IV, Article II of the Alameda Municipal Code would provide further protection of residential and commercial properties from exposure to excessive noise levels, with more stringent protections applying to residential uses, which are also applicable to school, hospital, church, and public library properties.

Future development facilitated by the General Plan could also occur in locations where it would be exposed to noise from aircraft overflights. CEQA no longer treats this type of impact of the existing environment on project occupants as a significant environmental effect. However, with the exception of a commercial area in the southern portion of Bay Farm Island, the rest of Alameda is located outside the 65-dBA noise contour around Oakland International Airport. The proposed General Plan also includes policies intended to reduce exposure to airport noise and require notification of purchasers of property within or adjacent to the Airport Influence Areas surrounding Oakland International Airport of the existing and future potential noise conditions associated with the airport.

Construction of new buildings, new sea walls and barriers to address sea level rise, and reconstruction of existing streets and roads to improve safety for bicyclists, pedestrians, and transit could all result in significant, but temporary increases in the vicinity of the project construction site. Table NOI-3 lists different types of common construction equipment along with the maximum noise levels they generate at a distance of 50 feet. Depending on the nature of a construction project and the equipment required, noise levels at the property line of a construction site could exceed 85 dBA L_{max} with the most commonly used equipment, and could be as high as 95 dBA L_{max} in cases where pile driving was required.

⁹ California Department of Transportation (Caltrans), *op cit*.

Table NOI-3
Noise Levels From Typical Construction Equipment

Construction Equipment	Typical Noise Level (dBA, L_{eq} at 50 feet)
Dump Truck	84
Portable Air Compressor	80
Concrete Mixer (Truck)	85
Flat-Bed Truck	84
Tractor	84
Backhoe	80
Scraper	85
Front-End Loader	80
Jack Hammer	85
Dozer	85
Grader	85
Crain (mobile or stationary)	85
Clam Shovel	93
Paver	85
Generator (25 kilovolt-amperes or less)	70
Generator (more than 25 kilovolt-amperes)	82
Concrete Saw	90
Welder/Torch	73
Slurry Trenching Machine	82
Impact or Vibratory Pile Driver	95
Vacuum Street Sweeper	80
Chain Saw	85
Blasting	94

Source: Caltrans, *Technical Noise Supplement*, 2013

However, construction noise is excluded from the exterior noise limits established in Section 4-10.4 of the Alameda Municipal Code. Similar to most jurisdictions in the Bay Area, Alameda does not typically treat construction noise as a significant impact as long as it complies with the restrictions on construction hours set forth in Section 4-10.7 of the Alameda Municipal Code, which requires noise-generating construction activities to occur only during the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays. Construction is prohibited on Sundays and holidays.

Although construction noise can be very disruptive and annoying to occupants of neighboring properties to an active construction site, such noise is common in an urban environment and is an unavoidable effect from in-fill, urban redevelopment. It is intermittent and typically of short-term duration. Depending on the site, excessive construction noise can often be reduced substantially by erection of temporary noise barriers along site boundaries. Noise at offsite properties can also be reduced by strategic placement of equipment staging areas, portable generators, materials stockpiles, and construction worker parking areas away from adjacent residential properties. Ensuring that equipment is properly muffled and maintained also helps minimize equipment-generated noise.

General Plan policies require noise-reduction strategies in all construction projects and a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g., pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor.

The existing Alameda and State regulations discussed above, in combination with the proposed General Plan policies cited above, would ensure that implementation of the *Alameda General Plan 2040* would not expose nearby residents to a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of applicable noise standards. This would be a ***less-than-significant impact***.

Mitigation Measure 13-1

None required.

Impact 13-2

Implementation of *Alameda General Plan 2040* could potentially result in the generation of excessive groundborne vibration or groundborne noise levels. (LTS)

Vibration generated by construction activity has the potential to damage structures and cause annoyance to people. Vibration-related damage can be structural, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. Disturbance to people can range from barely perceptible vibration to interference with sleep. Due to the seismically active nature of the San Francisco Bay Area, an experience of heavy vibration could provoke fear or anxiety about an earthquake.

Ground vibration that may be imperceptible to people can also cause secondary effects, such as the rattling of dishes in a cabinet. Recurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, even when vibration levels are well below minimum thresholds for damage potential.

Operation of typical construction equipment that would be employed during development of future projects allowed under the proposed General Plan is not associated with excessive levels of groundborne vibration or noise. Because vibration results in excited movement of the particles that compose an elastic system such as the ground or a structure, vibration effects are often described by a measurement of peak particle velocity (PPV), measured in inches per second (in/sec). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for damage to buildings, while the human body is more responsive to average vibration amplitude, which is calculated as the average of amplitude squared over time, typically a 1-second period. Average vibration amplitude (AVA) is always less than PPV, typically about 70 percent of the PPV value for a single-frequency condition. As discussed below, Caltrans' *Transportation and Construction Vibration Guidance Manual* provides PPV thresholds for both human exposure and structural exposure to groundborne vibration.¹⁰

The Caltrans Vibration Manual cites studies on human response to continuous vibration such as that generated by construction equipment (as opposed to transient vibration caused by impact pile drivers or blasting). Based on a synthesis of these studies, Caltrans recommends criteria for evaluating human annoyance due to the effects of vibration. These criteria are listed in Table NOI-4, which categorizes the range of human response to different levels of steady-state vibration. The potential for vibration impacts related to implementation of the proposed General Plan is compared to these thresholds, which are lower (i.e., more sensitive) than human response to transient vibration or continuous vibration from traffic sources.

The criteria recommended by Caltrans for evaluating potential structural damage from continuous vibration sources or frequent intermittent vibration sources (e.g., from a jackhammer) are presented in Table NOI-5; these criteria are used as thresholds of significance for this evaluation of the General Plan's potential construction-related vibration impacts on nearby buildings.

¹⁰ California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.

Table NOI-4
Human Response to Steady-State Vibration

Peak Particle Velocity (PPV) (inches/second)	Human Response
3.6–0.4	Very Disturbing/Severe
0.7–0.17	Disturbing
0.10	Strongly Perceptible
0.035	Distinctly Perceptible
0.012	Barely Perceptible

Source: Caltrans, *Transportation and Construction Vibration Guidance Manual*, April 2020

Table NOI-5
Vibration Thresholds for Potential Damage to Buildings
(for Continuous or Frequent Intermittent Sources)

Peak Particle Velocity (PPV) (inches/second)	Structure and Condition
0.08	Extremely fragile historic buildings
0.1	Fragile buildings
0.25	Historic and some old buildings
0.3	Older residential structures
0.5	New residential structures
0.5	Modern commercial buildings

Source: Caltrans, *Transportation and Construction Vibration Guidance Manual*, April 2020

The Caltrans Vibration Manual lists reference PPV values for various types of construction equipment. The reference PPV values are presented in Table NOI-6.

Table NOI-6
Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV at 25 ft. (in/sec)
Vibratory Roller	0.21
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
Crack-and-Seat Operations	2.4

Source: Caltrans, *Transportation and Construction Vibration Guidance Manual*, April 2020

The Caltrans Vibration Manual lists provides the following formula for calculating nearby ground vibration levels:

$$PPV_{Equipment} = PPV_{Ref} (25/D)^n \text{ (in/sec)}$$

Where:

$$PPV_{Ref} = \text{reference PPV at 25 ft.}$$

$$D = \text{distance from equipment to the receiver in ft.}$$

$$n = 1.1 \text{ (the value related to the attenuation rate through ground)}$$

As demonstrated by this formula and by Tables NOI-4 and NOI-5, the potential for vibration impacts is highly site- and project-specific, depending on the extent to which there is a presence of adjacent vulnerable buildings and/or the operation of equipment with high vibration amplitudes. The General Plan does not identify specific construction projects, so a quantified analysis of vibration impacts from construction of future development is not feasible in this programmatic EIR. However, a comparison of Tables NOI-3, NOI-4, and NOI-5 allows some general conclusions to be made.

The majority of typical construction equipment produces vibration amplitudes below 0.1 in/sec PPV at a distance of just 25 feet from the equipment, and the vibration falls off quickly with increased distance from the equipment. Thus, most construction operations would produce vibration below the Strongly Perceptible threshold identified by Caltrans for human response. Such vibration levels would not have potential to damage most buildings, with only extremely fragile historic buildings

being vulnerable to vibration levels up to 0.08 in/sec PPV. However, caisson drilling¹¹ and operation of large bulldozers, with reference PPVs of 0.089 in/sec, could exceed these thresholds, potentially causing architectural or structural damage to extremely fragile historic buildings in close proximity. Operation of small bulldozers, loaded trucks, and jackhammers would not produce vibration that would rise to the level of Strongly Perceptible on the human response scale, and would have no potential to damage nearby buildings, even extremely fragile historic buildings. However, based on the Caltrans Vibration Manual, crack-and-seat operations¹² would have the potential to severely disturb nearby people and to cause damage even to modern buildings. Similarly, operation of a vibratory roller, with a reference PPV of 0.21 in/sec at 25 feet, could damage fragile or extremely fragile historic buildings in close proximity.

While operation of most construction equipment at most sites would not produce vibration levels that would be disturbing to offsite receptors or have the potential to damage adjacent buildings, the discussion above shows that in some cases vibration caused by construction equipment could be highly disturbing to offsite receptors and/or cause damage to nearby buildings, which would be a significant, adverse impact. However, proposed General Plan Policy SN-56 requires a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. Where applicable, it requires all feasible mitigation measures identified in the vibration impact assessment to be implemented to ensure that no damage to structures will occur and disturbance to sensitive receptors would be minimized. With implementation of Policy SN-56, construction-related vibration effects would have a *less-than-significant impact*.

Mitigation Measure 13-2

None required.

Impact 13-3

Implementation of Alameda General Plan 2040 could potentially expose people to excessive aircraft noise levels. (LTS)

Future development facilitated by the General Plan could also occur in locations where it would be exposed to existing and future noise from aircraft overflights from the Oakland International Airport and the San Francisco International Airport. This would be an impact of the existing noise environment on the project, not an impact of the project on the environment. CEQA is intended to address the impact of the project on the natural environment. Therefore, the General Plan would not result in a significant impact as the result of proximity to the region's airports. Furthermore,

¹¹ Caisson drilling is the drilling of holes that are then filled with rebar and concrete to provide structural foundation support; they are often referred to as drilled piers.

¹² Crack and seat is a process used prior to pavement resurfacing that reduces the occurrence of reflection cracks (i.e., cracks directly above underlying seams or joints in the concrete) in the overlay. Reflection cracks can occur over time in an asphalt layer that is paved over concrete panels. These cracks occur from movement in the joints between the concrete panels. The crack and seat process involves cracking the concrete slabs to reduce their size and make the rigid panels more flexible, before seating them to reestablish support.

with the exception of the Harbor Bay Business Park in the southern portion of Bay Farm Island, the rest of Alameda is located outside the 65-dBA noise contour around Oakland International Airport. The proposed General Plan also includes policies intended to reduce exposure to airport noise and require notification of purchasers of property within or adjacent to the Airport Influence Areas surrounding Oakland International Airport of the existing and future potential noise conditions associated with the airport. Therefore, this would be a ***less-than-significant impact***.

Mitigation Measure 13-3

None required.

CUMULATIVE IMPACTS

Noise impacts are very location-specific, so although new vehicular traffic generated by multiple development projects both in Alameda and in neighboring Bay Area cities would cumulatively add to their noise environments, their noise contributions would not be cumulatively considerable because increased noise levels in one location do not add to noise levels in a different location. Additionally, traffic noise from individual development projects will not create a perceptible increase in the existing noise levels at or in the vicinity of those projects because no project would come close to doubling traffic in the vicinity of the project or on regional freeways that might serve the project. Finally, General Plan policies require compliance with the Alameda Noise Regulations which would ensure that their individual noise impacts would be less than significant, and their incremental effects would therefore not be cumulatively considerable.

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14. GEOLOGY AND SOILS

14.1 Introduction

This chapter describes general existing geological and soil conditions in Alameda and discusses the potential geologic and geotechnical hazards that could result from implementation of the proposed General Plan, including effects from erosion, surface fault rupture, strong ground shaking, liquefaction, liquefaction-induced lateral spreading, differential compaction, expansive soils, soft and/or loose soils, and differential settlement. Potential impacts to paleontological resources are also addressed.

When evaluating potential project impacts, the analysis presented in this chapter assumes that the project applicants for future development would comply with applicable State and local regulatory requirements pertaining to seismic design of buildings.

14.2 Setting

REGULATORY FRAMEWORK

This section summarizes the regulatory context for future development that would be facilitated by the proposed General Plan, including the laws, ordinances, regulations, plans, policies, and programs that are implemented at the State and local levels.

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

In California, the Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupation to avoid the hazard of surface fault rupture. This Act and supplemental amendments groups faults into the categories of active, potentially active, and inactive. Historic and Holocene age (from 11,700 years ago to the present) faults are considered active, Late Quaternary (500,000 to 1,000,000 years ago) and Quaternary age (1,000,000 to 2,600,000 years ago) faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be “sufficiently active” and “well defined” by detailed site-specific geotechnical explorations in order to determine that building setbacks might be required.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Chapter 7.8, Sections 2690-2699.6) was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a Seismic Hazard Zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. Development within 50 feet of a mapped fault zone is generally prohibited.

California Building Code

The California Building Code (CBC) developed by the California Department of Housing and Community Development (HCD) consists of a body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code (CBCS). Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable.

The CBC contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures and certain equipment. The CBC incorporates the International Building Code (IBC), with California amendments necessary for seismic safety. In 2000, the IBC replaced the former Uniform Building Code (UBC), which was a widely adopted model building code in the United States.

The section of the CBC referred to as ASCE Standard 7-10, Minimum Design Loads for Buildings and Other Structures, establishes the seismic design criteria and requirements for buildings and other structures subject to earthquake-induced ground motions. It includes detailed structural design requirements intended to provide adequate structural integrity to withstand the maximum credible earthquake and the associated ground motion acceleration.

The Alameda Building Code adopts and incorporates by reference the 2019 California Building Code.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code), codified in CCR Title 24, Part 11, is the first green building code adopted in the United States. It is intended to help the State meet the greenhouse gas (GHG) reduction targets established by Assembly Bill 32. Updated every three years, the most recent version is the 2019 CALGreen Code. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design;

(2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental quality.

Cities and counties may establish more restrictive building codes to address local climatic, geological, or topographical conditions, but all cities and counties are bound by the minimum standards established in the CALGreen Code. The Code includes mandatory measures for both residential and non-residential development, and an additional set of voluntary measures for both types of development. The general building energy efficiency standards in CALGreen require energy-efficient ceiling and rafter roof insulation, walls, floors, windows, doors, luminaires, heating and cooling systems, appliances, water heaters, and pool and spa systems.

NPDES Construction General Permit

In 1999, in accordance with National Pollutant Discharge Elimination System (NPDES) requirements, the State Water Resources Control Board (SWRCB) adopted a Statewide General Permit that applies to most stormwater discharges associated with construction activity and is intended to reduce the impacts of erosion and sedimentation during construction. The SWRCB issued General Construction Storm Water Permit Order 99-08-DWQ on August 19, 1999, and on December 8, 1999 the State Water Board amended the Order to apply to sites as small as 1 acre, reducing the previous threshold of 5 acres. The current Construction General Permit (CGP) was issued as Order No. 2009-0009-DWQ on September 2, 2009. Although the order expired on September 2, 2014, it has been administratively extended until a new order is adopted.

In accordance with the CGP, project applicants or developers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify construction best management practices (BMPs) intended to minimize erosion and discharge of sediment and other pollutants from the construction site. Additional details on the CGP and the NPDES Program are provided in Chapter 15, Hydrology and Water Quality.

EXISTING CONDITIONS

Regional Geology

California is divided into twelve geomorphic provinces that are topographic-geologic groupings of convenience based primarily on landforms and geologic history. Alameda lies within the Coast Range Geomorphic Province (Coast Range) geologic region, which is characterized by northwest-southeast-trending mountain ridges and intervening valleys that have formed over millions of years due to movements along major regional faults. This province extends from north of Santa Barbara northward to the Oregon border. It is delineated on the west by the Pacific Ocean and on the east by the Great Valley Geomorphic Province that underlies the Central Valley region of California. The Coast Range mountains generally rise to elevations of 2,000 to 4,000 feet above sea level, though they occasionally reach elevations of 6,000 feet.

The bedrock of the Coast Ranges is primarily composed of ancient seafloor sediments and volcanic rocks. In most areas, these rocks have been significantly hardened, mineralized, folded, and fractured by heat and pressure deep within the earth. This bedrock—broadly known as the Franciscan Complex and Great Valley Sequence—forms most of the hills and mountains of the San Francisco Bay Area. San Francisco Bay began forming during the Pleistocene Epoch, approximately 2 million years ago, when the San Francisco-Marine block began to tilt eastward along the Hayward Fault. The eastern side of the block became a depression and filled with sediment and water. The San Francisco Bay is generally bounded on the east by the Hayward fault and on the west by the San Andreas fault, which extends for more than 600 miles along the Coast Range Geomorphic Province. Other active earthquake faults transecting the region include the Hayward, Calaveras, Rogers Creek, Green Valley, and Concord faults, among others.

The Coast Ranges Geomorphic Province is generally divided in two sub-provinces, north and south of the San Francisco Bay. The City of Alameda is located in the South Coast Range sub-province. The major geographic features in the South Coast Range sub-province include: the Diablo Range, Santa Cruz Mountains, San Francisco Peninsula, and the San Francisco Bay. Significant physiographic features include the San Francisco Bay and the broad alluvial fans (or flatlands) that were formed between the mountain ranges and the San Francisco Bay.

The valleys, plains, estuaries, and bay floors of the region are filled by loose, geologically young deposits of mud, silt, sand and gravel. The character of these deposits varies significantly depending on their origin. For example, the Sacramento and San Joaquin Rivers deliver significant volumes of fine sediments (mud and silt), which slowly accumulate on the floors of the San Pablo and San Francisco Bays where currents are gentle. In contrast, peak winter flows from local creeks and streams often convey pulses of relatively coarse sediment (sand and gravel) to the region's valleys and plains, occasionally reaching estuarine sloughs. Over geologic time scales and with fluctuating sea levels, dominant geologic processes evolve and compete, with the result that the character of flatland deposits changes significantly over short distances and depths, and such deposits often produce heterogeneous geologic conditions.

Local Geology

Alameda Island was prehistorically a sand dune that formed during the last ice age over 10,000 years ago on a low-lying peninsula. These sands were eroded from the Oakland Hills and deposited when sea levels were low and San Francisco Bay was a wide river valley. When the sea level rose, the tops of the dunes remained. The Pleistocene deposits were uplifted and dissected by stream channels that were later filled with younger stream and fan deposits of the Temescal formation. During Holocene time, fluvial activity eroded these sediments and resulted in the estuary channel between Oakland and Alameda. Recent Bay mud and estuary deposits filled portions of the channel and buried near-shore portions of the Merritt Sand.

Since the mid-1800's, Alameda Island has been enlarged by placement of fill into the bay and estuaries, resulting in large sections of Alameda being underlain by artificial fill. In addition, the Oakland-Alameda Estuary was extended by man-made excavation and has been subjected to

dredging to facilitate ship passage. Today, the geology of Alameda is quite uniform, with about half of Alameda Island and about three-quarters of Bay Farm Island underlain by artificial fill that was placed in the middle of the 19th century to reclaim marshland. The fill was composed mainly of Merritt sand, Bay Mud, Temescal formation debris, broken rock, and miscellaneous refuse. The central and eastern half of Alameda Island, occupying the original prehistoric peninsula, is underlain by dune sand from the Holocene and Pleistocene eras, as shown on Figure GS-1. The central portion of Bay Farm Island that occupies the original land mass is underlain by Merritt sand from the Holocene and Pleistocene eras.

Due to the fact that Alameda is developed on leveled sand dunes and artificial fill, there are no significant land forms in the city; which is essentially level. Elevations across the western portion of the city range from about 5 feet to 10 feet above mean sea level. The eastern portion of Alameda Island, corresponding to the original sand dunes, reaches elevations of about 33 feet, sloping gently downward toward the northern, eastern, and southern shorelines, where elevations are 5 to 10 feet. Elevations across much of Bay Farm Island are below 10 feet above sea level, while some areas, particularly the Chuck Corica Golf Course, are a few feet below sea level. Shoreline Park on the northern shoreline is the most elevated place on the island, with a peak elevation of 46 feet.

Local Soils

As shown on Figure GS-2, the soils in central and eastern Alameda Island, encompassing an area of approximately 2,400 acres, consist of Baywood complex soils (hb78),¹ which are loamy sands on slopes of 2 to 9 percent that are somewhat excessively drained, with rapid permeability.² The depth to the water table is more than 80 inches. The complex includes about 5 percent other soils, including Laugenour loam, drained, and Omni silty clay loam, drained. About 35 percent of the complex is Urban land that has been altered or mixed, but closely resembles the Baywood soil. The Baywood soil is very deep, typically with a surface layer about 32 inches thick of brown and grayish brown, slightly acid loamy sand underlain by pale brown and light yellowish brown, slightly acid loamy sand extending to a depth of 60 inches or more. The soil has few limitations for urban development, but landscaped areas benefit from nitrogen and phosphate fertilizers and should be watered frequently and sparingly.

A north-central portion of the island encompassing about 146 acres has Xerothents, clayey soils (hb7f), with a typical profile comprised of 1 to 12 inches of loam, 12 to 32 inches of clay, and 32 to 60 inches of sandy clay loam. These soils are typically dark brown, dark grayish brown, or brown with a texture mainly of heavy clay loam, but including silty clay and clay. Permeability is slow to very slow, and the root zone is deep, extending to 60 inches. These soils have a high shrink-swell potential and low strength, which can result in cracked and shifted building foundations and roads. Therefore, special soil treatments are required for successful development. Lawns in this complex

¹ Designations in parentheses are the National map unit symbol of the soil type.

² Soils information is from the Web Soil Survey operated by the Natural Resources Conservation Service (NRCS), a division of the U.S. Department of Agriculture (USDA): <https://websoilsurvey.nrcs.usda.gov/app/>.

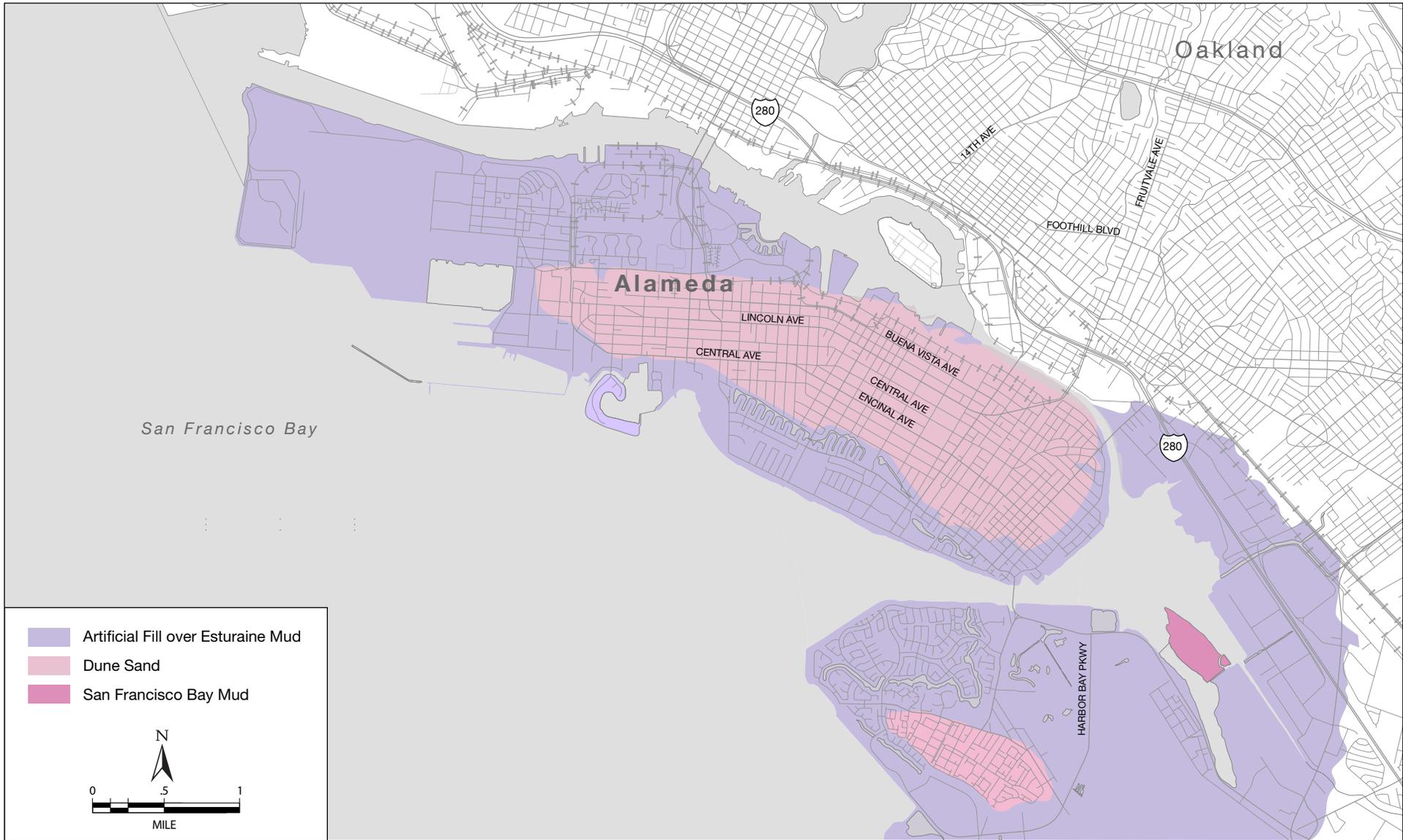


Figure GS-1

Quaternary Geological Deposits in Alameda

Source: U.S. Geological Survey, 2006

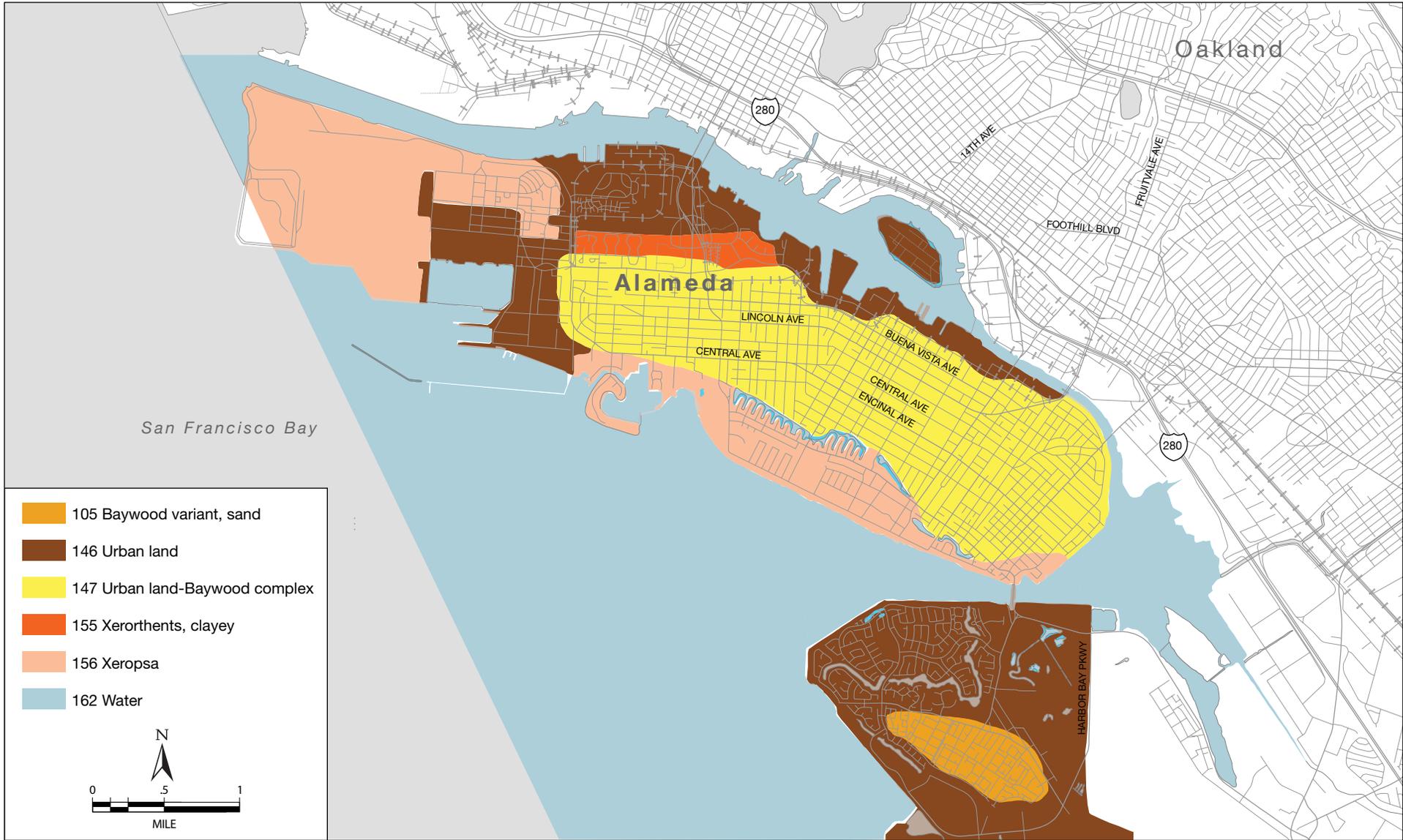


Figure GS-2

Soil Units in Alameda

Source: Natural Resources Conservation Service, 2020

should be watered slowly to reduce runoff. Adding organic matter to the soil can improve plant water intake, aeration, and tilth (i.e., suitability for planting).

The dominant soils in most of Alameda Point, in most of Bay Farm Island, and in the southern portion of Alameda Island south of the lagoons are Xeropsammments fill (hb7k) consisting of alluvial sand, with a slope of 1 to 2 percent and a high to very high capacity to transmit water. These soils, which are moderately alkaline sands extending to a depth of 60 inches, cover an area of about 3,130 acres. About 10 percent of this complex is comprised of strongly alkaline clay at a depth of 36 to 48 inches. About 5 percent of the map unit consists of concave areas that have a water table depth of about 36 inches, which can cause ponded water in rainy winter months. Up to 5 percent of this soil group may include shells with a diameter of less than 1 inch. The rapidly permeable soils support water-tolerant plants with a root zone to 60 inches deep, while water-sensitive plants have a root zone of 40 to 60 inches, restricted by the water table. These soils are mainly used for urban and industrial development and as airfields. Levees prevent erosion of the fill material. Frequent and light applications of irrigation water and pesticides are needed to establish vegetative cover in this soil complex.

The south-central portion of Bay Farm Island, covering about 240 acres, is underlain by Baywood variant (hb5x) sand typically extending to 60 inches in depth, with 0 to 2 percent slope, and somewhat poorly drained, with rapid permeability. The upper surface layer, extending to a depth of 14 inches, is typically dark grayish brown, mildly alkaline sand. This is underlain by about 7 inches of mottled, very dark grayish brown, mildly alkaline sand, followed by mottled brown, neutral sand to a depth of 32 inches. Below that is yellowish brown, neutral sand extending to a depth of 60 inches or more. The root zone is 40 to 50 inches deep for water-sensitive plants and 60 inches for water-tolerant plants. Landscape plants should be watered lightly and frequently. The high water table presents drainage and wetness problems for buildings, which can be overcome through proper building design and installation of drainage systems.

Seismic Hazards

Fault Rupture

Alameda is located in the seismically active San Francisco Bay Region, where all locations are potentially subject to strong seismic shaking during an earthquake event on one of the regional faults that cross the region. Although there are no active faults in Alameda, as shown of Figure GS-3, there are a number of historic and Quaternary-age earthquake faults located to the west and east of the City. The State Mining and Geology Board defines an *active fault* as a fault that has experienced surface displacement during the Holocene geologic era, i.e, in the past 11,700 years. A *potentially active fault* is one that showed evidence of surface displacement during Quaternary time (the last 1.6 million years). The nearest active fault to Alameda is the Hayward Fault, located about 3 miles to the east. The San Andreas Fault, located approximately 12 miles to the west, was the origin of the Great 1906 San Francisco Earthquake. Other principal faults capable of producing significant earthquakes in the Bay Area include the Concord–Green Valley, Marsh Creek–Greenville,

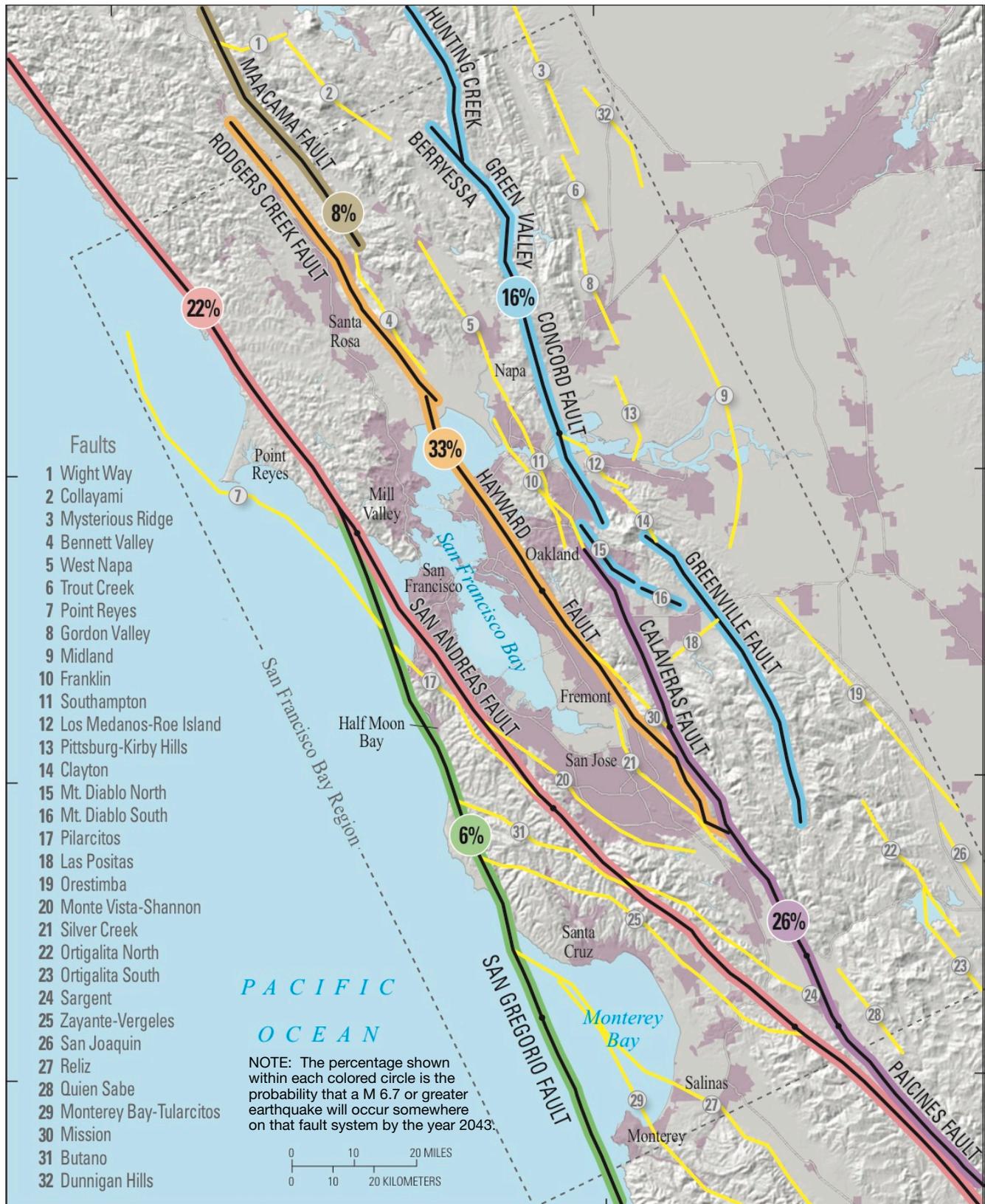


Figure GS-3

Regional Earthquake Faults

Source: U.S. Geological Survey, 2020

San Gregorio, and Rodgers Creek faults. There are no Alquist-Priolo fault zones in the City of Alameda.³

Major earthquakes in the region have occurred on the Hayward, Calaveras, and San Andreas faults during the past 200 years, and numerous minor earthquakes occur along these faults every year. At least five known earthquakes of Richter magnitude (RM) 6.5, four of them greater than RM 7.0, have occurred within the San Francisco Bay Area within the last 150 years. This includes the Great 1908 San Francisco Earthquake (moment magnitude 7.8) and the 1989 Loma Prieta earthquake (RM 6.9).

According to a 2014 analysis by the Working Group on California Earthquake Probabilities (WGCEP), an expert panel co-chaired by U.S. Geological Society seismologists, there is a 72 percent probability that an earthquake of magnitude 6.7 or greater will occur in the San Francisco Bay Area in the next 30 years and a 20 percent probability that an RM 7.5 earthquake will occur (starting from 2014).⁴ The WGCEP estimates there is a 14.3-percent chance of an RM 6.7 quake occurring on the Hayward fault in the next 30 years. It is therefore likely that a major earthquake will be experienced in the region during the planning horizon of the General Plan that could produce strong seismic ground shaking in Alameda.

Seismic Shaking

A major earthquake on any of the active faults in the region could result in very strong to violent ground shaking. The intensity of earthquake ground motion would depend upon the characteristics of the generating fault, distance of the site to the earthquake epicenter and rupture zone, magnitude and duration of the earthquake, and site-specific geologic conditions.

The National Earthquake Hazards Reduction Program (NEHRP) recognizes five categories (A–E) of soil types, or site classes, and assigns amplification factors to each. Site class is a simplified method for characterizing the ground-motion amplifying effects of soft soils during an earthquake by evaluating the relation of average shear-wave velocity in the upper 100 feet of the soil–rock column to the amplification of shaking at ground surface. Shear waves are the earthquake waves that create the strongest horizontal shaking and are the most damaging to buildings and structures. Site class provides some measure of the potential for strong shaking in a particular area during an earthquake. Type E soils in general have the greatest potential for amplification, and Type A soils have the least. Sites underlain by soft clayey soils tend to shake more violently than those underlain by rock. As shown on Figure GS-4, most of Alameda is underlain by NEHRP Type D soils, while most of Alameda Point, the Northern Shoreline, and the northern portion of Bay Farm Island are even more susceptible to seismic shaking, with Type E soils.

³ California Geological Survey, Earthquake Zones of Required Investigation, Oakland West Quadrangle, Oakland East Quadrangle, and San Leandro Quadrangle [maps], January 1, 1982.

⁴ Edward H. Field and Members of the 2014 Working Group on California Earthquake Probabilities, U.S. Geological Survey, California Geological Survey, *UCERF3: A New Earthquake Forecast for California's Complex Fault System*, USGS Open File Report 2015-3009, 2015.

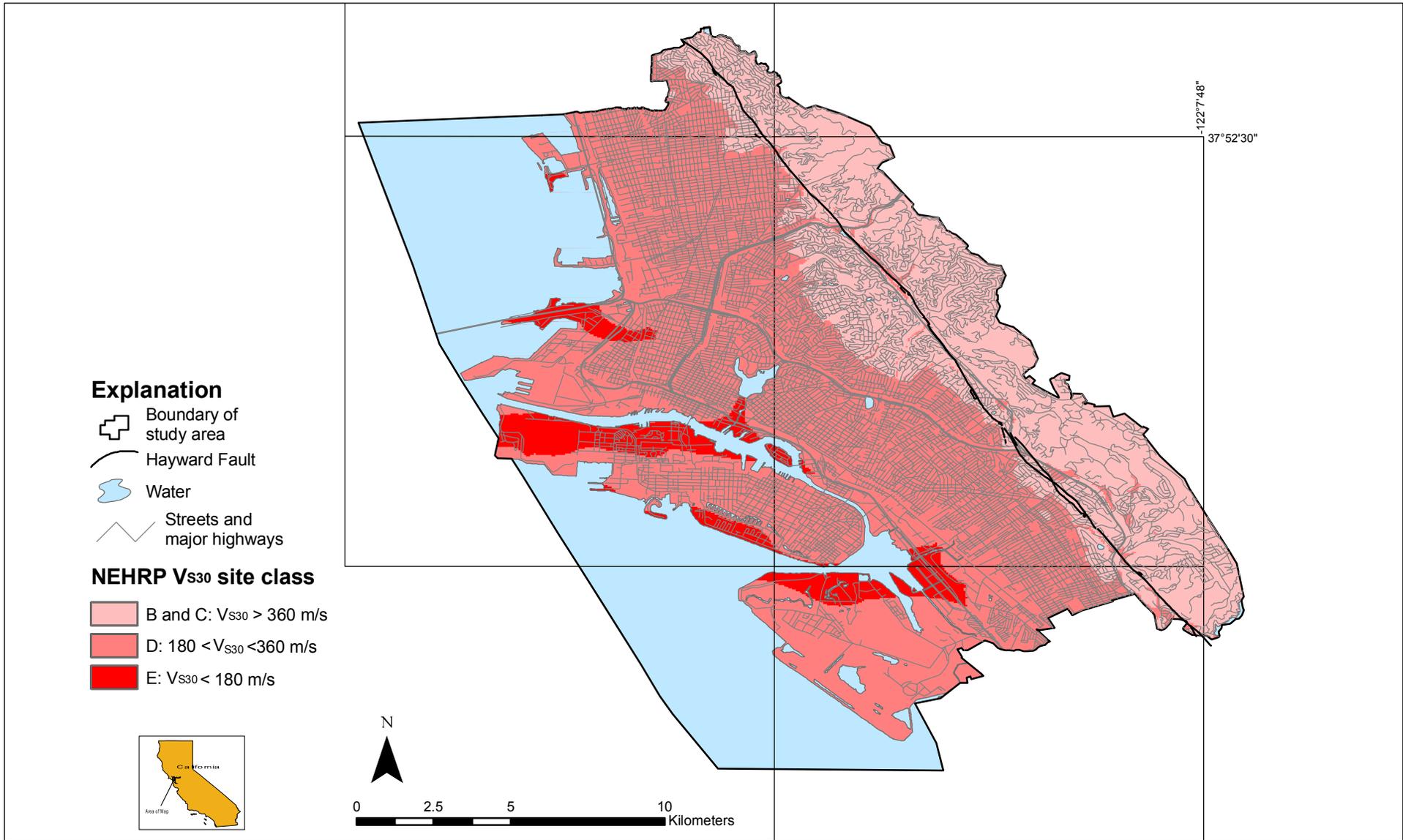


Figure GS-4

Seismic Shaking Amplification Potential in Alameda and Neighboring Cities

Source: U.S. Geological Survey

Liquefaction

Liquefaction-induced ground failure historically has been a major cause of earthquake damage in northern California. During the 1989 Loma Prieta and 1906 San Francisco earthquakes, significant damage to roads, utility pipelines, buildings, and other structures in the San Francisco Bay Area was caused by liquefaction-induced ground displacement.

Liquefaction occurs when clean, loose, saturated, uniformly graded, fine-grained soils within 40 feet of the ground surface are exposed to strong seismic ground shaking. The soils temporarily lose strength and cohesion due to buildup of excess pore water pressure during earthquake-induced cyclic loading, resulting in a loss of ground stability that can cause building foundations to fail. Soil liquefaction may also damage roads, pavements, pipelines, and underground cables. Soils susceptible to liquefaction include saturated, loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. These geological and groundwater conditions are widespread in the San Francisco Bay Area, most notably in alluviated valley floodplains and around the margins of the Bay. The prevalence of active earthquake faults in the region exacerbate this seismic hazard.

The maps of seismic hazards prepared by the California Geological Survey (CGS) under the Seismic Hazards Mapping Program that include the City of Alameda show the entire city as being within a Liquefaction Zone, a seismic hazard zone where historical liquefaction has occurred, or where local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code (PRC) Section 2693(c) would be required. (PRC Section 2693(c) defines this as “measures that are consistent with established practice and that will reduce seismic risk to acceptable levels.”) Liquefaction potential in most of the central and eastern portions of Alameda Island is rated by the U.S. Geological Survey (USGS) as Moderate, while the rest of the City is designated with Very High Susceptibility, as shown on Figure GS-5.

Landslide

Landslides triggered by earthquakes historically have been a significant cause of earthquake damage. In California, large earthquakes such as the 1971 San Fernando, 1989 Loma Prieta, and 1994 Northridge earthquakes triggered landslides that were responsible for destroying or damaging numerous structures, blocking major transportation corridors, and damaging life-line infrastructure. Areas that are most susceptible to earthquake-induced landslides are steep slopes in poorly cemented or highly fractured rocks, areas underlain by loose, weak soils, and areas on or adjacent to existing landslide deposits. Although these geologic and terrain conditions exist in many parts of California, as an essentially level city, much of which is constructed on artificial fill, there is no potential for landslide in Alameda.

Expansive Soils

Expansive soils swell with increases in moisture content and shrink with decreases in moisture content. Expansive soils having a high shrink-swell potential generally occur where soils are very

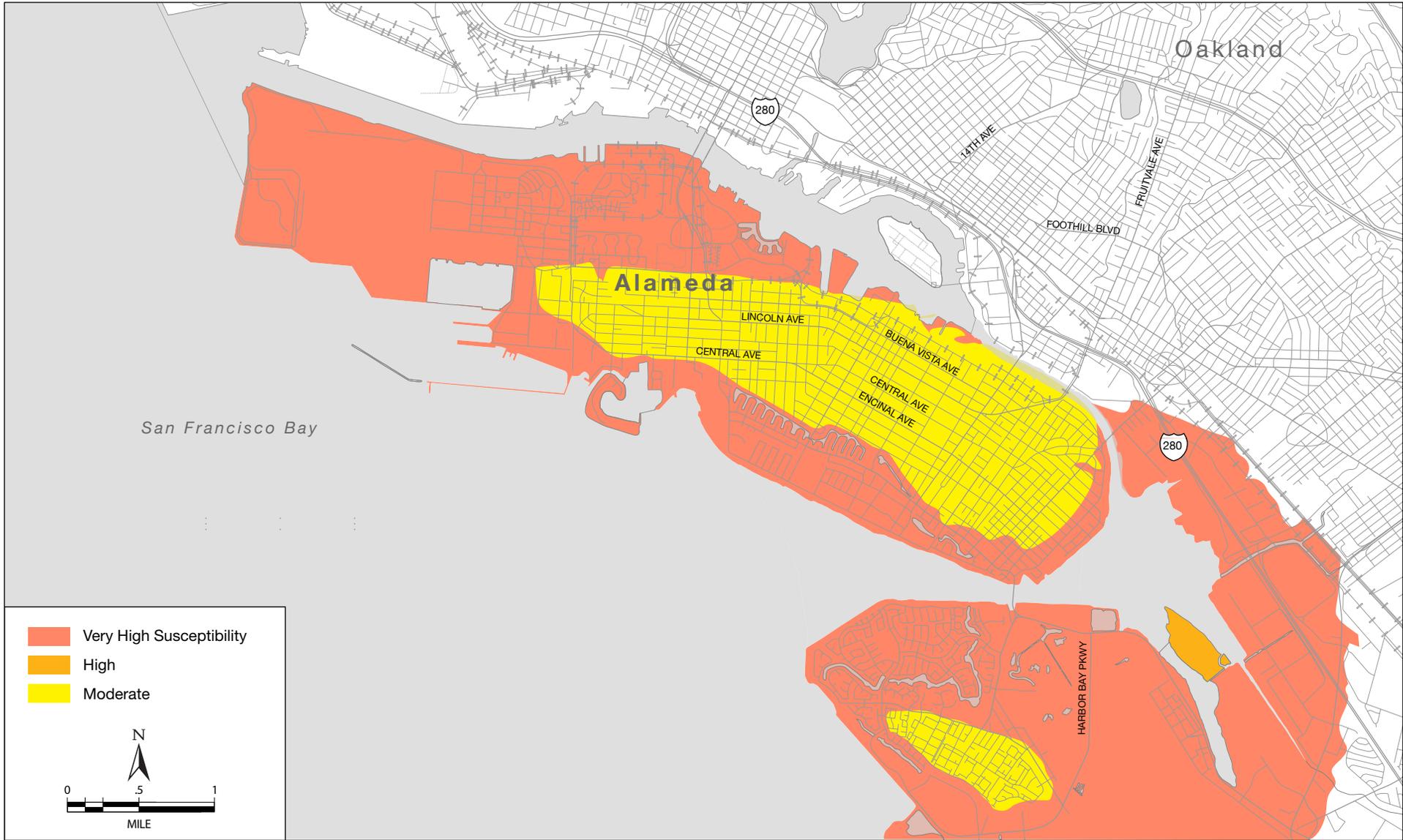


Figure GS-5

Liquefaction Potential in Alameda

Source: U.S. Geological Survey, 2000

fine-grained and have a high clay content. Clay minerals that are expansive include smectite, bentonite, montmorillonite, beidellite, vermiculite, attapulgite, nontronite, and chlorite.

Expansive soils form weak support for buildings, and can amplify the effects of seismic shaking during an earthquake, posing a threat to structural stability of buildings. Cracked foundations, floors, basement walls, and pavements are typical types of damage that can result from development on land with expansive soils. Hazards from expansive soils can generally be eliminated through placement of non-expansive fill and proper structural design.

Expansive soils typically occur within the upper 5 feet of the subsurface. As they are variable and site-specific, potential for expansive soils in Alameda would be determined on a project-by-project basis by site-specific geotechnical investigations.

Mineral Resources

The entire City of Alameda is classified as Mineral Resource Zone (MRZ) category MRZ-1 by the California Department of Conservation's Division of Mines and Geology (DMG).⁵ The MRZ-1 designation is assigned to areas where adequate information is available to make a determination that no significant mineral deposits are present, or where it is judged by DMG that there is little likelihood that they are present. It can therefore be assumed that mineral resources that would be of value to the region and the residents of the State are absent from the City. In addition, Alameda is a developed urbanized area, where extraction of minerals from the site would be impractical and highly disruptive to surrounding established land uses. This is reinforced by a statement in the DMG report published with the MRZ maps for the Bay Area that mineral lands located within areas that have already been urbanized are not considered viable for extraction, and are deemed incompatible.⁶

Paleontological Resources

With revisions to the *CEQA Guidelines* adopted on December 28, 2018, paleontological resources were added to the list of topics to be addressed in the evaluation of geology and soils impacts. Paleontological resources are the fossilized remains of plants or vertebrate or invertebrate organisms from prehistoric environments found in geologic strata. They are valued for the information they yield about the history of the earth and its past ecological settings. In order for an organism to be preserved, it must be buried and mineralized, which requires a specific set of favorable geologic conditions and a significant amount of time. They are most typically embedded in sedimentary rock foundations, and may be encountered in surface rock outcroppings or in the subsurface during site grading.

⁵ California Department of Conservation, Division of Mines and Geology, Generalized Mineral Land Classification Map of the South San Francisco Bay Production-Consumption Region, Newark Quadrangle [map] (Plate 1 of 29), 1996.

⁶ California Department of Conservation, Division of Mines and Geology, *Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region*, Concepts Used in Identifying Available Aggregate Resources (page 7), 1996.

Conditions are favorable for the presence of fossilized plants, animals and microorganisms in the East Bay hills, which are made up of sedimentary bedrock that is known to contain a wide range of fossils, including radiolarians, mollusks, diatoms, foraminifers, and non-marine vertebrates. In addition, Pleistocene-age (1.8 million to 10,000 years ago) alluvial fan and fluvial deposits have been known to yield fresh water mollusks and extinct late Pleistocene vertebrate fossils. Thus, the East Bay as a whole is rich in potentially fossil-yielding rock formations.

Most of the City of Alameda is underlain by artificial fill overlying estuarine mud (also referred to as Young Bay Mud), which is a silty clay that is rich in organic materials and is known to be soft and compressible. These soils have a very low potential for paleontological resources being present in the subsurface. The eastern and central portions of Alameda Island and part of the southern portion of Bay Farm Island are underlain by dune sands, commonly referred to as Merritt Sand, which is a loose, well-sorted, fine- to medium-grained sand. The Merritt Sand is likely to be underlain by Young Bay Mud and Holocene bay tidal flat deposits at variable depths.

The geologic units underlying Alameda represent either historic (in the last 200 years) or Holocene-age (last 11,000 years) geologic units. Such recent deposits are unlikely to preserve the remains of organisms due to the lack of time and burial needed for the organisms to be fossilized. In addition, artificial fills are manmade, and have been mixed and reworked from native geologic materials, and therefore are not fossil-yielding.

12.3 Standards of Significance

Appendix G of the *CEQA Guidelines* identifies a number of significant environmental impacts related to geology and soils. A project may have a significant geology and soils impact if it would include any of the following:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
 - ii) Strong seismic ground shaking;
 - iii) Seismic-related ground failure, including liquefaction; or
 - iv) Landslides.
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;

- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

These standards of significance are adopted for use in this EIR.

14.4 Impacts and Mitigation Measures

The assessment of geology and soils impacts identified in this chapter is based on the standards of significance listed in Section 14.3. This section identifies seismic safety and structural stability impacts that could result from the construction and/or operation of new land use developments that would be allowed under the proposed General Plan.

The proposed Conservation and Climate Action Element of the *Alameda General Plan 2040* identifies the policies and strategies necessary to conserve and protect Alameda’s natural resources, reduce the community’s greenhouse gas emissions and energy use, and to prepare for and address the impacts of climate change. Specific to issues relevant to this chapter, one of the goals of the Conservation and Climate Action Element is to prepare the community to adapt to rising sea and groundwater levels, and to increasingly severe storms and flooding.

Specific policies of the Health and Safety Element that would reduce potential impacts from earthquakes and other geologic hazards include the following:

- Objective 2** **Minimize risks of loss of life, personal injury, property damage and environmental degradation posed by earthquakes and other geologic hazards.**
- Policy HS-9** **Building Standards.** Maintain up-to-date local building codes that incorporate new standards for construction pertaining to development on areas of fill or underlain by bay mud or Merritt sand.
- Policy HS-10** **Transportation Facilities.** Work with Caltrans, the Metropolitan Transportation Commission, the Alameda County Transportation Commission and other regional, state and federal partners to fund earthquake strengthening protection for critical public regional transportation facilities, such as the Posey and Webster Tubes, the Miller Sweeney Bridge and the High Street Bridge.
- Policy HS-11** **Life-line Standard Estuary Crossing.** Work with Caltrans, Alameda County, and other regional agencies to retrofit and improve at least one estuary crossing to meet a life-line standard to ensure access to the larger region for emergency access, equipment supplies, and disaster response and recovery in the event of a major seismic event.
- Policy HS-12** **City Buildings and Infrastructure.** Continue to strengthen and rehabilitate City Buildings and other city infrastructure, including but not limited to waste water systems and pump stations, storm water systems and pump stations and electric

systems and facilities to ensure that the City can respond effectively to a seismic event.

Policy HS-13 Private Buildings. Require owners of vulnerable structures, to the extent feasible, to retrofit existing structures to withstand earthquake ground shaking, and require retrofitting when such structures are substantially rehabilitated or remodeled.

Actions:

- **Soft Story Program.** Continue to implement the City's Soft Story Program including mandatory requirements for substantially improving the seismic performance of multi-family wood frame residential buildings with "soft stories."
- **Wood Framed Building Program.** Continue to implement the City's Wood Framed Building Program including voluntary requirements for substantially improving the seismic performance of one and two story wood frame residential buildings with vulnerable "cripple walls".
- **Incentives.** Develop incentives and assistance to help property owners make their homes and businesses more earthquake-safe. Pursue a variety of funding sources, such as grants, low-interest loans, and tax credits, to assist residents and businesses with seismic upgrades.
- **Shoreline Property Management.** Require owners of shoreline properties, to the extent feasible, to inspect, maintain, and repair the perimeter slopes to withstand earthquake ground shaking, consolidation of underlying bay mud, and wave erosion.
- **Rehabilitation Incentives.** Establish incentives and exemptions from City zoning code requirements, such as off-street parking and/or on-site common open space, to facilitate private rehabilitation and strengthening of soft story multi-family buildings.

Policy HS-24 Groundwater Management. Require and enforce stringent groundwater management programs to prevent subsidence.

Policy HS-29 Building Codes for New Development. Require new development to comply with the City's current fire, seismic, and sprinkler codes.

Policy HS-31 Underground Utilities. Require new development to underground utilities to minimize disruption by fire or other natural disasters.

IMPACTS

Impact 14-1

Construction and operation of new buildings and facilities allowed under the *Alameda General Plan 2040* would not directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death, from seismic ground failure, including liquefaction and fault rupture. (LTS)

As discussed in Section 14.2, there is a 72 percent probability that an earthquake of magnitude 6.7 or greater will occur in the San Francisco Bay Area in the next 30 years. Depending on the location of the epicenter, the intensity, and the duration, a major earthquake in the region could cause strong seismic shaking in Alameda, which could result in broken subsurface piping, broken pavements, and collapsed or damaged building structures. There are no active earthquake faults in Alameda, so there is no surface fault rupture hazard in the City.

In areas with potentially liquefiable soils, seismic shaking could induce liquefaction of site soils, creating unstable building foundations that could lead to structural damage and even collapse of buildings. As shown on Figure GS-5, much of the City is highly susceptible to liquefaction in the event of an earthquake. Where expansive soils are present, they could amplify the effects of seismic shaking during an earthquake, posing an additional threat to the structural stability of buildings. Expansive soils can damage building foundations and cause uneven floors, cracked slabs, and a variety of functional and cosmetic damage to buildings.

Foundation and structural designs that can withstand the level of ground shaking that could occur in Alameda are in common use today. As required by the California Building Code, project facilities would be designed, at minimum, to withstand a ground acceleration that has a 10-percent probability of being exceeded in 50 years. The Alameda Building Code (Alameda Municipal Code, Chapter XIII, Article I) adopts the CBC by reference, and would be enforced by the Alameda Building Department. With foundation and structural design in accordance with the current CBC standards and based on site-specific geological conditions, seismic shaking should not result in significant structural damage to new development that would be constructed in accordance with the proposed General Plan. Site-specific geotechnical/geologic hazard studies would be required that would identify appropriate site preparation and foundation design specifications based on the ground conditions at the future development sites, including the potential for liquefaction of soils. These recommendations would become part of the project specifications.

Compliance with the provisions of the California Building Code/Alameda Building Code would minimize the risk for seismic hazards to adversely affect new development that would be facilitated by the *Alameda General Plan 2040*. Therefore, construction allowed under the proposed General Plan would have a ***less-than-significant impact*** on from seismic shaking and/or seismic ground failure.

Mitigation Measure 14-1

None required.

Impact 14-2**New land uses allowed under the *Alameda General Plan 2040* would not result in substantial soil erosion or the loss of topsoil. (LTS)**

Any construction project that involves disturbance or exposure of the ground surface creates a potential for soil erosion from both wind and stormwater or other sources of flowing water. The higher the wind speed and the greater the intensity and duration of a rainstorm, the higher the erosion potential. Wide open spaces are more susceptible to wind erosion than sites that are more enclosed by surrounding buildings and/or trees and other vegetation. Lighter soils such as very fine sand, silt, clay and organic matter are easily removed by the splash of raindrops and runoff water, while greater raindrop energy or runoff amounts are required to move larger sand and gravel particles. While the erosion caused by less-intense rainfall is not as substantial as that produced during major rain storms, the amount of soil loss can be significant when there is a long storm duration. Although the risk of accelerated erosion and sedimentation from wind and water depends on a number of factors, including proximity to receiving water bodies, climate, topography, and soil type, construction disturbance can result in discharge of sediment that is up to 100 times the natural background level of erosion on an undisturbed site.⁷

Site grading activities for new development allowed under the proposed General Plan could require excavation, scraping, grading, retaining wall construction, and stockpiling of rock and soil. As a result of these activities, localized erosion rates potentially could be accelerated because of surface disturbance and vegetation removal. Construction activities conducted when the ground is wet also create potential for increased runoff, which in turn, could lead to increased erosion.

Generally, new development that entails “land disturbance” of 1 acre or more requires the project sponsor to obtain coverage under Construction General Permit (CGP) Order 2009-0009-DWQ (amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ), administered by the State Water Resources Control Board (SWRCB). Any proposed project on a site of 1 acre or more would be required to obtain coverage under the CGP. Order 2009-0009-DWQ requires project sponsors to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) that identifies construction best management practices (BMPs) at the project site, and requires compliance with numeric action levels (NALs) in order to achieve minimum federal water quality standards. The CGP requires control of non-stormwater discharges as well as stormwater discharges. Measures to control non-stormwater discharges such as spills, leakage, and dumping must be addressed through structural as well as non-structural BMPs. Additional information on the potential for project construction to adversely affect water quality is provided in Chapter 15, Hydrology and Water Quality.

Construction stormwater BMPs are intended to minimize the migration of sediments off-site. They can include covering soil stockpiles, sweeping soil from streets or other paved areas, performing site-disturbing activities during dry periods, and planting vegetation or landscaping quickly after

⁷ Napa Countywide Stormwater Pollution Prevention Program, *Erosion and Sediment Control Plan Guidance for Applicants and Staff Review*, December 2014.

disturbance to stabilize soils. Other typical stormwater BMPs include erosion-reduction controls such as hay bales, water bars, covers, sediment fences, sensitive area access restrictions (for example, flagging), vehicle mats in wet areas, and retention/settlement ponds.

Uncontrolled runoff at construction sites from open excavations or stockpiles of soil, sand, asphalt, ballast stone, and aggregate could lead to increased turbidity, sedimentation, and water quality degradation. Because stormwater runoff from the City of Alameda is discharged directly into San Francisco Bay, increased erosion could adversely affect water quality in San Francisco Bay. However, the required compliance with the CGP issued by the SWRCB would ensure that the erosion potential on sites of 1 acre or more would be minimized. In addition, in accordance with Alameda Municipal Code Section 30-84.12, projects of any size involving the subdivision of land into two or more parcels must control construction grading and erosion in such a manner as to prevent sedimentation or other damage to off-site property. Drainage, sedimentation, and erosion control measures must be shown on the subdivider's improvement plans. Finally, the mandatory CALGreen Code measures for both residential (Section 4.106) and non-residential (Section 5.106) development involving disturbance of less than 1 acre of land require the project sponsor to implement stormwater management controls to prevent erosion, retain soil runoff on site, and prevent flooding of adjacent properties. Appropriate controls can include retention basins, construction BMPs, or compliance with a lawfully enacted stormwater management ordinance. Because new development projects of all sizes would be required to implement effective erosion and sedimentation controls during construction, implementation of the proposed General Plan would have a *less-than-significant impact* from soil erosion.

Mitigation Measure 14-2

None required.

Impact 14-3

New development allowed under the *Alameda General Plan 2040* could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. (LTS)

Due to its flat topography, there is virtually no potential for landslide in the City of Alameda. However, based on maps of seismic hazards prepared by the California Geological Survey under the Seismic Hazards Mapping Program, the entire City of Alameda is located within a Liquefaction Zone. Mapping by the U.S. Geological Survey (USGS) (see Figure GS-5) indicates that the central and eastern portions of Alameda Island and a southern portion of Bay Farm Island have a moderate potential for liquefaction, while the rest of the City has a rating of Very High Susceptibility for liquefaction.

Liquefaction only occurs in areas with saturated soils. It happens in response to strong vibrations or movement in the ground that allow upward movement of water, resulting in water-logged soils that

lose rigidity. New development constructed on liquefiable soils could experience structural instability and even structural failure during a strong earthquake. The liquefied ground cannot sustain the stresses of its load from the foundations, which can sink into the liquefied soils and cause the building to lean and eventually collapse.

Lateral spreading is the lateral displacement of ground due to the buildup of water pore pressure in a shallow soil deposit in response to seismic shaking. A rigid top layer of soil can slide horizontally over a liquified lower soil layer. Liquefaction-induced lateral spreading can induce significant deformations and damage in buildings and underground utilities. Although lateral spreading can occur on entirely flat ground, it is more likely to occur on sloping ground or where vertical open faces are exposed, such as along a stream bank. Because lateral spreading is facilitated by and typically associated with liquefaction, it is presumed that most sites in Alameda have some potential for lateral spreading.

Subsidence is a downward vertical sinking of the ground because of underground material movement. It is most often caused by the extraction of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining activities, but it can be induced by earthquakes. Subsidence can happen over very large areas like whole states, or very small areas like just a portion of a small development site.

Pursuant to Public Resources Code Section 2697(a), a geotechnical report defining and delineating any seismic hazard is required before a city or county can approve a project located in a seismic hazard zone. Because the entire city is located within a seismic hazard zone as designated by the CGS, all new development projects facilitated by the proposed General Plan would be required to conduct a geotechnical investigation of the proposed project site. Chapter 18 of the 2019 California Building Code lays out requirements for geotechnical investigations, which include soil borings to classify and characterize site soils (including evaluation of expansiveness), identification of groundwater elevation, and foundation design recommendations based on the determined seismic design category applicable to the site. The geotechnical investigation must evaluate potential geologic and seismic hazards, including slope instability, liquefaction, total and differential settlement, and surface displacement due to faulting or seismically-induced lateral spreading or lateral flow. The evaluation of seismic hazards must be done in accordance with the California Geological Survey's *Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California* (2008). All applications for a building permit submitted on or after January 1, 2020 are subject to compliance with the 2019 CBC.

While new development allowed under the proposed General Plan would could be located on unstable soils or soils that could become unstable in response to seismic shaking and could result in structural failure, the mandatory compliance with the latest version of the California Building Code, including regulations pertaining to seismic safety, would ensure that projects are designed to withstand anticipated seismic shaking and any potentially unstable site soils are re-engineered to provide adequate structural support. Therefore, this would be a ***less-than-significant impact***.

Mitigation Measure 14-3

None required.

Impact 14-4

New land uses allowed under the *Alameda General Plan 2040* could be located on expansive soil, creating substantial direct or indirect risks to life or property. (LTS)

Expansive soils that swell with increases in moisture content and shrink with decreases in moisture content form weak support for buildings, and can result in structural failure during an earthquake. While structural damage due to expansive soils typically occurs gradually over an extended period of time, adverse effects can be accelerated by seismic shaking during an earthquake. Cracked foundations, floors, basement walls, and pavements are typical types of damage that can result from development on land with expansive soils.

Expansive soils having a high shrink-swell potential generally occur where soils are very fine-grained and have a high clay content. Clay minerals that are expansive include smectite, bentonite, montmorillonite, beidellite, vermiculite, attapulgite, nontronite, and chlorite. Expansive soils typically occur within the upper 5 feet of the subsurface.

Impacts from expansive soils are variable and site-specific, so the potential for expansive soils in Alameda would be determined on a project-by-project basis by site-specific geotechnical investigations. As discussed in Impact 14-3, project sponsors of new development allowed under the proposed General Plan would be required to prepare a site-specific geotechnical investigation that would evaluate the soils of the proposed project site and determine the potential for expansive soils. If expansive soils are present, the geotechnical investigation would identify appropriate site remediation and project design features to ensure adequate structural stability of the proposed development, and their implementation would be required. Hazards from expansive soils can generally be eliminated through placement of non-expansive fill and proper structural design.

Compliance with the provisions of the California Building Code/Alameda Building Code would ensure that potential impacts from the construction of new development on sites with expansive soils would be ***less than significant***.

Mitigation Measure 14-4

None required.

Impact 14-5

New development allowed under the *Alameda General Plan 2040* would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. (NI)

The City of Alameda is developed with a network of sewers that provide wastewater collection for the entire city. The majority of the wastewater collection system is owned by the City, but there are approximately 19,000 private sewer laterals, primarily on Bay Farm Island, that are the responsibility of local homeowners associations. There are also over 10 miles of sewer pipelines owned by the East Bay Municipal Utility District (EBMUD), which provides treatment of all wastewater generated in Alameda. All new development allowed by the proposed General Plan would be required to connect to this wastewater collection system. With a high water table, installation of septic tanks would not be feasible in Alameda. However, with the Citywide availability of existing wastewater collection infrastructure and adequate treatment capacity, as discussed in Chapter 7, Utilities and Service Systems, there would be no need for septic tanks or alternative wastewater disposal systems. Therefore, implementation of the proposed General Plan would have **no impact** from soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measure 14-5

None required.

Impact 14-6

Construction of new development allowed under the *Alameda General Plan 2040* could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (S)

Future development and redevelopment allowed under the proposed General Plan involving grading, excavation, or other subsurface disturbance could encounter buried paleontological resources, potentially damaging or destroying the resources during construction activities. The potential is considered low because the artificial fill overlying estuarine mud that underlies most of the City has a very low potential for the presence of paleontological resources, as does the Merritt Sand that underlies the rest of the City.

Most of the City of Alameda is underlain by artificial fill overlying estuarine mud (also referred to as Young Bay Mud), which is a silty clay that is rich in organic materials and is known to be soft and compressible. These soils have a very low potential for paleontological resources being present in the subsurface. The eastern and central portions of Alameda Island and part of the southern portion of Bay Farm Island are underlain by dune sands, commonly referred to as Merritt Sand, which is a loose, well-sorted, fine- to medium-grained sand. The Merritt Sand is underlain by Young Bay Mud and Holocene bay tidal flat deposits at variable depths.

The geologic units underlying Alameda represent either historic (in the last 200 years) or Holocene-age (last 11,000 years) geologic units. Such recent deposits are unlikely to preserve the remains of organisms due to the lack of time and burial needed for the organisms to be fossilized. In addition, artificial fills are manmade, and have been mixed and reworked from native geologic materials, and therefore are not fossil-yielding.

Despite the low potential, there remains some possibility for paleontological resources to be present in the subsurface of future development/redevelopment sites that could be damaged or destroyed during ground-disturbing construction work, which would be a **potentially significant adverse impact**. Implementation of the following mitigation measure would reduce the impact to a less-than-significant level.

Mitigation Measure 14-6

Amend the General Plan to include the following new policy to be added to the Conservation and Climate Action Element:

CC-__ : Paleontological Resources. *If any paleontological resources—such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions—are encountered during site grading or other construction activities, all ground disturbance within 100 feet of the find shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the scientific value of the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). Any further mitigation measures recommended by the paleontologist shall be implemented and construction shall not resume in the vicinity of the find until the paleontologist has authorized the resumption of work. Significant paleontological resources shall be salvaged and deposited in an accredited and permanent scientific institution, such as the University of California Museum of Paleontology (UCMP).*

CUMULATIVE IMPACTS

Similar to all development in the San Francisco Bay Area, the City of Alameda is located in a region of high seismic activity. New development allowed under the proposed General Plan could, in conjunction with existing development and future development in the region, result in cumulative impacts from seismic hazards. However, all new cumulative development in the region would be subject to the seismic design requirements set forth in the California Building Code. Impacts from seismic hazards and unstable soils are largely site-specific, and need to be addressed on a project-by-project, site-specific basis. Compliance with the regulations in the CBC would minimize the potential for impacts from ground instability and seismic ground failure and ensure that the impacts from new development consistent with the *Alameda General Plan 2040* would not be cumulatively considerable, and cumulative impacts would be less than significant.

Implementation of the proposed General Plan could also result in adverse impacts to paleontological resources that, in combination with impacts to paleontological resources from development in other jurisdictions in the region could be cumulatively considerable. However, with implementation of Mitigation Measure 14-6, the future projects facilitated by the General Plan

would not be cumulatively considerable. Implementation of the proposed General Plan would therefore have a less-than-significant cumulative impact on paleontological resources.

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