



# City of Sunnyvale

## Memo

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TO: City Council  
FROM: Christina Raby, Environmental Engineering Coordinator  
RE: Game Plan 2028 – Public Comments

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Staff received comments on the Initial Study / Negative Declaration (ISND). The response to comments, corrected IS/ND, letter from the Department of Fish and Wildlife and final GHG Thresholds and Guidance Report have been attached for reference.

### **ATTACHMENTS**

1. Playbook Response to Comments
2. Updated ISND
3. Letter from the Department of Fish and Wildlife
4. GHG Thresholds and Guidance Report

## Comments and Responses on the Draft Initial Study- Negative Declaration

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This section includes comments received during public circulation of the Draft Initial Study- Negative Declaration (IS-ND) prepared for the Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds (proposed plan or plan). The California Environmental Quality Act (CEQA) Guidelines Section 15074(b) states that prior to approving a project, the lead agency must consider the proposed IS-ND together with any comments received during the public review process.

The Draft IS-ND was circulated for a 30-day public review period that began on April 9, 2024 and ended on May 8, 2024. The City received one comment letter on the Draft IS-ND. Each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter, Individual 1).

Where a comment resulted in a change to the Draft IS-ND text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeout font (~~strikeout font~~) where text was removed and by underlined font (underlined font) where text was added. These changes in text are noted in the Final IS-ND. The comment letter and responses follow.



State of California – Natural Resources Agency

DEPARTMENT OF FISH AND WILDLIFE

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GAVIN NEWSOM, Governor

CHARLTON H. BONHAM, Director



Letter 1

May 6, 2024

Madeline Khair, Environmental Programs Manager

City of Sunnyvale

456 W Olive Avenue

Sunnyvale, CA 94086

[MKhair@sunnyvale.ca.gov](mailto:MKhair@sunnyvale.ca.gov)

Subject: Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA  
GHG Emissions Thresholds, Initial Study/Negative Declaration,  
SCH No. 2024040387, City of Sunnyvale, Santa Clara County

Dear Ms. Khair:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an Initial Study/Negative Declaration (IS/ND) from the City of Sunnyvale (City) for the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.<sup>1</sup> CDFW is submitting comments on the draft IS/ND as a means to inform the City of Sunnyvale as the Lead Agency, of potentially significant impacts to biological resources associated with the Project.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

## CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

1.1

<sup>1</sup> CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority over the Project pursuant to the Fish and Game Code. For example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project may result in "take" as defined by state law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

1.1 cont.

## REGULATORY REQUIREMENTS

### California Endangered Species Act

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, "take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86). CDFW's issuance of an ITP is subject to CEQA and to facilitate permit issuance, any Project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

1.2

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. Pub. Resources Code, §§ 21001, subd. (e) & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065). In addition, pursuant to CEQA, the Lead Agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the Lead Agency makes and supports Findings of Overriding Consideration (FOC) for impacts that remain significant despite the implementation of all feasible mitigation. FOC under CEQA, however, does not eliminate the Project proponent's obligation to comply with the Fish and Game Code.

### Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting rivers, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it

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may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also generally subject to notification requirements. Therefore, any impact to the mainstems, tributaries, or floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification.

### **Migratory Birds and Raptors**

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

### **Fully Protected Species**

Several Fully Protected Species (Fish & G. Code § 3511 and 4700) have the potential to occur within or adjacent to the Project area, including, but not limited to: salt-marsh harvest mouse (*Reithrodontomys raviventris*), white-tailed kite (*Elanus leucurus*), golden eagle (*Aquila chrysaetos*), California least tern (*Sternula antillarum browni*), and California Ridgway's rail (*Rallus obsoletus obsoletus*).

Project activities described in the IS/ND should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

Take is for necessary scientific research;

- Efforts to recover a fully protected, endangered, or threatened species, live capture, and relocation of a bird species for the protection of livestock; or
- They are a covered species whose conservation and management are provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

Specified types of infrastructure projects may be eligible for an ITP for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15).

1.2 cont.

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CDFW also recommends the IS/ND analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the City include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species. Project proponents should consult with CDFW early in the Project planning process.

1.2 cont.

## PROJECT DESCRIPTION SUMMARY

**Proponent:** City of Sunnyvale

**Objective:** The objective of the Project is to achieve the 2030 GHG emissions target for the City of Sunnyvale. Primary Project activities include; the City has developed 19 strategies related clean electricity, building decarbonization, transportation decarbonization and sustainable land use planning, solid waste and water use reductions, community engagement, and climate adaptation.

1.3

**Location:** Sunnyvale, Santa Clara County (County), Citywide

**Timeframe:** The plan will be implemented over the next 21 years.

## COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

1.4

The IS/ND should define the threshold of significance for each impact and describe the criteria used to determine whether the impacts are significant (CEQA Guidelines, § 15064, subd. (f)). The IS/ND relies on General Plan policies and on requirements that subsequent Projects, if necessary, obtain appropriate permits but does not sufficiently describe how these policies will reduce impacts to less-than-significant.

## ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project (CEQA Guidelines, §§15063 & 15360). CDFW recommends that a full list or table is included in the updated Biological Resources Section of the IS/ND that notes species common name, scientific name, state and federal listing status (as applicable), habitat type preference and determination on presence, for all special-status species with the potential to occur within the Project area.

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CDFW recommends the IS/ND provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The IS/ND should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project area (for sensitive natural communities see: <https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities>), and any stream or wetland set back distances the City or County may require.

CDFW recommends that the California Natural Diversity Database (CNDDDB), as well as previous studies performed in the area, be consulted to assess the potential presence of sensitive species and habitats. A nine U.S. Geologic Survey (USGS) 7.5-minute quadrangle search is recommended to determine what may occur in the region, larger if the Project area extends past one quad (See *Data Use Guidelines* on the Department webpage <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>). Please review the webpage for information on how to access the database to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the Project. CDFW recommends that CNDDDB Field Survey Forms be completed and submitted to CNDDDB to document survey results. Online forms can be obtained and submitted at: <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>.

Please note that CDFW's CNDDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site. Other sources for identification of species and habitats near or adjacent to the Project area should include, but may not be limited to, State and federal resource agency lists, California Wildlife Habitat Relationship System, California Native Plant Society Inventory, agency contacts, environmental documents for other projects in the vicinity, academics, and professional or scientific organizations. Only with sufficient data and information can the City adequately assess which special-status species are likely to occur in the Project vicinity.

According to Biogeographic Information and Observation System (BIOS) records, the Project site contains positive detections of several special-status species and has the potential to support numerous special-status species and their associated habitat. Species with potential to occur on-site include but are not limited to those listed in Attachment 1.

## **I. Project Description and Related Impact Shortcoming**

**COMMENT 1: Subsequent Project Review, (Biological Resources 4.a. p. 42)**

1.5 cont.

1.6

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The IS/ND identifies that “implementation of the following Sunnyvale Playbook Update/ Game Plan 2028 Plays may promote infrastructure development and redevelopment and may result in impacts to species through construction activities.” (4.a. p. 42). It is not clear what level of environmental review future Projects would receive. The IS/ND does not include a checklist for subsequent project review, nor adequate description of how the City’s policies would mitigate any potential impacts of the Project. While the Project has a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning approval at hand.

The CEQA Guidelines section 15168, subdivision (c)(4) states, “Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope.”

1.6 cont.

**Recommended Mitigation Measure 1: Subsequent Project CEQA Evaluation.** The IS/ND should include a procedure or checklist for evaluating subsequent Project impacts on biological resources to determine if the impacts are within the scope of the IS/ND or if an additional environmental document is warranted. Future analysis shall include all special-status species and sensitive habitats including, but not limited to, species considered rare, threatened, or endangered species pursuant to CEQA Guidelines, section 15380. The checklist shall be accompanied by enough relevant information and reasonable inferences to support a “within the scope” of the IS/ND conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis shall be prepared by a professional biologist experienced with the applicable species and habitat to provide the necessary supporting information.

## **II. Environmental Setting and Related Impact Shortcoming**

**Would the Project 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 CDFW or U.S. Fish and Wildlife Service (USFWS)?**

1.7

**COMMENT 2: Nesting Bird Surveys, (Biological Resources 4.a. p. 42)**



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The draft IS/ND states that the Project has the potential to disturb special-status species and nesting habitat for birds and raptors; however, the draft IS/ND does not state that baseline data will be collected if active nests are discovered.

**Recommended Mitigation Measure 2: Nesting Bird Surveys.** If Project-related work is scheduled during the nesting season (typically February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a professional biologist experienced with the applicable species and habitat shall conduct two surveys for active nests of such birds within 14 days prior to the beginning of Project construction, with a final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding the work area are typically the following: i) 250 feet for passerines; ii) 500 feet for small raptors such as accipiters; and iii) 1,000 feet for larger raptors such as buteos. Surveys shall be conducted at the appropriate times of day and during appropriate nesting times.

1.7 cont.

**COMMENT 3: Marsh and Shoreline Birds, (Biological Resources 4.a. p. 42)**

The IS/ND does not state potential impacts to shoreline and marsh birds from the Project. A number of marsh bird species occur along Sunnyvale's shoreline and throughout the Don Edwards San Francisco Bay National Wildlife Refuge. These include but are not limited to black skimmer (*Rynchops niger*), California least tern, California black rail, California Ridgway's rail, and western snowy plover (*Charadrius nivosus nivosus*). The IS/ND includes actions to advance shoreline protection projects and restore and expand salt marshes and natural waterways. Any in-water and shoreline work has the potential to cause the take of state listed marsh and shoreline bird species.

1.8

**Recommended Mitigation Measure 3: Surveys.** CDFW recommends the Project include a measure for marsh bird surveys following the 2017 Site-Specific Protocol for Monitoring Marsh Birds (<https://ecos.fws.gov/ServCat/Reference/Profile/68062>). CDFW recommends inclusion of avoidance and minimization measures in the Biological Resources Section of the IS/ND to reduce impacts below a level of significance.

**COMMENT 4: State Listed Fish Species, (Table 2, item 6.2, page 17)**

The IS/ND does not include potential impacts to state listed fish species known to be present in the Project area, including steelhead (*Oncorhynchus mykiss irideus*) - Central California Coast Distinct Population Segment (DPS) and longfin smelt (*Spirinchus thaleichthys*) along Sunnyvale's shoreline and throughout the Don Edwards San Francisco Bay National Wildlife Refuge. The IS/ND includes actions to advance shoreline protection projects and restore and expand salt marshes and natural

1.9

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waterways. Any in-water work has the potential to cause the take of state listed fish species.

**Recommended Mitigation Measure 4: Construction Activities and Work Windows.**

The IS/ND should include mitigation measures to avoid potential impacts to aquatic species for construction methods such as pile driving and dredging. In-water construction shall only occur during the CDFW approved work window of June 1 through November 30. A vibratory pile driver shall be used to the maximum extent possible. If an impact hammer is to be considered for construction, the City shall consult with CDFW regarding a CESA ITP for potential impacts to state listed species such as longfin smelt and Chinook salmon (*Oncorhynchus tshawytscha*). See also Recommended Mitigation Measure 9.

1.9 cont.

**COMMENT 5: Crotch's bumble bee, (Biological Resources 4.a. p. 42)**

Crotch's bumble bee (*Bombus crotchii*) are candidate species under CESA (CEQA Guidelines, §15380, subds. (c)(1)). The IS/ND does not address whether the proposed Project could result in impacts to Crotch's bumble bee. Crotch's bumble bee occurrences have been documented within the vicinity of the Project area and historic observations occur elsewhere in the County (CDFW 2023). The Project location is within the Crotch's bumble bee range (<https://wildlife.ca.gov/Conservation/CESA>) and grassland within and adjacent to the Project area may contain potential habitat for Crotch's bumble bees.

The Project includes strategies such as solar arrays and solar battery storage projects that may occur within ruderal grass and herbaceous vegetation and that may be potential Crotch's bumble bee nesting and foraging habitat. Potential impacts include direct mortality through crushing or filling of active bee colonies and hibernating bee cavities, reduced reproductive success, loss of suitable breeding and foraging habitats, loss of native vegetation that may support essential foraging habitat.

1.10

**Recommended Mitigation Measure 5: Habitat Assessment.** A habitat assessment shall be conducted by a qualified entomologist knowledgeable with the life history and ecological requirements of Crotch's bumble bee. The habitat assessment shall include all suitable nesting, overwintering, and foraging habitats within the Project area and surrounding areas. Potential nest habitat (February through October) could include that of other *Bombus* species such as bare ground, thatched grasses, abandoned rodent burrows or bird nests, brush piles, rock piles, and fallen logs. Overwintering habitat (November through January) could include that of other *Bombus* species such as soft and disturbed soil or under leaf litter or other debris. The habitat assessment shall be conducted during peak bloom period for floral resources on which Crotch's bumble bee feed. Further guidance on habitat surveys can be found within *Survey Considerations*

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for California Endangered Species Act (CESA) Candidate Bumble Bee Species (<https://wildlife.ca.gov/Conservation/CESA>).

1.10 cont.

**COMMENT 6: Western Burrowing Owl (Biological Resources 4.a. p. 42)**

Burrowing owl (*Athene cunicularia*) is designated by CDFW as a California Species of Special Concern (SSC) due to population decline and breeding range retraction. The species has also experienced a severe population decline in the County. The IS/ND notes ruderal infill lots could support burrowing owl but does not discuss potential impacts. Known populations of burrowing owl occur within and adjacent to the Project area, including Moffett Federal Airfield, the Golf Club at Moffett Field, Sunnyvale Baylands County Park, the grasslands along the City of Sunnyvale Water Pollution Control Plant, and other suitable habitat.

The Project includes strategies such as solar arrays and solar battery storage projects that may occur within ruderal grass and herbaceous vegetation that may be potential burrowing owl habitat. The Project also includes shoreline protection strategies which could impact grassland habitat along the shoreline, currently utilized by burrowing owl. Direct mortality could occur through crushing of adults or young within burrows, loss of nesting burrows, loss of nesting habitat, loss of foraging habitat resulting in reduced nesting success (loss or reduced health or vigor of eggs or young), nest abandonment, and reduced frequency or duration of care for young resulting in reduced health or vigor of young.

1.11

**Recommended Mitigation Measure 6: Habitat Assessment and Surveys.** The IS/ND should include a thorough habitat assessment of potential burrowing owl habitat within and adjacent to the Project area. A professional biologist experienced with burrowing owl and their habitat should conduct a field assessment that includes all areas that could be directly or indirectly impacted by the Project and include data such as vegetation type, vegetation structure and presence of burrows. Specific information on habitat assessment, burrowing owl survey methods, buffer distances and mitigation is provided in the CDFW Staff Report on Burrowing Owl Mitigation, dated March 7, 2012, and available at <https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>.

**Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?**

1.12

**COMMENT 7: Permits for Stream, Wetland, and Other Waters Impacts, Impacts to Sensitive Natural Communities, Riparian Habitat, Wetlands, Lake and Streambed**

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**Alteration Notification and Clean Water Act compliance (Biological Resources 4.c, p. 43-44)**

The IS/ND identifies that future development under the Project may be subject to the Clean Water Act and the Porter-Cologne Water Quality Control Act, but not Fish and Game Code section 1600 et seq. (p. 43). The IS/ND does not provide certainty that such impacts would comply with Fish and Game Code section 1600 et seq., the Porter-Cologne Water Quality Control Act, and the Clean Water Act, as the IS/ND does not include a mitigation measure requiring that development under the Project apply for CDFW, Regional Water Quality Control Board (RWQCB), or U.S. Army Corps of Engineers (USACE) Permits, nor does it contain a mitigation measure requiring compliance with the terms of these permits, if issued.

Development facilitated by the Project may result in impacts to streams and riparian habitats, such as Stevens Creek, Calabazas Creek, and Moffett Channel (p. 44). When riparian habitat is substantially altered, riparian functions become impaired, thereby likely substantially adversely impacting aquatic and terrestrial species. The IS/ND does not provide certainty that impacts to riparian habitats, sensitive natural communities, wetlands, and waters of the State would be reduced to less-than-significant. Without specific mitigation measures containing performance standards CDFW considers impacts to these resources as potentially significant (CEQA Guidelines, §§ 15065, 15380).

1.12 cont.

To reduce potential impacts to streams, wetlands, and other waters to less-than-significant and comply with Fish and Game Code section 1600 et seq., the Porter-Cologne Water Quality Control Act, and the Clean Water Act, CDFW recommends including the mitigation measure below in the IS/ND.

**Recommended Mitigation Measure 7: Stream and Wetland Mitigation and Resource Agency Permits.** The Project shall be designed to minimize fill of jurisdictional waters. If impacts to any streams cannot be avoided, then prior to the impacts the Project shall submit an LSA notification to CDFW and comply with the LSA Agreement, if issued. Additionally, if impacts to any streams, wetlands, or other waters cannot be avoided, the Project shall obtain authorization from the RWQCB and USACE pursuant to the Porter-Cologne Water Quality Control Act and Clean Water Act sections 401 and 404, as applicable. Impacts to waters, wetlands, and riparian habitat subject to the permitting authority of CDFW, the RWQCB, or the USACE shall be mitigated by providing restoration at a minimum 3:1 restoration to impact ratio in area for permanent impacts and 1:1 ratio for temporary impacts, unless otherwise approved in writing by CDFW or otherwise required by the RWQCB or USACE. A Habitat Mitigation and Monitoring Plan shall be prepared and implemented for the proposed mitigation. The Project shall obtain written approval of this plan from CDFW, the RWQCB, or the USACE as applicable prior to any disturbance of stream or riparian habitat, wetlands, or other waters.

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**Recommended Mitigation Measure 8: LSA Notification and other Resource**

**Agency Permits.** The Project shall notify CDFW pursuant to Fish and Game Code section 1600 et seq. using the Environmental Permit Information Management System (EPIMS, see: <https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS>) for Project activities affecting lakes or streams, associated riparian or otherwise hydrologically connected habitat, and any connected wetlands, and shall comply with the LSA Agreement, if issued. Projects shall also obtain and comply with applicable permits from the RWQCB and USACE pursuant to the Clean Water Act and Porter-Cologne Water Quality Control Act.

**Recommended Mitigation Measure 9: Habitat Restoration and Compensation.** The Project shall implement restoration on-site or off-site to mitigate temporary or permanent impacts to sensitive natural communities, riparian habitat, and wetlands at a minimum 1:1 (restore on-site temporary impacts) or 3:1 (permanent impacts) mitigation to impact ratio for acres and linear feet of impacts, or habitat compensation including permanent protection of habitat at the same ratio through a conservation easement and preparing and funding implementation of a long-term management plan, unless otherwise approved in writing by CDFW.

**III. Editorial Comments and/or Suggestions**

CDFW appreciates the inclusion of strategies to restore and enhance marshes along the shoreline of the City to improve climate resilience and habitat for fish and wildlife. CDFW additionally appreciates the inclusion and proposed implementation of an Urban Forest Management Plan that will result in increased canopy cover within the Project area.

**ENVIRONMENTAL DATA**

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDDB. The CNDDDB field survey form can be filled out and submitted online at the following link:

<https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link:

<https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

**ENVIRONMENTAL DOCUMENT FILING FEES**

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is



1.12 cont.

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required in order for the underlying project approval to be operative, vested, and final. (See: Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

↑ 1.15 cont.

## CONCLUSION

CDFW appreciates the opportunity to comment on the IS/ND to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Marcus Griswold, Senior Environmental Scientist (Specialist), at (707) 815-6451 or [Marcus.Griswold@wildlife.ca.gov](mailto:Marcus.Griswold@wildlife.ca.gov).

Sincerely,

DocuSigned by:

*Erin Chappell*

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Erin Chappell  
Regional Manager  
Bay Delta Region

Attachment 1: Special-Status Species and Commercially/Recreationally Important Species

ec: Office of Planning and Research, State Clearinghouse (SCH No. 2024040387)  
Craig Weightman, CDFW Bay Delta Region – [Craig.Weightman@wildlife.ca.gov](mailto:Craig.Weightman@wildlife.ca.gov)  
Jason Faridi, CDFW Bay Delta Region – [Jason.Faridi@wildlife.ca.gov](mailto:Jason.Faridi@wildlife.ca.gov)

## REFERENCES

California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS). <https://wildlife.ca.gov/Data/BIOS>. Accessed April 25, 2024.

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### ATTACHMENT 1: Special-Status Species

Species	Status
steelhead - central California coast DPS ( <i>Oncorhynchus mykiss irideus</i> )	Federally Threatened (FT), State SSC
longfin smelt ( <i>Spirinchus thaleichthys</i> )	Proposed FT, State Threatened (ST)
San Francisco dusky-footed woodrat ( <i>Neotoma fuscipes annectens</i> )	SSC
salt-marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	Federal Endangered (FE), State Fully Protected (FP)
Bryant's savannah sparrow ( <i>Passerculus sandwichensis alaudinus</i> )	SSC
saltmarsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	SSC
burrowing owl ( <i>Athene cunicularia</i> )	SSC
Alameda song sparrow ( <i>Melospiza melodia pusillula</i> )	SSC
grasshopper sparrow ( <i>Ammodramus savannarum</i> )	SSC
tricolored blackbird ( <i>Agelaius tricolor</i> )	ST, SSC
white-tailed kite ( <i>Elanus leucurus</i> )	FP
golden eagle ( <i>Aquila chrysaetos</i> )	FP
northern harrier ( <i>Circus hudsonius</i> )	SSC
black skimmer ( <i>Rynchops niger</i> )	SSC
California least tern ( <i>Sternula antillarum browni</i> )	FE, FP
California Ridgway's rail ( <i>Rallus obsoletus obsoletus</i> )	FE, SE, FP
California black rail ( <i>Laterallus jamaicensis coturniculus</i> )	ST, SSC
western snowy plover ( <i>Charadrius nivosus nivosus</i> )	FT, SSC
western mastiff bat ( <i>Eumops perotis californicus</i> )	SSC
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	SSC

Madeline Khair  
City of Sunnyvale  
May 6, 2024  
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western pond turtle ( <i>Emys marmorata</i> )	Proposed FT, SSC
Crotch's bumble bee ( <i>Bombus crotchii</i> )	State candidate (SC)



## Letter 1

**COMMENTER:** Erin Chappell, Regional Manager Bay Delta Region, California Department of Fish and Wildlife (CDFW)

**DATE:** May 6, 2024

### Response 1.1

The commenter describes CDFW's role as a Trustee and Responsible Agency. The commenter states that their comments have been prepared pursuant to the CDFW's authority as a Trustee Agency under Fish and Game Code Section 711.7a and 1802, Public Resources Code (PRC) Section 21070, and CEQA Guidelines Sections 15386(a) and as a Responsible Agency under PRC Section 21069 and CEQA Guidelines Section 15381. The commenter also states that CDFW may need to exercise regulatory authority as the proposed plan may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority or result in "take." The commenter states that CDFW recommends the project obtain appropriate authorization under the Fish and Game Code.

This comment is noted, and specific concerns raised by the commenter are addressed below. No further response is required.

### Response 1.2

The commenter provides an overview of regulatory requirements related to biological resources, including the California Endangered Species Act (CESA), LSA, Fish and Game Code Sections 3503, 3511, and 4700, and Migratory Bird Treaty Act.

This comment is noted, and specific concerns raised by the commenter are addressed below. No further response is required.

### Response 1.3

The commenter describes the proposed plan, location, and objectives as outlined in the IS-ND.

This comment is noted, and specific concerns raised by the commenter are addressed below. No further response is required.

### Response 1.4

The commenter provides an introduction to their more detailed comments. The commenter states the IS-ND should define the threshold of significance for each impact and describe the criteria used to determine whether the impacts are significant. The commenter also states the IS-ND relies on General Plan policies and on requirements that subsequent projects obtain appropriate permits but does not sufficiently describe how these policies will reduce impacts to less-than-significant.

The thresholds of significance for each resource topic are listed at the beginning of each section of the IS-ND. Section 4, *Biological Resources*, of the IS-ND includes six thresholds of significance, labeled a. through f. As a policy document that does not include any specific planned projects, the potential for significant impacts for each of these thresholds was assessed based on the potential for the plan to result in future physical changes to the environment at a programmatic level. The comment regarding references to compliance with the General Plan and permitting requirements is

an introduction to the commenter's later comments, and specific concerns raised by the commenter are addressed below.

### Response 1.5

The commenter recommends that the IS-ND include a list of special status species and sensitive habitat with the potential to occur within the City.

Pages 42 and 43 of the Draft IS-ND note that there is the potential for protected species and sensitive habitat to occur within the City. These descriptions have been expanded upon in the Final IS-ND to detail the specific species and habitats that the commenter's later recommendations focus on, as follows.

Page 42:

Sunnyvale is a primarily urbanized community with limited habitat to support special-status species. However, ruderal infill lots could support burrowing owl, Crotch's bumble bee, and Congdon's tarplant. Shoreline areas and wetlands in Sunnyvale may support protected shore birds and fish species, such as black skimmer, California least tern, California black rail, California Ridgway's rail, western snowy plover, steelhead, and longfin smelt. These special status species are afforded protection under the federal Endangered Species Act, California Endangered Species Act, and/or California Fish and Game Code (CFGF). Additionally, urban parks, open space, and riparian areas could support nesting birds. Active nests of all migratory birds, including raptors, are protected by State and federal law. Migratory and nesting birds are protected by Sections 3503, 3503.5, and 3513 of the CFGF and the Migratory Bird Treaty Act (MBTA), and may utilize trees, landscaping, and structures throughout Sunnyvale for nesting habitat.

Page 43

Sunnyvale contains wetlands, streams, shoreline, riparian areas, and other sensitive habitat in the areas adjacent to the San Francisco Bay and Stevens Creek, Calabazas Creek, and Moffett Channel. Wetlands and other waters in Sunnyvale are protected by the federal Clean Water Act, the California Porter-Cologne Water Quality Control Act, and CFGF Section 1600 et seq., and are under the jurisdiction of the U.S. Army Corps of Engineers, the San Francisco Bay Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Federal and State regulations require avoidance of impacts to the extent feasible, as well as compensation for unavoidable losses of jurisdictional wetlands and waters and sensitive natural communities and riparian habitat. SMC Chapter 12.60 requires compliance with the Clean Water Act and the Porter-Cologne Water Quality Control Act.

### Response 1.6

The commenter states that the IS-ND does not include a checklist for subsequent project review nor adequate description of how the City's policies would mitigate any potential impacts of the proposed plan. The commenter recommends that the IS-ND include a procedure or checklist for evaluating subsequent project impacts on biological resources.

As described throughout Section 2, *Biological Resources*, projects implemented in support of the proposed plan would be reviewed for consistency with and required to comply with federal and state regulations that protect biological resources, such as the federal Endangered Species Act, California Endangered Species Act, CFGF, Migratory Bird Treaty Act, and Clean Water Act. In addition, projects implemented in support of the proposed plan would also be reviewed for

consistency with local policies such as those contained in the City's General Plan. Specific policies and actions contained in the General Plan that provide for the protection of biological resources include the following:

- Policy LT-1.10: participate in federal, state, and regional programs and processes in order to protect the natural and human environment in Sunnyvale and the region.
  - Action LT-1.10a: Protect and preserve the diked wetland areas in the baylands to preserve or enhance flood protection.
  - Action LT-1.10e: Continue to evaluate and ensure mitigation of potential biological impacts of future development and redevelopment projects in a manner consistent with applicable local, state, and federal laws and regulations.
- Policy LT-2.3: Accelerate the planting of large canopy trees to increase tree coverage in Sunnyvale in order to add to the scenic beauty and walkability of the community; provide environmental benefits such as air quality improvements, wildlife habitat, and reduction of heat islands; and enhance the health, safety, and welfare of residents.
  - Action LT-2.3c: Evaluate increasing the level of required tree planting and canopy coverage for new developments and site renovation projects while preserving solar access for photovoltaic systems.
  - Action LT-2.3d: Require tree replacement for any project that results in tree removal, or in cases of constrained space, require payment of an in-lieu fee. Fee revenues shall support urban forestry programs.
- Policy LT-2.4: Maintain and regularly review and update regulations and practices for the planting, protection, removal, replacement, and long-term management of large trees on private property and city-owned golf courses and parks.
  - Action LT-2.4a: Strictly enforce Chapters 13.16 City Trees and 19.94 Tree Preservation to prevent the unauthorized removal, irreversible damage, and pruning of large protected trees.
- Policy LT-2.5: Recognize the value of protected trees and heritage landmark trees (as defined in city ordinances) to the legacy, character, and livability of the community by expanding the designation and protection of large signature and native trees on private property and in city parks.
  - Action LT-2.5c: Emphasize tree relocation, site redesign, or special construction provisions over removing and irreparably damaging healthy heritage landmark trees and protected trees. Consider more than the economic value of a tree.
- Policy LT-9.5: Maintain existing park and open space tree inventory through the replacement of trees with an equal or greater number of trees when trees are removed due to disease, park development or other reasons.
- Policy LT-9.19: Protect creeks and wetlands as important parts of the community's natural environment and open space and for their contribution to flood control.
  - Action LT-9.19a: Work with other agencies to maintain creeks and wetlands in their natural state.
  - Action LT-9.19c: Minimize or divert pollutants from draining into creeks and wetlands by enforcing best management practices during construction, site development, and ongoing operations.

- Policy LT-10.5: Engage in regional efforts to enhance and protect land uses near streams and to respond to sea level rise and climate change.
  - Action LT-10.5a: Maintain and regularly review and update a streamside development review and permitting process.
  - Action LT-10.5b: Apply development standards provided by the Santa Clara Valley Water District (SCVWD).
  - Action LT-10.5c :Conduct streamside development review as part of a building permit plan check process, design review, the miscellaneous plan permit, and/or the discretionary review process.
  - Action LT-10.5d: Minimize effects of development on natural streambeds.
  - Action LT-10.5e: When opportunities exist, remove existing structures adjacent to streams that impact the streambed.

The City also maintains Bird Safe Design Guidelines in reviewing the design of new structures in the city.<sup>1</sup> These policies are listed in Section 2, *Biological Resources*, and it is noted that future projects under the proposed plan would be required to comply with these policies. Projects would also be subject to environmental review under CEQA, and individual biological resources assessments and impact analyses may identify required plan- or project-specific mitigation measures where applicable, such as nesting bird and special status species surveys and habitat restoration, as recommended in subsequent comments made by the commenter. Therefore, implementation of the proposed plan will comply with the commenter's suggestions for surveys and mitigation measures when applicable and warranted.

### Response 1.7

The commenter recommends a mitigation measure requiring nesting bird surveys prior to project construction activities if construction occurs within the nesting season.

Please refer to Response 1.6, which describes how the City will review and evaluate projects prior to approval which would include enforcing federal, state (including CDFW), and local regulations to minimize impacts to sensitive species including nesting birds when projects supporting the plan are proposed with the specific site location, size, and details of potential construction. Furthermore, completion of pre-construction nesting bird surveys is a standard practice for any project that disturbs vegetation in order to comply with the Migratory Bird Treaty Act and CDFW regulations. These surveys would be implemented as a regulatory requirement and mitigation is not required. Therefore, implementation of the proposed plan will comply with the commenter's suggestions for nesting bird surveys when applicable and warranted.

### Response 1.8

The commenter states the IS-ND does not state potential impacts to shoreline and marsh birds from the plan, such as from projects that would restore and expand salt marshes. The commenter recommends inclusion of a mitigation measure that requires surveys for marsh birds.

The following information has been added to Page 42 of the IS-ND for clarification:

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<sup>1</sup> <https://www.sunnyvale.ca.gov/home/showpublisheddocument/1542/638273438333130000>

Shoreline areas and wetlands in Sunnyvale may support protected shore birds and fish species, such as black skimmer, California least tern, California black rail, California Ridgway's rail, western snowy plover, steelhead, and longfin smelt...

...However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and redevelopment ~~and may~~ that have the potential to result in impacts to special status species through construction activities that could directly cause mortality or result in indirect impacts through loss of breeding, foraging, and nesting habitat. Nonetheless, as addressed below, with adherence to the requirements of federal Endangered Species Act, California Endangered Species Act, CFCG, SMC, and Sunnyvale General Plan policies and actions, construction impacts would be minimized.

Please refer to Response 1.6, which describes how the City will review and evaluate projects prior to approval which would include enforcing federal, state (including CDFW), and local regulations to minimize impacts to sensitive species including shore birds when projects supporting the plan are proposed with the specific site location, size, and details of potential construction. Therefore, implementation of the proposed plan will comply with the commenter's suggestions for surveys and mitigation measures when applicable and warranted.

## **Response 1.9**

The commenter states the IS-ND does not include potential impacts to state listed fish species from the plan, such as from projects that would restore and expand salt marshes. The commenter recommends inclusion of a mitigation measure that would limit in-water construction activities during the CDFW approved work window and use of vibratory pile drivers.

The following information has been added to Page 42 of the IS-ND:

Shoreline areas and wetlands in Sunnyvale may support protected shore birds and fish species, such as black skimmer, California least tern, California black rail, California Ridgway's rail, western snowy plover, steelhead, and longfin smelt...

...However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and redevelopment ~~and may~~ that have the potential to result in impacts to special status species through construction activities that could directly cause mortality or result in indirect impacts through loss of breeding, foraging, and nesting habitat. Nonetheless, as addressed below, with adherence to the requirements of federal Endangered Species Act, California Endangered Species Act, CFCG, SMC, and Sunnyvale General Plan policies and actions, construction impacts would be minimized.

Please refer to Response 1.6, which describes how the City will review and evaluate projects prior to approval which would include enforcing federal, state (including CDFW), and local regulations to minimize impacts to sensitive species including state listed fish species when projects supporting the plan are proposed with the specific site location, size, and details of potential construction. Therefore, implementation of the proposed plan will comply with the commenter's suggestion for mitigation measures when applicable and warranted.

### Response 1.10

The commenter states the IS-ND does not address whether the proposed plan could result in impacts to Crotch's bumble bee, which has been documented to occur in the area. The commenter recommends a mitigation measure requiring habitat assessment for Crotch's bumble bee.

The following information has been added to Page 42 of the IS-ND for clarification:

Sunnyvale is a primarily urbanized community with limited habitat to support special-status species. However, ruderal infill lots could support burrowing owl, Crotch's bumble bee, and Congdon's tarplant...

...However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and redevelopment ~~and may~~ that have the potential to result in impacts to special status species through construction activities that could directly cause mortality or result in indirect impacts through loss of breeding, foraging, and nesting habitat. Nonetheless, as addressed below, with adherence to the requirements of federal Endangered Species Act, California Endangered Species Act, CFCG, SMC, and Sunnyvale General Plan policies and actions, construction impacts would be minimized.

Please refer to Response 1.6, which describes how the City will review and evaluate projects prior to approval which would include enforcing federal, state (including CDFW), and local regulations to minimize impacts to special status species including Crotch's bumble bee when projects supporting the plan are proposed with the specific site location, size, and details of potential construction. Therefore, implementation of the proposed plan will comply with the commenter's suggestions for surveys and mitigation measures when applicable and warranted.

### Response 1.11

The commenter states the IS-ND does not address whether the proposed plan could result in impacts to burrowing owl. The commenter recommends a mitigation measure requiring habitat assessment and surveys for burrowing owl.

The following information has been added to Page 42 of the IS-ND for clarification:

Sunnyvale is a primarily urbanized community with limited habitat to support special-status species. However, ruderal infill lots could support burrowing owl, Crotch's bumble bee, and Congdon's tarplant...

...However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and redevelopment ~~and may~~ that have the potential to result in impacts to special status species through construction activities that could directly cause mortality or result in indirect impacts through loss of breeding, foraging, and nesting habitat. Nonetheless, as addressed below, with adherence to the requirements of federal Endangered Species Act, California Endangered Species Act, CFCG, SMC, and Sunnyvale General Plan policies and actions, construction impacts would be minimized.

Please refer to Response 1.6, which describes how the City will review and evaluate projects prior to approval which would include enforcing federal, state (including CDFW), and local regulations to minimize impacts to special status species including burrowing owl when projects supporting the plan are proposed with the specific site location, size, and details of potential construction.

Therefore, implementation of the proposed plan will comply with the commenter's suggestions for surveys and mitigation measures when applicable and warranted.

### **Response 1.12**

The commenter states the IS-ND does not identify that future development under the plan may be subject to Fish and Game Code section 1600 et seq. The commenter also states the plan could result in impacts to streams and riparian habitat and recommends incorporation of mitigation measures requiring projects to obtain the appropriate CDFW, Regional Water Quality Control Board, and U.S. Army Corps of Engineers permits and provide habitat restoration and compensation as applicable.

The following information has been added to Page 44 of the IS-ND for clarification:

Any future Playbook Update/Game Plan 2028-related projects that could affect sensitive habitat, streams, or wetlands would be required to comply with the requirements of the California Porter-Cologne Water Quality Control Act, and CFGC Section 1600 et seq. Compliance with these regulations would include obtaining the appropriate CDFW, U.S. Army Corps of Engineers, and/or Regional Water Quality Control Board permits and complying with any avoidance, minimization, and habitat restoration measures required by the applicable agencies.

If future plan-related projects would involve activities within rivers, lakes, streams, or riparian habitat, the City would provide written notification to CDFW and any other applicable resource agencies and comply with all regulatory requirements.

### **Response 1.13**

The commenter state they appreciate the inclusion of strategies to restore and enhance marshes along the shoreline of the City and to implement an Urban Forest Management Plan that will result in increased canopy cover.

The commenter's editorial comments are noted and will be shared with City decision makers for their consideration.

### **Response 1.14**

The commenter states that the City should report any special status species and natural communities detected during project surveys to the California Natural Diversity Database.

This information is noted, and the City will comply with this requirement if special status species or natural communities are encountered.

### **Response 1.15**

The commenter states that payment of filing fees is required upon filing of the Notice of Determination for the IS-ND.

This information is noted, and the City will pay the applicable filing fees.

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## Sunnyvale Climate Action Playbook Update/ Game Plan 2028 and CEQA GHG Emissions Thresholds

### Final Initial Study – Negative Declaration

*prepared for*

**City of Sunnyvale**  
City Manager's Office  
456 W. Olive Avenue  
Sunnyvale, CA 94086

*prepared by*

**Rincon Consultants, Inc.**  
449 15th Street, Suite 303  
Oakland, California 94612

**May 2024**



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## Appendices

Appendix A	Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants
Appendix B	Description of Greenhouse Gases of California Concern

# Initial Study

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## Proposed Plan Title

Sunnyvale Climate Action Playbook Update/Game Plan 2028 and  
California Environmental Quality Act (CEQA) Greenhouse Gas (GHG) Emissions Thresholds

## Lead Agency/Plan Sponsor and Contact

### **Lead Agency/Plan Sponsor**

City of Sunnyvale  
City Manager's Office  
456 W. Olive Avenue  
Sunnyvale, CA 94086

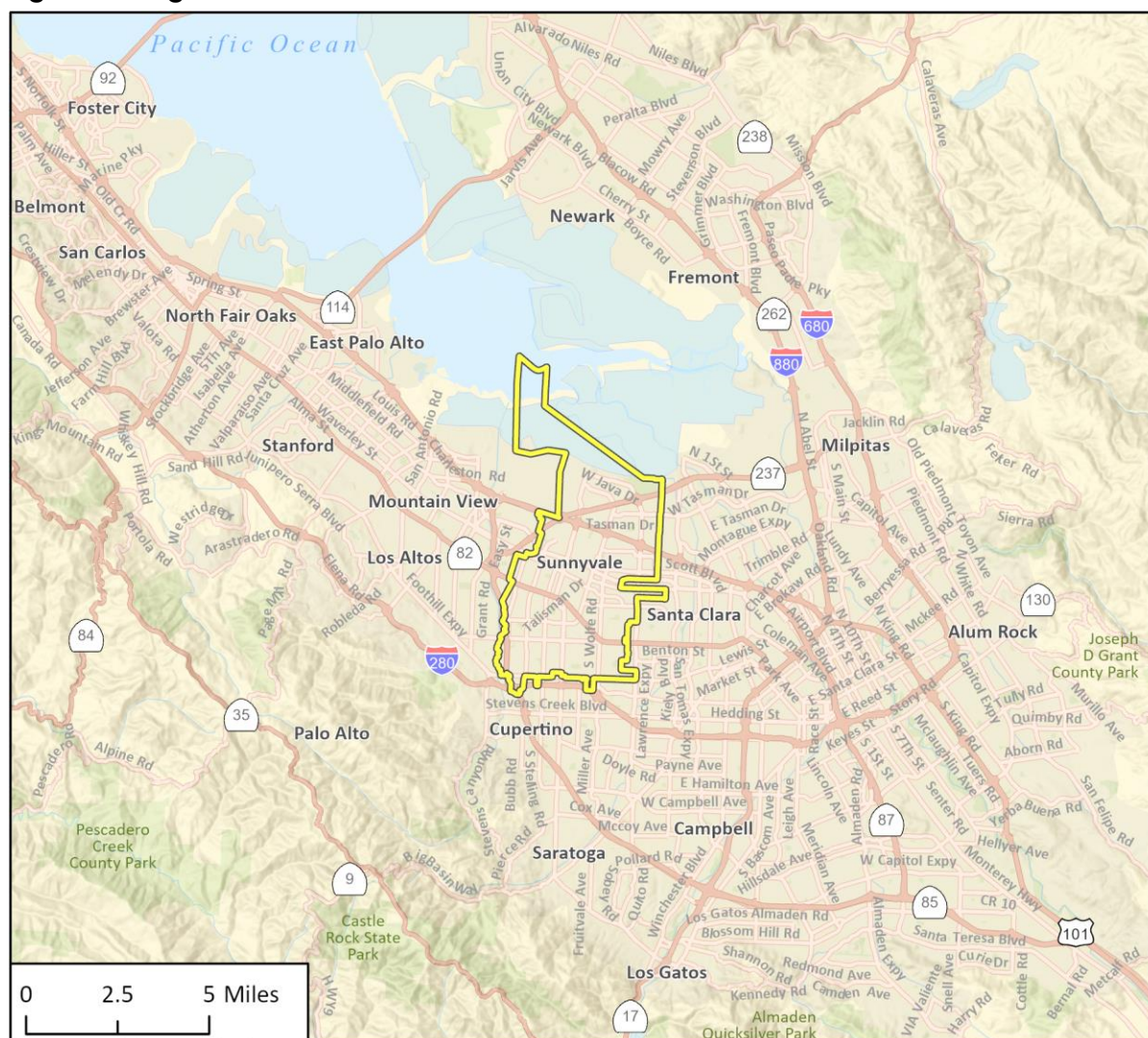
### **Contact Person**

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Environmental Programs Manager  
408-730-7798  
MKhair@sunnyvale.ca.gov

## Plan Location and Physical Setting

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would apply to all areas and plans and projects within the City of Sunnyvale limits. Figure 1 shows the regional location, and Figure 2 shows the plan location.

### Figure 1 Regional Location



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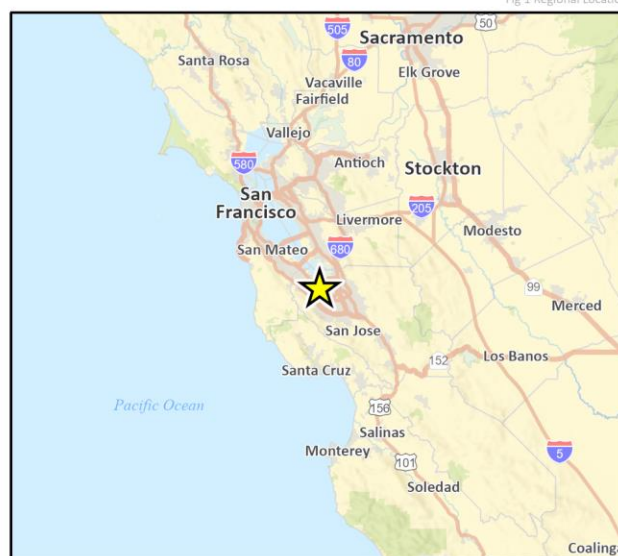
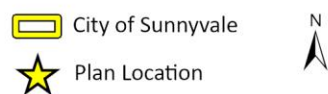
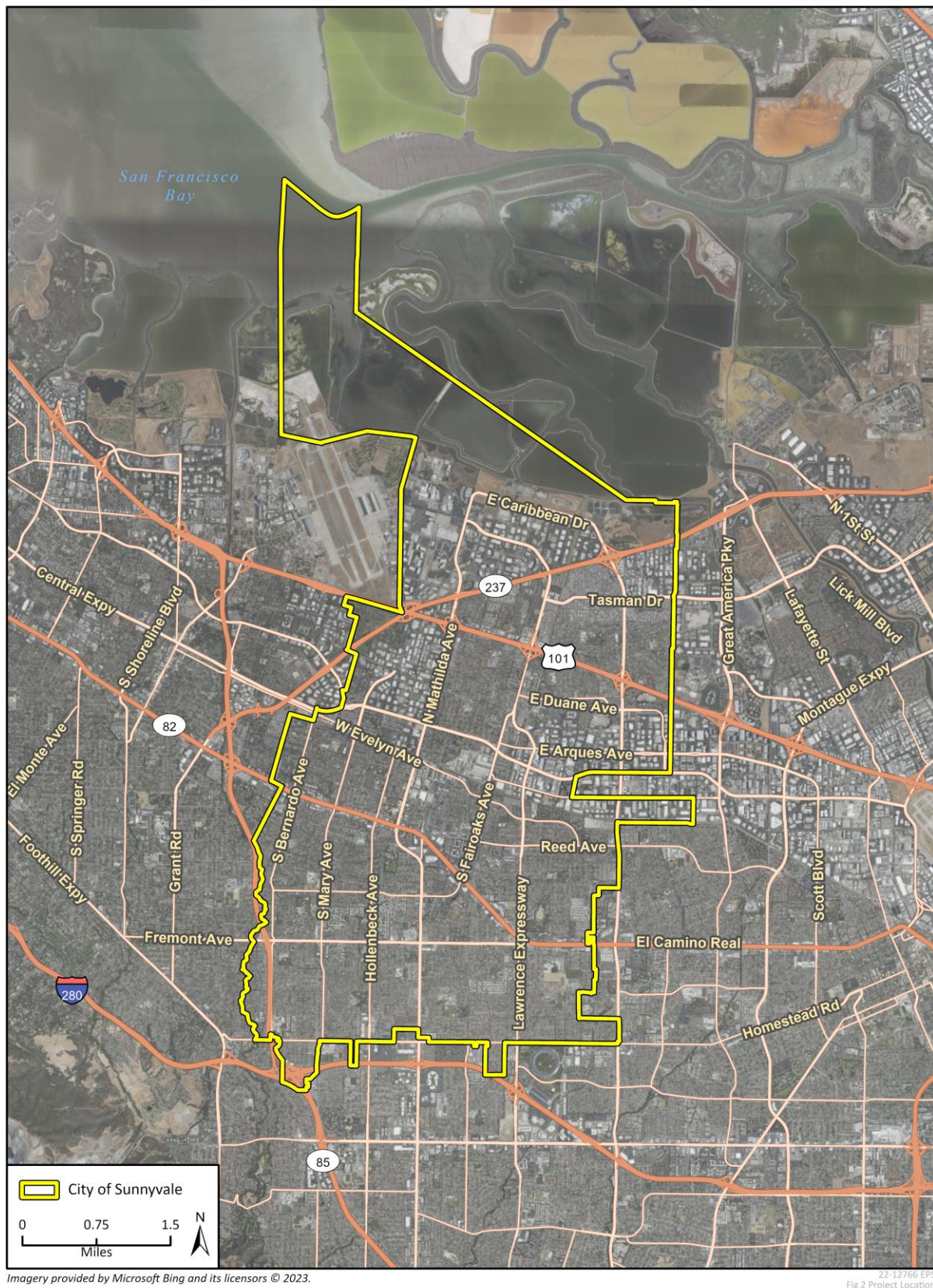




Figure 2 Plan Location



## Regional Location and Setting

The City of Sunnyvale is approximately 24 square miles and located in Santa Clara County within the larger San Francisco Bay Area. Sunnyvale is also located within an area informally referred to as Silicon Valley, which is located approximately 42 miles south of San Francisco and generally includes the Cities of Sunnyvale, Cupertino, San Jose, Menlo Park, Palo Alto, Mountain View, Santa Clara, and Redwood City. Sunnyvale is bordered by the San Francisco Bay to the north, City of Santa Clara to the east, City of Cupertino to the south, and Cities of Mountain View and Los Altos to the west.

Sunnyvale is at the crossroads of five major freeways and expressways: US 101 and State Route (SR) 237 to the north, State Route (SR) 85 to the west, Interstate 280 (I-280) to the south, and Lawrence Expressway to the east. These freeways provide regional access to Sunnyvale. Sunnyvale is also served by public transit facilities, including Santa Clara Valley Transportation Authority (SCVTA) rail and bus lines and the Caltrain commuter rail. There are two Caltrain stations located within Sunnyvale: Lawrence Station located beneath the Lawrence Expressway overcrossing between Reed Avenue and Kifer Road and Sunnyvale Station located near the intersection of Frances Street and Evelyn Avenue.<sup>1</sup> Transit routes in Sunnyvale are shown in Figure 3. In addition, nearby airports include the San Jose International Airport and Moffett Federal Airfield.

## Local Setting

Sunnyvale is the second most populous city in Santa Clara County, with a population of 156,317 in 2022 according to the California Department of Finance (DOF).<sup>2</sup> Nearly all properties in Sunnyvale are developed; only 0.9 percent of land area is vacant. Residential areas account for the single largest land use, amounting to 54 percent of the developed area, while industrial and office uses constitute 25 percent of the developed area, excluding baylands and streets. The balance comprises open space and commercial and other urban land uses.<sup>3</sup> Sunnyvale is almost entirely surrounded by cities and the San Francisco Bay, generally between Calabazas Creek on the east and Stevens Creek on the west. Elevations in Sunnyvale rise slightly from sea level at San Francisco Bay to 300 feet in the city's southwest corner.

Sunnyvale is characterized by a temperate climate with dry summers and wet winters. The warm season lasts from June to October with an average daily high temperature above 73°F. The cool season lasts from November to February with a daily high temperature below 61°F.<sup>4</sup> The warmest months of the year in Sunnyvale are July and August, while the coldest months of the year are December and January.

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<sup>1</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed November 2023).

<sup>2</sup> California Department of Finance (DOF). 2023. E-5 Population and Housing Estimates. <https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/> (accessed November 2023).

<sup>3</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed November 2023).

<sup>4</sup> Weather Spark. 2023. Climate and Average Weather Year Round in Sunnyvale. <https://weatherspark.com/y/571/Average-Weather-in-Sunnyvale-California-United-States-Year-Round#:~:text=Over%20the%20course%20of%20the,or%20above%2087%C2%B0F> (accessed November 2023).



**Figure 3 Sunnyvale Transit Routes**



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22-12766.EPS  
Fig 3 Public Transit Routes

## Existing Sustainability Setting

### Sunnyvale Sustainability and Greenhouse Gas Emissions Reduction Efforts

The City has actively implemented a variety of environmental programs contributing to GHG emissions reductions. The following is a listing of Sunnyvale's primary sustainability and climate protection programs and policies:

- Zero Waste Strategic Plan adopted (2013)
- CAP 1.0 adopted (2014)
- General Plan Environmental Management Element adopted (2016)
- Joined Silicon Valley Clean Energy (SVCE), a Community Choice Energy opt-in program (2017)
- Climate Action Playbook and Game Plan 2022 adopted (2019)
- Green Building Program update adopted (2019)
- Climate Action Scoreboard launched (2020)
- Sunnyvale Active Transportation Plan adopted (2020)
- Vehicle Miles Traveled (VMT) Transportation Policy (City Council Policy 1.2.8) adopted (2020)
- Sunnyvale Reach Codes requiring all-electric new construction and increased solar and electric vehicle (EV) requirements adopted (2021-2023)

The City has also taken several additional sustainability actions, such as converting streetlights to light-emitting diode (LED), increasing number of EV charging stations, increasing rooftop solar on homes and offices, and increasing number of trees planted.

### Regional Sustainability and GHG Reduction Efforts

In coordination with Santa Clara County, the State of California, and the federal government, the City of Sunnyvale has committed to implementing regional and State policies related to GHG emissions reductions. As follows is a summary of the existing regional GHG emissions reduction efforts, which the Draft Sunnyvale Playbook Update/Game Plan 2028 is intended to be consistent with or exceed.

#### *Plan Bay Area: Strategy for a Sustainable Region*

In October 2021, the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) jointly adopted Plan Bay Area 2050, which serves as the Bay Area regional long-range plan and identifies how the Bay Area would meet its GHG emission reduction targets. Plan Bay Area is also considered the ABAG/MTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). In accordance with SB 743, Plan Bay Area includes elements designed to encourage the type of land-use development to preserve affordable housing, improve economic mobility, enhance the transit network to reduce vehicle miles traveled (VMT) per capita, and reduce hazard risks including through adaptation to sea level rise and reducing GHG emissions.<sup>5</sup>

#### *Bay Area Air Quality Management District CEQA Guidelines*

In 2022, the Bay Area Air Quality Management District (BAAQMD) adopted the CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans and is in the

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<sup>5</sup> ABAG-MTC. 2021. Plan Bay Area 2050. <https://www.planbayarea.org/finalplan2050> (accessed November 2023).

process of updating their 2017 CEQA Guidelines.<sup>6</sup> The CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans include requirements for projects and plans in jurisdictions that do not have an adopted local GHG reduction strategy that meets the criteria of CEQA Guidelines Section 15183(b). In addition, according to the BAAQMD, if a project is consistent with a local GHG reduction strategy, then it can be presumed that the project will not have significant GHG impacts.<sup>7</sup> This approach is consistent with CEQA Guidelines, Section 15183.5:

Lead agencies may analyze and mitigate the significant impacts of GHG emissions at a programmatic level, such as...a plan to reduce GHG emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an [Environmental Impact Report] containing a programmatic analysis of GHG emissions.

### *Santa Clara Countywide Transportation Plan*

In 2014, the Santa Clara County Transportation Valley Transportation Authority (VTA) adopted the Valley Transportation Plan (VTP) 2040 to provide the County with a long-range plan for establishing the vision and priorities for transportation over a 25-year planning horizon. The VTP seeks to facilitate and support an integrated, multi-modal transportation system in order to improve mobility and access for all segments of the population and promote environmental sustainability. The plan identifies 371 projects across the county including transit capacity improvements, express lane and highway improvement projects, bicycle and pedestrian facilities, and operations and maintenance. Projects identified for Sunnyvale include Lawrence Expressway and Wildwood Avenue realignment and signalization; Mary Avenue extension; Sunnyvale local streets improvements; and adding bike lanes to Belleville Way, Bernardo Avenue, California Avenue, El Camino Real, Fair Oaks Avenue, Hendy Avenue, Hollenbeck Avenue, Java Drive, Lakewood and Sandia Drive, Mathilda Avenue, Maude Avenue, Moffett Park area, Stevens Creek Trail, Tasman Drive, Fair Oaks/Tasman Drive, Fair Oaks Junction Trail, and Olive Avenue.<sup>8</sup> VTA is currently in the process of updating the VTP, with the 2050 VTP anticipated to be adopted in winter 2024.<sup>9</sup>

### *Santa Clara County Climate Roadmap 2030*

Santa Clara County is currently developing the Climate Roadmap 2030 which will outline actions the County and partners will take to reduce greenhouse gas emissions. The Roadmap will serve to align existing efforts to reduce GHG emissions among Cities that have already adopted CAPs, prioritize actions in unincorporated areas of the County, and help leverage and facilitate regional partnerships to further encourage sustainable and resilient communities. The County aims to use the Roadmap as a tool to increase coordination and collaboration in efforts to reach shared sustainability goals.

The Roadmap will include the following:

- A countywide greenhouse gas emissions inventory and forecast

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<sup>6</sup> BAAQMD. 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. [https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-b-thresholds-for-evaluating-significance-of-climate-impacts\\_final-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-b-thresholds-for-evaluating-significance-of-climate-impacts_final-pdf.pdf?la=en) (accessed November 2023).

<sup>7</sup> Ibid

<sup>8</sup> Valley Transportation Authority (VTA). 2014. Valley Transportation Plan 2040. [http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site\\_Content/VTP2040\\_final\\_hi%20res\\_030315.pdf](http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/VTP2040_final_hi%20res_030315.pdf) (accessed November 2023).

<sup>9</sup> VTA. 2023. Valley Transportation Plan (VTP) 2050 webpage. <https://www.vta.org/projects/valley-transportation-plan-vtp-2050> (accessed November 2023).

- An online interactive map tool that will provide a comprehensive overview of the cities, organizations, institutions, and companies working on climate action in Santa Clara County
- Community and partner input
- An implementation roadmap<sup>10</sup>

### *Silicon Valley Clean Energy Community Choice Energy*

SVCE formed in 2017 as the community-owned electricity provider for several south bay cities, including Sunnyvale. SVCE developed its Decarbonization Strategy and Programs Roadmap with extensive community input to help guide community electrification, which entails switching from relying on fossil fuel use in homes, buildings and transportation to electricity from renewable sources. By 2030, SVCE programs aim to cut energy-related pollution in half from the 2015 baseline. That equates to preventing two million metric tons of carbon dioxide equivalents (MT of CO<sub>2</sub>e) from being released into the environment each year.

## **State Sustainability and GHG Reduction Efforts**

As follows is a summary of existing State GHG emissions reduction efforts, which the Playbook Update/Game Plan 2028 are intended to be consistent with or exceed.

### *GHG Reduction Policies*

#### **CALIFORNIA EXECUTIVE ORDER S-3-05**

In 2005, the California governor issued Executive Order (EO) S-3-05, which identifies Statewide GHG emissions reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020
- Reduce GHG emissions to 80 percent below 1990 levels by 2050

In response to EO S-3-05, California Environmental Protection Agency (CalEPA) created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the “2006 CAT Report”). The *2006 CAT Report* identified a recommended list of strategies that the State could pursue to reduce GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the State agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, among others.

#### **CALIFORNIA ASSEMBLY BILL 32, CALIFORNIA GLOBAL WARMING POLLUTION SOLUTIONS ACT**

In 2006, the California legislature signed Assembly Bill (AB) 32 – the Global Warming Solutions Act – into law, requiring a reduction in Statewide GHG emissions to 1990 levels by 2020 and California Air Resources Board (CARB) preparation of a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 required CARB to adopt regulations to require reporting and verification of Statewide GHG emissions. Based on this guidance, CARB approved a 1990 Statewide GHG level and 2020 limit of 427 MT of CO<sub>2</sub>e.

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<sup>10</sup> Santa Clara County. 2023. Climate Roadmap 2030. <https://sustainability.sccgov.org/climate-roadmap-2030> (accessed November 2023).

**CALIFORNIA SENATE BILL 375, SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT**

In 2008, Senate Bill (SB) 375 enhanced the State's ability to reach AB 32 targets by CARB to develop regional GHG emissions reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPO) to prepare a sustainable community's strategy (SCS) that contains a growth strategy to meet such regional GHG emissions reduction targets for inclusion in the respective 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 was assigned targets of a ten percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a nineteen percent reduction in per capita GHG emissions from passenger vehicles by 2035.<sup>11</sup>

**CALIFORNIA CLIMATE CHANGE SCOPING PLAN**

In 2008, CARB approved the original California Climate Change Scoping Plan, which included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted and implemented since approval of the Scoping Plan.

**CALIFORNIA CLIMATE CHANGE SCOPING PLAN UPDATE (2013)**

In 2013, CARB approved the first update to the California Climate Change Scoping Plan. The 2013 Scoping Plan Update defined CARB climate change priorities for the next five years and set the groundwork to reach post-2020 Statewide GHG emissions reduction goals. The 2013 Scoping Plan Update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use.

**CALIFORNIA EXECUTIVE ORDER B-30-15**

In 2015, the California governor issued Executive Order B-30-15, which established a Statewide mid-term GHG reduction target of 40 percent below 1990 levels by 2030.

**CALIFORNIA SENATE BILL 32, CALIFORNIA GLOBAL WARMING POLLUTION SOLUTIONS ACT UPDATE**

In 2016, SB 32 was passed, extending AB 32 by requiring further reduction in Statewide GHG emissions 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).

**CALIFORNIA CLIMATE CHANGE SCOPING PLAN UPDATE (2017)**

In 2017, CARB approved the second update to the California Climate Change Scoping Plan. The 2017 Scoping Plan put an increased emphasis on innovation, adoption of existing technology, and

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<sup>11</sup> CARB. 2023. SB 375 Regional Plan Climate Targets. <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets> (accessed November 2023).

strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan Update 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 Statewide per-capita goals of six MT of CO<sub>2</sub>e by 2030 and two MT of CO<sub>2</sub>e by 2050. As stated in the 2017 Scoping Plan Update, 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 GHG emissions sectors in the State.<sup>12</sup>

### **CALIFORNIA EXECUTIVE ORDER B-55-18**

In 2018, the California governor 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 32.

For more information on the Senate and Assembly Bills, Executive Orders, and Scoping Plans discussed above, and to view reports and research referenced above, please refer to the following websites: [www.climatechange.ca.gov](http://www.climatechange.ca.gov) and [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm).

### **ASSEMBLY BILL 1279**

In September 2022, AB 1279 was approved, which established a legally binding requirement for California to achieve and maintain carbon neutrality no later than 2045. Assembly Bill 1279 also established the requirement to achieve a Statewide reduction in GHG emissions of 85 percent below 1990 levels by 2045. This indicates that the remaining 15 percent to achieve carbon neutrality can be achieved via carbon sequestration and other non-direct-GHG-emissions-reductions techniques.

### **CALIFORNIA CLIMATE CHANGE SCOPING PLAN UPDATE (2022)**

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB adopted the Final 2022 Climate Change Scoping Plan in November 2022. The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action in natural working lands to reduce emissions and sequester carbon, and the capture and storage of carbon. The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work.<sup>13</sup>

<sup>12</sup> CARB. 2017. California 2017 Climate Change Scoping Plan. [https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf) (accessed November 2023).

<sup>13</sup> CARB. 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf> (accessed November 2023)

*Energy- and Vehicle-Related Policies***ASSEMBLY BILL 1493, PAVLEY BILL VEHICLE EFFICIENCY STANDARDS**

In 2002, the California State Legislature enacted Assembly Bill 1493 (aka “the Pavley Bill”), which directs the CARB to adopt standards that will achieve “the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles,” taking into account environmental, social, technological, and economic factors. In September 2009, CARB adopted amendments to the “Pavley” regulations to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The Pavley Bill is considered to be the national model for vehicle emissions standards. In January of 2012, CARB approved a new emissions control program for vehicle model years 2017 through 2025. The program combines the control of smog, soot, and GHGs and the requirement for greater numbers of zero emission vehicles into a single package of standards called Advanced Clean Cars.

**CALIFORNIA ENERGY EFFICIENCY STRATEGIC PLAN OF 2008**

In 2008, the California Public Utilities Commission (CPUC) adopted California’s first Long Term Energy Efficiency Strategic Plan, presenting a single roadmap to achieve maximum energy savings across all major groups and sectors in California. The Strategic Plan was subsequently updated in January 2011 to include a lighting chapter. The Strategic Plan sets goals of all new residential construction and all new commercial construction in California to be zero net energy (ZNE) by 2020 and 2030, respectively. In 2018, the California Energy Commission voted to adopt a policy requiring all new homes in California to incorporate rooftop solar. This change went into effect in January 2020 with the adoption of the 2019 California Code of Regulations (CCR) Title 24 Code and is a step towards the State achieving its goal of all residential new construction being ZNE by 2020. Additionally, the Strategic Plan sets goals of 50 percent of existing commercial buildings to be retrofitted to ZNE by 2030, and all new State buildings and major renovations to be constructed to ZNE by 2025.

**CALIFORNIA CODE OF REGULATIONS TITLE 24 (CALIFORNIA BUILDING CODE)**

Updated every three years through a rigorous stakeholder process, Title 24 of the CCR requires California homes and businesses to meet strong energy efficiency measures, thereby lowering their energy use. Title 24 contains numerous subparts, including Part 1 (Administrative Code), Part 2 (Building Code), Part 3 (Electrical Code), Part 4 (Mechanical Code), Part 5 (Plumbing Code), Part 6 (Energy Code), Part 8 (Historical Building Code), Part 9 (Fire Code), Part 10 (Existing Building Code), Part 11 (Green Building Standards Code), Part 12 (Referenced Standards Code). The California Building Code is applicable to all development in California. (Health and Safety Code §§ 17950 and 18938(b).)

The regulations receive input from members of industry, as well as the public, with the goal of “[r]educing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy.” (Pub. Res. Code § 25402.) These regulations are carefully scrutinized and analyzed for technological and economic feasibility (Pub. Res. Code § 25402(d)) and cost effectiveness (Pub. Res. Code § 25402(b)(2) and (b)(3)). The 2022 Title 24 standards went into effect on January 1, 2023.

**Part 6 – Building Energy Efficiency Standards**

CCR Title 24 Part 6 is the Building Energy Efficiency Standards. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California’s energy demand. The Building Energy Efficiency Standards is updated periodically



to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Building Energy Efficiency Standards through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission.

### **Part 11 – California Green Building Standards**

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective on January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards applicable to air quality require:

- Minimum 20 percent reduction in indoor water use relative to specified baseline levels;<sup>14</sup>
- Waste Reduction:
  - Minimum 65 percent non-hazardous construction/demolition waste diverted from landfills;
  - Non-residential and multi-family dwellings with five or more units: Provide readily accessible areas identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastic, organic waste, and metals; and/or
  - Non-residential: Reuse and/or recycling of 100 percent of trees, stumps, rocks, and associated vegetation soils resulting from primary land clearing;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards; and
- EV Charging for New Construction:<sup>15</sup>
  - One- and two-family dwellings and town houses with attached private garages: Dedicated circuitry to facilitate installation of electric vehicle (EV) charging;
  - Multi-family dwellings and hotels/motels with less than 20 units/rooms: Designation of at least 10 percent of the total number of parking spaces shall be EV capable and at least 25 percent of the total number of parking spaces shall be EV-ready;
  - Multi-family dwellings and hotels/motels with greater than 20 units/rooms: Designation of at least 10 percent of the total number of parking spaces shall be EV capable, at least 25

<sup>14</sup> Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

<sup>15</sup> EV Capable = a vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways to support EV charging; EV-ready = a vehicle space which is provided with a branch circuit and any necessary raceways to accommodate EV charging stations, including a receptacle for future installation of a charger (see 2022 California Green Building Standard Code, Title 24 Part 11 for full explanation of mandatory measures, including exceptions).



percent of the total number of parking spaces shall be EV-ready, and at least 5 percent of the total number of parking spaces shall be equipped with a Level 2 charging station;

- Non-residential land uses shall comply with the following EV charging requirements based on the number of passenger vehicle parking spaces:

0-9: no EV capable spaces or charging stations required;

10-25: 4 EV capable spaces but no charging stations required;

26-50: 8 EV capable spaces of which 2 must be equipped with charging stations;

51-75: 13 EV capable spaces of which 3 must be equipped with charging stations;

76-100: 17 EV capable spaces of which 4 must be equipped with charging stations;

101-150: 25 EV capable spaces of which 6 must be equipped with charging stations;

151-200: 35 EV capable spaces of which 9 must be equipped with charging stations; and

More than 200: 20 percent of the total available parking spaces of which 25 percent must be equipped with charging stations;

- Non-residential land uses shall comply with the following EV charging requirements for medium- and heavy-duty vehicles: warehouses, grocery stores, and retail stores with planned off-street loading spaces shall install EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) at the time of construction based on the number of off-street loading spaces as indicated in Table 5.106.5.4.1 of the California Green Building Standards;

- **Bicycle Parking:**

- Non-residential short-term bicycle parking for projects anticipated to generate visitor traffic: permanently anchored bicycle racks within 200 feet of visitor entrance for 5 percent of new visitor motorized vehicle parking spaces with a minimum of one 2-bike capacity rack; and/or
- Non-residential buildings with tenant spaces of 10 or more employees/tenant-occupants: secure bicycle parking for 5 percent of the employee/tenant-occupant vehicle parking spaces with a minimum of one bicycle parking facility.

- **Shade Trees (Non-Residential):**

- Surface parking: minimum No. 10 container size or equal shall be installed to provide shade over 50 percent of the parking within 15 years (unless parking area covered by appropriate shade structures and/or solar);
- Landscape areas: minimum No. 10 container size or equal shall be installed to provide shade of 20 percent of the landscape area within 15 years; and/or
- Hardscape areas: minimum No. 10 container size or equal shall be installed to provide shade of 20 percent of the landscape area within 15 years (unless covered by applicable shade structures and/or solar or the marked area is for organized sports activities).

The City of Sunnyvale Reach Codes modify CALGreen and require that all new buildings and certain alterations be constructed as all-electric (no natural gas lines permitted). The Reach Codes also

require all new buildings to include EV charging infrastructure installed above and beyond that required by CALGreen.<sup>16,17</sup>

### **ASSEMBLY BILL 117, COMMUNITY CHOICE AGGREGATION**

AB 117 allows the creation of Community Choice Aggregation (CCA) that fosters clean and renewable energy markets. CCA allows cities and counties to aggregate the buying power of individual jurisdictions. The California CCA markets were created as an answer to the brownouts and energy shortages of the early 2000's. AB 117 was passed in 2002 as an answer to California's increased energy independency by incorporating more alternative and renewable energy sources into its energy portfolio. With AB 117, municipalities can provide alternative energy choices to their local carrier (e.g., Pacific Gas and Electric). Marin Clean Energy was the first CCA in the State of California to go online with a 50 percent to 100 percent clean energy portfolio in 2010. In 2017, SVCE began supplying south bay area communities, including Sunnyvale, with options for 100 percent renewable energy-sourced electricity or electricity from a mix of renewable and non-renewable sources. CCAs are governed by the CPUC. SB 790 further ensures fair and transparent competition by creating a code of conduct and guiding principles for entrants into the CCA field.

### **SENATE BILL 1275, CHARGE AHEAD INITIATIVE**

In 2014, SB 1275 established a State goal of one million zero-emissions and near-zero-emissions vehicles in service by 2020 and directed CARB to develop a long-term funding plan to meet this goal. SB 1275 also established the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs and increasing access to and benefits from zero-emissions vehicles for disadvantaged, low- and moderate-income communities and consumers.

### **SENATE BILL 350, CLEAN ENERGY AND POLLUTION REDUCTION ACT OF 2015**

In 2015, SB 350 established new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 codified Governor Brown's aggressive clean energy goals and established the State 2030 GHG reduction target of 40 percent below 1990 levels. To achieve this goal, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 (legislation originally enacted in 2002) to 50 percent by 2030. Renewable resources include wind, solar, geothermal, wave, and small hydroelectric power. In addition, SB 350 requires the State to double State-wide energy efficiency savings in electricity and natural gas end uses by 2030 from a base year of 2015.

### **SENATE BILL 1020, CLEAN ENERGY, JOBS, AND AFFORDABILITY ACT OF 2022**

Established in 2002 under SB 1078, and accelerated by SB 107 (2006), SB X 1-2 (2011), SB 100 (2018), and SB 1020, California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to transition the electricity supply to renewable resources. The RPS requires energy service providers to supply renewable energy as follows: 90 percent of retail sale electricity and 100 percent of electricity procured to serve state agencies by 2035, 95 percent by 2040, and 100 percent by 2045. The CPUC and the CEC are jointly responsible for implementing the program.

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<sup>16</sup> Sunnyvale, City of. 2023. Single-Family, Duplex, and Townhome Reach Codes.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/1780/638114476018662936> (accessed November 2023).

<sup>17</sup> Sunnyvale, City of. 2021. Nonresidential and Multifamily Residential Reach Codes.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/1496/637820847520270000> (accessed November 2023).

## *Other GHG Emissions-Related Policies*

### **ASSEMBLY BILL 197, STATE AIR RESOURCES BOARD GHGS REGULATIONS**

In 2016, the California legislature approved AB 197, a bill linked to SB 32, which increases legislature oversight over CARB and directs CARB to prioritize disadvantaged communities in its climate change regulations, and to evaluate the cost-effectiveness of measures it considers. AB 197 requires CARB to protect the State's most impacted and disadvantaged communities [and] consider the social costs of the emissions of GHGs when developing climate change programs. The bill also adds two new legislatively appointed non-voting members to CARB, increasing the Legislature's role in CARB's decisions.

### **SENATE BILL 97, CEQA GUIDELINES FOR ADDRESSING GHG EMISSIONS**

CEQA requires public agencies to review the environmental impacts of proposed projects, including General Plans, Specific Plans, and specific kinds of development projects. In February 2010, the California Office of Administrative Law approved the recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments were developed to provide guidance to public agencies regarding the analysis, mitigation, and effects of GHG emissions in draft CEQA documents.

## General Plan Designation and Zoning

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would be implemented throughout the City and would apply to all General Plan designations and in all zoning designations.

## Description of Plan

### **Sunnyvale Playbook Update/Game Plan 2028**

The Sunnyvale Playbook Update/Game Plan 2028 incorporates the many climate protection programs noted above that would continue to reduce GHG emissions. The City has developed the Sunnyvale Playbook Update/Game Plan 2028 in order to achieve a resilient and sustainable community and support regional, State, and global climate goals through achieving the City's 2030 and 2045 climate action targets.

The Playbook Update/Game Plan 2028 seeks to achieve several future targets, including reducing GHG emissions 56 percent below 1990 levels by 2030 and putting Sunnyvale on a trajectory to meet the State goal of achieving carbon neutrality by 2045. The Playbook Update/Game Plan 2028 is also intended to provide a framework through its actions for a safer future and enhanced quality of life for the community, new economic opportunities through green jobs, and enhanced social equity and citizen engagement on the issue of climate change. The Playbook Update/Game Plan 2028 provides a foundation for future sustainable development efforts in Sunnyvale. It is anticipated that environmental review documents for future development projects would identify and incorporate applicable GHG reduction measures and actions from the Playbook Update/Game Plan 2028.

The Playbook Update/Game Plan 2028 addresses communitywide GHG emissions and includes a discrete target for Sunnyvale to reach maximum annual emissions of 441,846 MT of CO<sub>2</sub>e emissions by 2030. The Playbook Update/Game Plan 2028 includes a 2019 communitywide GHG emissions

**Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds**

inventory, contains a list of Strategies, Plays, and Moves to achieve Sunnyvale’s sustainability goals, and focuses on actions through 2030 for purposes of meeting the City’s 2030 GHG emissions target.

The 2019 GHG emissions inventory provides the basis for emissions forecasts for the years 2025, 2030, 2035, 2040, and 2045. The GHG emissions inventory was completed in compliance with all relevant protocols and guidance documents, including U.S. Community Protocol, Local Government Operations Protocol, the Global Protocol for Community Scale GHG Emissions, and the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories. In 2019, Sunnyvale’s total GHG emissions were estimated to be 716,382 MT of CO<sub>2</sub>e. GHG emissions in the inventory are categorized based on sectors. These sectors include off-road vehicles and equipment, solid waste, water and wastewater, on-road transportation, Caltrain, residential energy use, and nonresidential energy use. Table 1 provides the summary of Sunnyvale’s 2019 GHG emissions by sector, as well as each sector’s percentage of communitywide emissions.<sup>18</sup> As shown therein, the largest GHG emissions are related to transportation and building energy use.

**Table 1 Sunnyvale 2019 Communitywide GHG Emissions Levels**

GHG Emissions Sector/Source	CO <sub>2</sub> e (MT)	Percent of Total Emissions
Residential Energy	103,299	14
Nonresidential Energy	147,710	21
Transportation	373,498	52
Caltrain	1,119	<1
Off-Road Equipment	41,425	6
Water and Wastewater	825	<1
Solid Waste	48,506	7
<b>Total</b>	<b>716,382</b>	<b>100</b>

CO<sub>2</sub>e = carbon dioxide equivalent; MT = Metric Tons

Source: Rincon Consultants, Inc. Sunnyvale 2019 Community Inventory Memorandum. February 6, 2023.

The Sunnyvale Playbook Update/Game Plan 2028 establishes a target to reduce communitywide GHG emissions to 56 percent below 1990 levels by 2030 (441,846 MT of CO<sub>2</sub>e). This would exceed the SB 32 State GHG emissions target of 40% below 1990 levels by 2030, consistent with CEQA for a qualified GHG emissions reduction strategy and to be achievable by City-supported Plays and Moves identified in the Playbook Update/Game Plan 2028. The Playbook Update/Game Plan 2028 includes a business-as-usual (BAU) forecast and an adjusted BAU (ABAU) forecast of GHG emissions, based on the 2019 inventory, that enables Sunnyvale to estimate the emissions reductions required to meet its communitywide reduction targets.

The Sunnyvale Playbook Update/Game Plan 2028 is organized into Strategies, each of which includes “Plays” and “Moves.” These Strategies focus on clean electricity, building decarbonization, transportation decarbonization and sustainable land use planning, solid waste and water use reductions, community engagement, and climate adaptation. Table 2 includes a complete list of the Strategies, Plays, and Moves established by the Playbook Update/Game Plan 2028, as well as anticipated annual GHG reductions in 2030.

<sup>18</sup> Rincon Consultants, Inc. Sunnyvale 2019 Community Inventory Memorandum. February 6, 2023.

**Table 2 Sunnyvale Playbook Update/Game Plan 2028 GHG Emissions Reduction Strategies, Plays, and Moves**

Move ID #	Strategies and Respective Supporting Plays and Moves	Anticipated GHG Emissions Reduction (MT of CO <sub>2</sub> e) <sup>1</sup>
<b>Strategy 1: Promoting Clean Energy</b>		
<b>Play 1.1 : Promoting 100% clean energy with 100% clean energy participation by 2030</b>		
1.A	Continue to support and steer SVCE in providing clean power and decarbonization programs.	2030: 3,299 2045: 0
1.B	Collaborate with SVCE to target Direct Access (DA) customers to shift to 100% clean electricity.	
1.C	Implement an Organic Waste-to-Energy program at the Donald M. Somers Water Pollution Control Plant.	
1.D	Work with SVCE to maintain a SVCE GreenPrime opt-out rate of no more than 3% and provide educational materials to community members on available incentives and benefits of the program.	
<b>Play 1.2: Increase local solar photovoltaics with 3% of load from local solar by 2030 and 5% by 2045</b>		
1.E	Continue to enforce the solar panel requirements of the new building Reach Codes and Moffett Park Specific Plan policies to increase solar energy generation and storage in Moffett Park and throughout the community.	2030: 3 2045: 0
<b>Play 1.3: Increase distributed electricity storage with 2% of electricity demand stored in batteries locally by 2030 and 5% by 2045</b>		
1.F	Collaborate with SVCE to evaluate opportunities for community-scale energy storage to maximize utilization of local solar supply and to enhance resiliency.	Supportive
1.G	Support a shared thermal energy system with energy storage at Moffett Park to serve as a potential model for other areas.	
<b>Strategy 2: Decarbonizing Buildings</b>		
<b>Play 2.1: Reduce energy in existing buildings with 5% of homes and businesses receiving a deep energy retrofit by 2030 and 30% by 2045</b>		
2.A	Research and develop energy disclosure and energy benchmarking requirements for existing commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.	Supportive
2.B	Update the local Green Building Program by fiscal year 2024/25 to incentivize energy efficiency measures and the achievement of net zero energy in existing buildings.	
2.C	Conduct a municipal GHG emissions inventory every five years and continue tracking measure implementation.	
<b>Play 2.2: Support electrification of existing buildings with 44% of homes and businesses electrified by 2030 and 92% by 2045</b>		
2.D	Develop an engagement and incentive program to accelerate the adoption of all-electric appliances.	2030: 108,935 2045: 162,360
2.E	Eliminate non-electric sources of power in municipal buildings upon rebuild or significant remodel.	
2.F	Develop and implement an existing residential building electrification strategy (RBES).	
2.G	Adopt an electrification ordinance for existing residential buildings by 2026.	

Move ID #	Strategies and Respective Supporting Plays and Moves	Anticipated GHG Emissions Reduction (MT of CO <sub>2</sub> e) <sup>1</sup>
2.H	Conduct a study to evaluate the feasibility of adopting an end-of-flow ordinance for natural gas by 2045.	
2.I	Develop and implement an existing commercial building electrification strategy (CBES).	
2. J	Adopt an electrification ordinance for existing commercial buildings by 2026.	
2.K	Enforce the residential and commercial electrification ordinance compliance by developing and implementing a comprehensive permitting compliance program.	
2.L	Develop a Building Performance Standard (BPS) for existing buildings that requires electrification by 2030.	
2.M	Partner with Santa Clara County, Bay Area Renewable Energy Network (BayREN) and SVCE to create community-support programs to provide residents the resources and utility rate structures needed to convert to all-electric, energy efficient equipment and appliances.	
<b>Play 2.3: Achieve all-electric new construction with 100% all-electric new buildings by 2030</b>		
2.N	Continue implementing and augmenting Reach Codes through a phased approach.	2030: 75,786 2045 213,785
<b>Strategy 3: Decarbonizing Transportation and Sustainable Land Use</b>		
<b>Play 3.1: Increase opportunities for and encourage development of mixed-use sites to reduce vehicle miles per person by 20% by 2030 and 30% by 2045</b>		
3.A	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.	2030: 66,162 2045: 75,239 (emissions reductions of Play 3.1 and Play 3.2 combined)
<b>Play 3.2: Increase transportation options and support shared mobility to reduce vehicle miles per person by 20% by 2030 and 25% by 2045</b>		
3.B	Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.	See above
3.C	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile (FLM) strategies in over two-thirds of the cross-city corridors.	
3.D	Update and implement the Active Transportation Plan (ATP) to achieve a connected, safe and active network.	
3.E	Continue to evaluate the potential for the shared bicycle and scooter pilot program as a permanent program.	
3.F	Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.	
3.G	Develop design standards for streets and parking lots to accommodate increased pickup and drop-off for rideshare passengers and apply as appropriate.	
3.H	Create a TDM program for City staff to promote alternative transportation modes and carpooling to the greatest extent possible.	

Move ID #	Strategies and Respective Supporting Plays and Moves	Anticipated GHG Emissions Reduction (MT of CO <sub>2</sub> e) <sup>1</sup>
3.I	Establish and implement a plan to convert vehicle roadways to bicycle and pedestrian space to increase opportunities for active transportation in the community.	
3.J	Require employers with 1,000 employees and more to develop TDM Plans.	
3.K	Establish tracking metrics to evaluate effectiveness of Moves impact on VMT and a monitoring schedule to report progress. Revise Moves accordingly based on VMT progress report.	
<b>Play 3.3: Increase zero-emission vehicles (ZEVs) with 42% of all vehicles on road being ZEVs by 2030 and 90% by 2045</b>		
3.K	Continue implementing the Drive Electric Program and providing resources to assist and encourage community adoption of EVs.	2030: 98,079 2045: 99,836
3.L	Electrify the Municipal Fleet as existing vehicles need replacement and install EV infrastructure (EVI) at municipal properties to support the electric fleet.	
3.M	Support the development of the Community EV Readiness and Infrastructure Plan and facilitate the installation of EVI.	
3.N	Partner with SVCE to strengthen and expand their incentive program for EVI.	
<b>Play 3.4: Decarbonize off-road equipment and vehicles with 30% of off-road equipment and vehicles being zero-emissions by 2030 and 75% by 2045</b>		
3.O	Create a phased ordinance by 2026 to ban local operation of gasoline and diesel-powered off-road equipment by type, including banning local operation of gasoline and diesel-powered small off-road equipment (SORE) by 2028.	2030: 15,753 2045: 18,603
<b>Strategy 4: Managing Resources Sustainably</b>		
<b>Play 4.1: Achieve zero waste goals of by reducing landfilled garbage to 1 pound (lb) per person per day and achieve 75% diversion of landfilled organics by 2030 and &lt;1 lb per day and achieve 75% diversion of landfilled organics by 2045</b>		
4.A	Implement a campaign for waste reduction.	2030: 45,258 2045: 65,093
4.B	Conduct a pilot program with reusable foodware for dine-in and takeout orders.	
4.C	Comply with SB 1383 requirements to help the state reduce organic waste disposal 75% by 2025.	
4.D	Expand the City's edible food recovery program to edible food generators beyond those required by SB 1383.	
4.E	Continue to implement the mandatory waste diversion ordinance requiring all residents, visitors, and businesses to place their discards in the appropriate container (i.e., recycle, food scraps or garbage).	
<b>Play 4.2: Ensure resilience of water supply</b>		
4.F	Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with statewide requirements.	Supportive
4.G	Partner with Valley Water to evaluate opportunities to expand water reuse.	
4.H	Conduct a feasibility study to assess the costs and benefits of implementing Advanced Metering Infrastructure (AMI) citywide and implement if determined feasible.	
4.I	Implement a policy that prohibits installation of non-functional turf in new commercial construction.	

Move ID #	Strategies and Respective Supporting Plays and Moves	Anticipated GHG Emissions Reduction (MT of CO <sub>2</sub> e) <sup>1</sup>
4.J	Streamline the permitting process for rainwater catchment, dual water piping and graywater systems.	
4.K	Adopt an ordinance requiring new construction to be built with dual plumbing, where allowable, in preparation for the availability of recycled water infrastructure.	
<b>Play 4.3: Enhance natural carbon sequestration capacity</b>		
4.L	Implement the City's Urban Forest Management Plan and continue to protect and greatly expand tree canopy.	Supportive
4.M	Implement the City's Green Stormwater Infrastructure Plan.	
<b>Play 4.4: Promote awareness of sustainable goods and services</b>		
4.N	Update the City purchasing policy to be aligned with Playbook goals and develop an implementation strategy.	Supportive
<b>Strategy 5: Empowering our Community</b>		
<b>Play 5.1: Enhance community awareness and engagement</b>		
5.A	Pilot a targeted grassroots community engagement strategy to create stronger connections between neighbors to advance climate action and emergency preparedness.	Supportive
5.B	Create a stronger social media and web presence for Sunnyvale climate action.	
5.C	Implement the Sustainability Speaker Series.	
5.D	Cultivate relationship between City and youth groups to engage students on climate, building on current engagement with school classrooms and green teams.	
5.E	Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.	
5.F	Create demonstration projects within City operations to educate the community on ways to reduce emissions.	
5.G	Continue to develop and implement educational programs at the Sunnyvale Public Library that focus on environmental and sustainability topics.	
<b>Play 5.2: Track and Share Data and Tools</b>		
5.H	Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).	Supportive
5.I	Publish annual GHG inventory.	
<b>Strategy 6: Adapting to a Changing Climate</b>		
<b>Play 6.1: Assess climate vulnerabilities for Sunnyvale</b>		
6.A	Participate in regional forums on climate vulnerability and adaptation.	Supportive
<b>Play 6.2: Protect shoreline area from sea level rise and coastal flooding</b>		
6.B	Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.	Supportive



Move ID #	Strategies and Respective Supporting Plays and Moves	Anticipated GHG Emissions Reduction (MT of CO <sub>2</sub> e) <sup>1</sup>
6.C	Develop strategies and projects to restore, protect and expand our tidal/salt marshes and natural water ways to the Bay using as much of the dredged materials from the Bay as possible.	
<b>Play 6.3: Strengthen community resiliency</b>		
6.D	Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.	Supportive
6.E	Develop a community resiliency plan.	
6.F	Implement a Resilience Hub Initiative.	
Notes: MT of CO <sub>2</sub> e = metric tons of carbon dioxide equivalent Strategy 5 entails administrative and community engagement actions that would not result in environmental impacts. Strategy 6 entails future climate adaptation planning efforts that cannot be assessed in terms of environmental impacts until specific policies, actions, and/or physical projects are identified; CEQA review would be required at that point. Source: Compiled by Rincon based on information contained in the Draft Sunnyvale Playbook Update/Game Plan 2028.		

The Plays and Moves shown in Table 2, combined with existing State legislation and City initiatives, would enable Sunnyvale to meet its GHG emissions reduction target pathway to reduce GHG emissions 56 percent below 1990 levels by 2030. Table 3 summarizes the communitywide GHG emissions forecasts under the BAU and ABAU scenarios, as well as with implementation of the Sunnyvale Playbook Update/Game Plan 2028, beginning from the 2019 through 2045.

**Table 3 Sunnyvale 2030 GHG Emissions Forecasts (MT of CO<sub>2</sub>e)**

GHG Emissions Pathways	2019	2025	2030	2035	2040	2045
BAU Forecast	716,382	841,327	931,298	1,029,366	1,138,832	1,259,700
Adjusted Forecast	716,382	790,257	833,092	886,784	960,795	1,052,263
Forecast with Playbook Update/Game Plan 2028	716,382	590,277	419,818	403,734	403,267	417,347
Source: Compiled from the Sunnyvale Draft Playbook Update/Game Plan 2028 and the Sunnyvale Playbook Update GHG Forecast Report						

Figure 4 depicts the 2030 and 2045 GHG emissions targets for Sunnyvale, including anticipated emissions once the Plays and Moves listed in Table 2 are implemented. Figure 4 also illustrates the forecasted BAU and ABAU emissions, and the target pathway to achieve carbon neutrality by 2045.

City of Sunnyvale  
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**Figure 4 Sunnyvale GHG Emissions Projections and Targets**

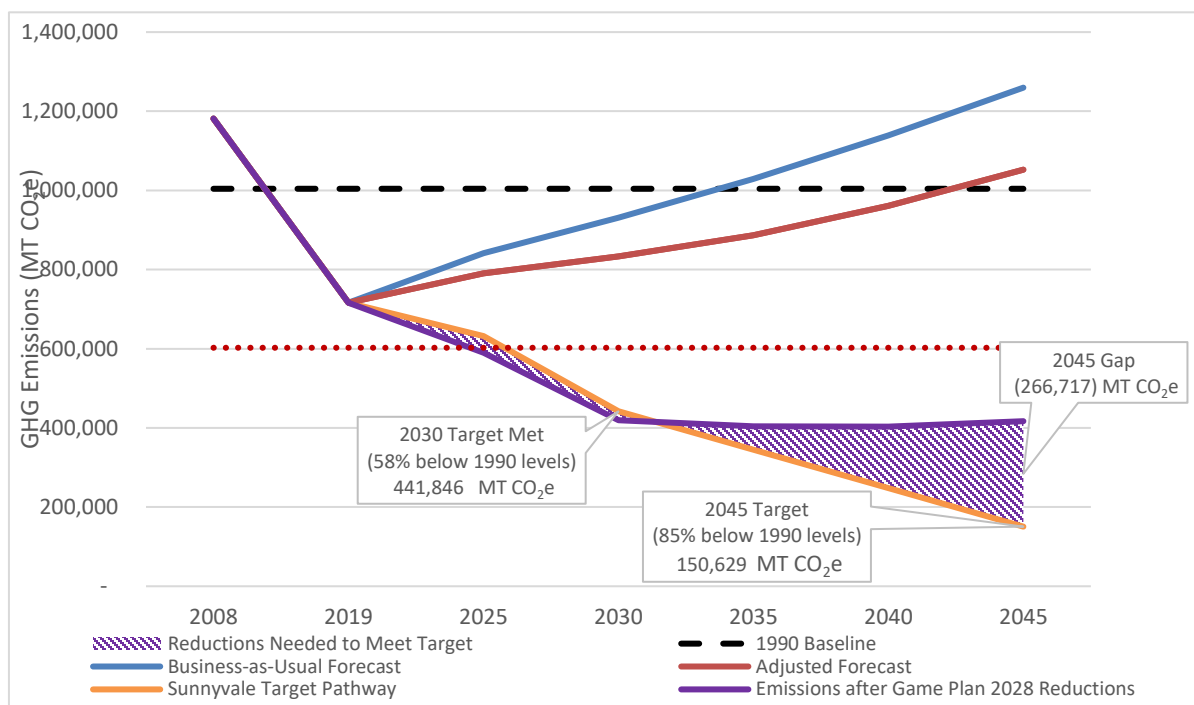


Table 4 shows the Sunnyvale climate action target emissions and the emissions reductions expected from implementing the Plays and Moves shown in Table 2. Table 4 also shows that Sunnyvale would meet its 2030 GHG reduction target and make substantial progress towards the 2045 goal of carbon neutrality.

**Table 4 Targets Versus GHG Reductions**

Target/Forecast	2030 GHG Emissions (MT of CO <sub>2</sub> e)	2045 GHG Emissions (MT of CO <sub>2</sub> e)
Adjusted Forecast	833,092	1,052,263
Sunnyvale Targets	441,846	150,629
GHG Reductions from Full Implementation of Plays and Moves	413,274	634,916
GHG Emissions after Measure Reductions (Adjusted Forecast – GHG Emissions Reductions)	419,818	417,347
Target Anticipated to be Met?	Yes	Substantial progress demonstrated

MT of CO<sub>2</sub>e = metric tons of carbon dioxide equivalent

Source: Compiled from the Sunnyvale Draft Playbook Update/Game Plan 2028 and the Sunnyvale Playbook Update GHG Forecast Report

The Playbook Update/Game Plan 2028 would provide substantial progress toward meeting the City's carbon neutrality goal by 2045 (85 percent emissions reduction from 1990 levels or 150,629 MT of CO<sub>2</sub>e). However, full implementation of the Sunnyvale Playbook Update/Game Plan 2028 would leave a gap of approximately 270,000 MT of CO<sub>2</sub>e that would still need to be addressed to achieve carbon neutrality. As such, the Sunnyvale Playbook Update/Game Plan 2028 acknowledges

that additional actions beyond those identified in the plan will be necessary to achieve carbon neutrality and, therefore, provides a mechanism for adopting new Game Plan updates every five years. This allows for certainty in the updated schedule, ensures that the carbon neutrality work is directly tied to the City's financial decision making and prioritization process and allows for constant integration of learning, best practices, and new measures and technologies to further the City toward meeting its goal of carbon neutrality.

Implementation of the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves identified in Table 2 could result in physical changes to the environment that could potentially have an impact on the environment. While individual projects resulting from these Plays and Moves have not been identified for the purposes of this document, the types of actions that could result from realization of the Plays and Moves are taken into account in considering potential environmental impacts that could occur through implementation of the Playbook Update/Game Plan 2028. For example, the use of carbon-free electricity may require the installation of new infrastructure to accommodate use and transmission of alternative and renewable fuels. Similarly, increasing the use of EVs would require the installation of EV charging stations and supporting infrastructure. Additionally, Sunnyvale Playbook Update/Game Plan 2028 implementation may require the installation of new bicycle or pedestrian facilities. These types of activities would introduce physical changes, such as the temporary presence and operation of construction vehicles and equipment during installation of required facilities, and the long-term presence of new facilities such as bike and pedestrian facilities, solar arrays, and EV charging stations, which could alter pedestrian and vehicular traffic patterns. Future plans or projects requiring discretionary approval would be subject to environmental review under CEQA, and individual impact analyses may identify required plan- or project-specific mitigation measures where applicable.

### **Sunnyvale CEQA GHG Emissions Thresholds**

In 2007, SB 97 acknowledged that climate change is an environmental issue that requires analysis in CEQA documents, and in 2010 the California Natural Resources Agency adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines gave lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. Specifically, Section 15183.5(b)(1)A-G of Title 14 of the California Code of Regulations was amended to state that a qualified GHG Reduction Plan, or a Climate Action Plan (CAP), may be used for tiering and streamlining the analysis of GHG emissions in subsequent CEQA project evaluation, provided that the GHG Reduction Plan or CAP does the following:

- Quantifies GHG emissions both existing and projected over a specific period of time, resulting from activities within a defined geographical area.
- Establishes 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.
- Identifies and analyzes the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.
- Specifies 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.
- Establishes a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.

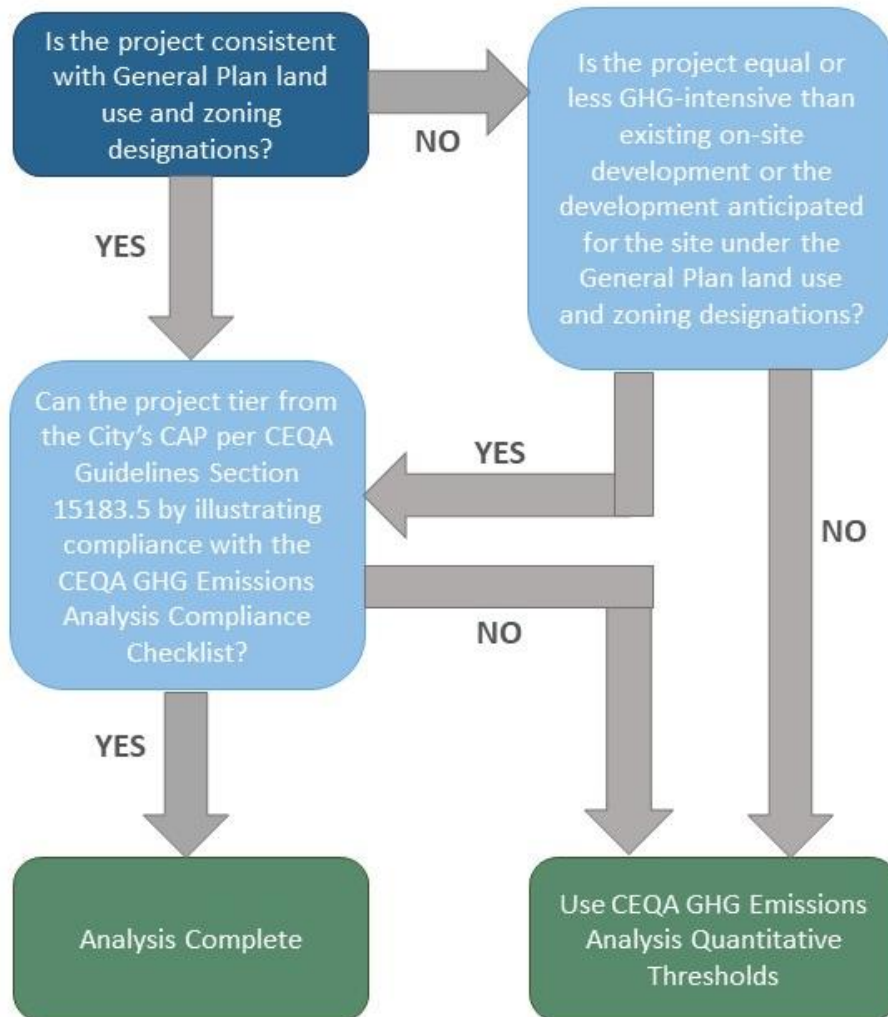
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- Be adopted in a public process following environmental review.

Therefore, the City of Sunnyvale proposes to also adopt quantitative efficiency thresholds for use in evaluating whether a plan or project's GHG emissions would result in a potentially significant environmental impact under CEQA for plans or projects with pre-2030 buildout or initial operation years. The CEQA GHG Emissions Thresholds would be applied to plans or projects that cannot tier from the environmental analysis for the Sunnyvale Playbook Update/Game Plan 2028 (as contained in this Initial Study- Negative Declaration [IS-ND]) due to one of the following circumstances, which are illustrated in Figure 5:

- The plan or project would not be consistent with the Sunnyvale General Plan land use and zoning designations for the project site and would result in greater GHG emissions than existing on-site development; or
- The plan or project would not be consistent with the CEQA GHG Emissions Analysis Compliance Checklist.

**Figure 5 Determining CEQA GHG Emissions Analysis Methodology**



These thresholds are set at the level of GHG emissions that new development would need to achieve to be consistent with the Sunnyvale Playbook Update/Game Plan 2028's communitywide emissions reduction target of 441,846 MT of CO<sub>2</sub>e by 2030. The efficiency thresholds, listed below, are expressed in terms of MT of CO<sub>2</sub>e per service person<sup>19</sup> and are applicable to plans or projects with pre-2030 buildout or initial operational years:

- 0.32 per resident
- 0.57 per employee
- 0.38 per service person<sup>20</sup>

Efficiency thresholds for beyond 2030 would be established later in conjunction with subsequent Play Book and Game Plan amendments.

Plans or projects that do not tier from the Sunnyvale Playbook Update/Game Plan 2028 IS-ND that would generate GHG emissions in excess of these thresholds would result in a potentially significant impact on the environment related to GHG emissions and climate change. Mitigation measures would be required to reduce potentially significant impacts resulting from such plans or projects. Plans or projects that are unable to reduce GHG emissions below these thresholds through implementation of identified mitigation measures would result in a significant and unavoidable environmental impact. The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to General Plan land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not have direct construction or operational impacts.

## Cumulative Projects Scenario

For purposes of CEQA cumulative impacts analysis of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds, the cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 and 2050. The cumulative projects scenario is shown in Table 7.

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<sup>19</sup> The service population is equal to the residential population plus half the number of jobs.

<sup>20</sup> Sunnyvale, City of. 2024. Draft CEQA GHG Thresholds.

**Table 5 Cumulative Projects Scenario**

Demographics/ Sector	2025	2030	2035	2040	2045	2050
Population <sup>1</sup>	201,140	231,502	266,446	306,666	352,957	406,235
Employment <sup>2</sup>	101,341	109,322	117,931	127,218	137,237	148,045
Households <sup>2</sup>	78,974	92,353	107,999	126,295	147,690	172,710
Service Population <sup>3</sup>	302,481	340,823	384,377	433,884	490,194	554,280

<sup>1</sup> Population estimates were calculated by applying Bay Area region growth factors from Play Bay Area 2050 to Sunnyvale's 2015 estimates from Play Bay Area 2040 (i.e., 2.63 people/household in 2015). Growth factors were calculated to represent the compound annual growth rate (i.e., -0.32% annual growth in people/household) from the modeled change in people per household in the Bay Area region between the years 2015 and 2050.

<sup>2</sup> Employment and household estimates were calculated by applying North Santa Clara County growth factors from Play Bay Area 2050 to Sunnyvale's 2015 estimates from Play Bay Area 2040 (i.e., 87,085 jobs in 2015 and 57,750 households in 2015). Growth factors were calculated to represent the compound annual growth rate (i.e., 1.53% annual growth in employment and 3.18% annual growth in households) from the modeled change in employment and households in North Santa Clara County between the years 2015 and 2050.

<sup>3</sup> Service population is calculated as the combined total number of employees and residents in the City.

Source: Rincon Consultants, Inc. Sunnyvale Playbook Update GHG Forecast Report. February 2023.

## Required Approvals

### City of Sunnyvale

Required approvals include:

- Adoption of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds IS-ND;
- Adoption of the Sunnyvale Playbook Update/Game Plan 2028; and
- Adoption of the Sunnyvale CEQA GHG Emissions Thresholds.

Although individual plans or projects may be implemented later under the umbrella of the Sunnyvale Playbook Update/Game Plan 2028, each individual plan or project would be subject to separate environmental review under CEQA.

### Other Public Agencies

The City of Sunnyvale has sole approval authority over the Sunnyvale Playbook Update/Game Plan 2028 as well as the Sunnyvale CEQA GHG Emissions Thresholds. There are no other public agencies whose approval is required.

## Environmental Factors Potentially Affected

## Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is “Potentially Significant” or “Less than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources      | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Energy                             |
| <input type="checkbox"/> Geology/Soils             | <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards & Hazardous Materials      |
| <input type="checkbox"/> Hydrology/Water Quality   | <input type="checkbox"/> Land Use/Planning                  | <input type="checkbox"/> Mineral Resources                  |
| <input type="checkbox"/> Noise                     | <input type="checkbox"/> Population/Housing                 | <input type="checkbox"/> Public Services                    |
| <input type="checkbox"/> Recreation                | <input type="checkbox"/> Transportation                     | <input type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire                           | <input type="checkbox"/> Mandatory Findings of Significance |

## Determination

Based on this initial evaluation:

- ☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a “potentially significant impact” or “less than significant with mitigation incorporated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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- ☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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Lead Agency Representative Signature

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Date

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Lead Agency Representative Printed Name

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Title



# Environmental Checklist

## 1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*a. Would the project have a substantial adverse effect on a scenic vista?*

According to the Sunnyvale General Plan Land Use and Transportation Element Draft Environmental Impact Report (EIR), Sunnyvale does not contain any designated scenic vistas or viewsheds.<sup>21</sup> As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to effects on a scenic vista.

*b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

According to the California Scenic Highway Mapping System, Interstate I-280, traversing the south border of Sunnyvale, is an eligible State scenic highway, but it is not officially designated.<sup>22</sup> There are no officially designated State scenic highways in Sunnyvale, and no portions of the City

<sup>21</sup> Sunnyvale, City of. 2016. Sunnyvale General Plan Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

<sup>22</sup> Caltrans. 2018. California State Scenic Highway System Map. <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca> (accessed December 2023).

encompass the viewshed from a State scenic highway.<sup>23</sup> The nearest designated State scenic highway is a portion of I-280 running from Alpine Road to Valleywood Drive, located approximately 7.5 miles west of Sunnyvale City limits at its closest point. Due to the distance between Sunnyvale and the nearest designated State scenic highway, as well as the developed nature of Sunnyvale and the surrounding communities, views of Sunnyvale from I-280 are not available. Additionally, the Sunnyvale General Plan Land Use and Transportation Element does not identify any local scenic roadways.<sup>24</sup> As such, implementation of the Playbook Update/Game Plan and CEQA GHG Emissions Thresholds could not result in impacts related to scenic resources within the viewshed from a State scenic highway. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to effects on scenic resources within a State scenic highway.

- c. *In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

According to the Sunnyvale General Plan Land Use and Transportation Element Draft Environmental Impact Report (EIR), Sunnyvale is 98 percent urbanized, surrounded by other cities, and has limited aesthetic resources. Within Sunnyvale, there are several visual landmarks, including Libby Water Tower, the Murphy Avenue Commercial District, and the cherry orchards on Mathilda Avenue, that comprise important local scenic attributes.<sup>25</sup> The Sunnyvale General Plan Community Character Element includes policies that require preservation of existing visual landmarks, as well as goals and policies that govern scenic quality within the City. These include the following:

- **Goal CC-1: Distinguished City Image:** Promote Sunnyvale's image by maintaining, enhancing and creating physical features, including functional and decorative art, which distinguish Sunnyvale from surrounding communities and by preserving historic buildings, special districts and residential neighborhoods which make the City unique.
- **Goal CC-3: Well-Designed Sites and Buildings:** Ensure that buildings and related site improvements for private development are well designed and compatible with surrounding properties and districts.
- **Policy CC-3.2:** Ensure site design is compatible with the natural and surrounding built environment.
- **Goal CC-3: Protection of Sunnyvale's Heritage:** To enhance, preserve, and protect Sunnyvale's heritage including natural features, the built environment, and significant artifacts.
- **Policy CC-5.1:** Preserve existing landmarks and cultural resources and their environmental settings.
- **Policy CC-5.2:** Enhance the visual character of the City by preserving diverse as well as harmonious architectural styles, reflecting various phases of the City's historical development and the cultural traditions of past and present residents.

<sup>23</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

<sup>24</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>25</sup> Sunnyvale, City of. 2016. Sunnyvale General Plan Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

Environmental Checklist  
**Aesthetics**

In addition, Sunnyvale has adopted a variety of design guidelines, including guidelines specifically for identified landmark and heritage areas such as the Murphy Station Heritage Landmark District Design Guidelines and the Taaffe Frances Heritage Neighborhood Design Guidelines.<sup>26</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in impacts related to visual character. As a policy and guidance document, the Sunnyvale Playbook Update/Game Plan 2028 does not propose specific development or changes to land use and zoning designations that would result in impacts to scenic vistas and visual character or conflict with City policies regulating scenic resources. However, implementation of some Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves may promote infrastructure development and other physical changes through policies and programs. Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 promote installation of small-scale solar photovoltaic (PV) systems, thermal energy systems, and battery energy storage systems to increase renewable energy generation and storage in Sunnyvale. Play 3.1 would encourage mixed-use development (as permitted by land use and zoning designations) within the City that could alter visual character via changes in building heights and designs. Additionally, Play 4.3 facilitates the expansion of the urban forest that could have a positive effect on the visual quality of the City by adding new tree cover.

While implementation of the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves may result in future Playbook Update/Game Plan projects that slightly alter the visual character of Sunnyvale, Sunnyvale Playbook Update/Game Plan 2028-related projects would generally be limited to the existing developed areas of Sunnyvale and would be small-scale in nature. In addition, Sunnyvale Playbook Update/Game Plan 2028-related projects and actions, including those identified above, would be required to adhere to City zoning and regulations that protect aesthetic resources, including the City design guidelines, Sunnyvale Municipal Code (SMC) Chapter 19.80, Design Review, and SMC Chapter 19.96, Heritage Sites, that establish the City's Design Review process and protections for heritage areas.<sup>27,28,29</sup> Compliance with the SMC and design guidelines would require that potential future infrastructure development and redevelopment related to the Sunnyvale Playbook Update/Game Plan 2028 would be carefully integrated with the existing character of the community, minimizing potential impacts related to visual character. In addition, Sunnyvale Playbook Update/Game Plan 2028 projects and actions would be reviewed for consistency with the Sunnyvale General Plan Community Character Element goals and policies related to scenic resources prior to approval to avoid lack of consistency with regulations established to protect scenic quality. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to visual character or scenic quality.

- d. *Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?*

Sunnyvale is an urbanized community and contains many existing sources of nighttime light and daytime glare including street and vehicle lighting, security lighting, interior and exterior building

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<sup>26</sup> Sunnyvale, City of. 2023. Design Guidelines, Standards, and Specific Plans. <https://www.sunnyvale.ca.gov/business-and-development/planning-and-building/permit-center/design-guidelines-standards-and-specific-plans> (accessed December 2023).

<sup>27</sup> *Ibid*

<sup>28</sup> Sunnyvale, City of. 2023. Sunnyvale Municipal Code Chapter 19.80. <https://ecode360.com/42732806#42732806> (accessed December 2023).

<sup>29</sup> Sunnyvale, City of. 2023. Sunnyvale Municipal Code Chapter 19.96. <https://ecode360.com/42733144#42733144> (accessed December 2023).

lighting, and reflective building materials. The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use or zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in impacts related to light and glare. The Sunnyvale Playbook Update/Game Plan 2028 would promote sustainable infrastructure development and redevelopment that is complimentary to existing land uses in the City. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would not directly result in impacts related to light and glare. However, implementation of Sunnyvale Playbook Update/Game Plan 2028 Play 1.2 promotes installation of small-scale solar PV systems to increase renewable energy generation in Sunnyvale. Solar panels have the potential to result in new sources of glare within Sunnyvale if not thoughtfully designed and located. The design and location of future solar infrastructure would be complimentary to existing development in Sunnyvale, such as the addition of small-scale rooftop solar panels that would reduce potential glare impacts. Furthermore, Sunnyvale Playbook Update/Game Plan 2028 projects would be reviewed for consistency with the CCR Title 24 lighting standards (CCR Title 24 Part 6), Sunnyvale design guidelines, which provide guidance on reducing light impacts and associated glare and design considerations to address glare, and SMC Section 19.42.050 regarding restrictions on lighting would require that lights, spotlights, floodlights, reflectors, and other means of illumination are shielded or equipped with special lenses in such a manner as to prevent any glare or direct illumination on a public street or other property.<sup>30, 31</sup> In addition, Sunnyvale Playbook Update/Game Plan 2028 projects or Moves would be reviewed for consistency with the Sunnyvale General Plan and other applicable aesthetic regulations prior to approval. Compliance with these regulations would minimize environmental impacts related to light and glare by requiring the shielding of exterior lighting and limiting the use of highly reflective materials, respectively. Thus, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to light and glare.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). Cumulative impacts related to scenic vistas and resources, visual character and scenic quality, and light and glare would generally be site-specific, and cumulative projects are not anticipated to contribute to cumulative aesthetic impacts with adherence to Sunnyvale General Plan policies, the SMC, and applicable Specific Plans and design guidelines. As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts. Because of the developed nature of Sunnyvale, future infrastructure projects under the Sunnyvale Playbook Update/Game Plan 2028, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, would not adversely impact the visual character of the community. In addition, cumulative projects would be required to comply with the City design review process, as applicable, and be reviewed against applicable Sunnyvale General Plan policies and design standards for design quality and compatibility with adjacent land uses. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant cumulative impact*** related to aesthetics.

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<sup>30</sup> *Ibid*

<sup>31</sup> Sunnyvale, City of. 2023. Sunnyvale Municipal Code Section 19.42.050. <https://ecode360.com/42730956> (accessed December 2023).

Environmental Checklist  
Agriculture and Forestry Resources

## 2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*
- b. *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*
- e.1. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

Sunnyvale is characterized primarily by urban and suburban development. Maps prepared pursuant to the Farmland Mapping and Monitoring Program primarily identify Sunnyvale as Urban and Built-up Land, and no Prime Farmland or Farmland of Statewide Importance is mapped within Sunnyvale; however, there are a few pockets of Unique Farmland located in the southern portions of

Sunnyvale.<sup>32</sup> Likewise, there are no Williamson Act contracts within Sunnyvale.<sup>33</sup> While Sunnyvale has some small pockets of remaining orchards zoned for nonagricultural uses, it does not contain any agricultural operations.

The Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves focus on electrification of buildings, improving active transportation, ZEV and public transit infrastructure, water conservation, reducing solid waste sent to landfills, increasing carbon sequestration through additional trees, and community engagement around climate change. Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would not involve projects or policies that would result in increased development or impacts related to conversion or loss of farmland. Additionally, the CEQA GHG Emissions Thresholds would provide guidance during CEQA review and do not propose development or changes to land use and zoning that could result in the loss of farmland or conflict with existing agricultural zoning. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to degradation of agricultural resources or conversion of agricultural land to non-agriculture uses, nor would there be a conflict with existing zoning, Sunnyvale General Plan land use designations, and Williamson Act Contracts.

- c. *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*
- d. *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*
- e.2. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use?*

Sunnyvale is entirely built-out and does not contain forest or timberland resources, and no parcels are zoned for Timberland Production. SMC Chapter 19.94 outlines policies, regulations, and standards to provide for tree preservation within the city. Additionally, Policy 14 and Actions 1 through 4 of the Sunnyvale Land Use and Transportation Element encourages the planting of large canopy trees and implementation of an Urban Forestry Plan, which illustrate the City's commitment to managing and preserving Sunnyvale's urban forest.<sup>34</sup>

The Sunnyvale Playbook Update/Game Plan 2028 aligns with the Sunnyvale General Plan by including Play 4.3 and Move 4.L, which seeks to facilitate the implementation of an urban forest master plan to increase the number of trees throughout Sunnyvale. The Sunnyvale Playbook Update/Game Plan 2028 does not include actions that would result in the loss of forest land or the conversion of forest land to non-forest use, nor would it conflict with or cause the rezoning of forest, timber land, or Timberland Production areas. Likewise, the CEQA GHG Emissions Thresholds would provide guidance during CEQA review and do not propose development or changes to land use and zoning that could result in the loss of forestland or conflict with existing zoning for forest uses. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions

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<sup>32</sup> California Department of Conservation. 2023. California Important Farmland Finder Map. <https://maps.conservation.ca.gov/dlrp/ciff/> (accessed December 2023).

<sup>33</sup> Santa Clara County. 2022. Williamson Act Properties. <https://sccplanning.maps.arcgis.com/apps/webappviewer/index.html?id=1f39e32b4c0644b0915354c3e59778ce> (accessed December 2023).

<sup>34</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

Environmental Checklist  
**Agriculture and Forestry Resources**

Thresholds would result in ***no impact*** related to degradation of forestry resources or conversion of forest land to non-forest uses, nor would there be a conflict with existing zoning.

**Cumulative Impacts**

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts. Future infrastructure projects under the Sunnyvale Playbook Update/Game Plan 2028, in combination with other cumulative projects that occur to accommodate Sunnyvale's population, employment, and housing growth could comply with Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 and Move 4.L to maintain an urban forest and plant additional trees throughout the City. Furthermore, as discussed above, the Sunnyvale Playbook Update/Game Plan 2028 would not include Plays or Moves that could impact agricultural or forestry resources. In addition, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning changes that could result in cumulative impacts related to conversion or loss of farmland or forest land. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no cumulative impact*** related to agricultural and forestry resources.

### 3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a. *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The federal Clean Air Act (CAA) governs air quality in the United States and is administered by the United States Environmental Protection Agency (U.S. EPA) at the federal level. Air quality in California is also governed by regulations under the California CAA, which is administered by CARB at the State level. At the regional and local levels, local air districts typically administer the federal and California CAA. As part of implementing the federal and California CAA, the U.S. EPA and CARB have established ambient air quality standards for major pollutants at thresholds intended to protect public health. Sunnyvale is located within the San Francisco Bay Area Air Basin (the Air Basin), which includes the nine Bay Area counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma. The Air Basin is under the jurisdiction of BAAQMD. As the local air quality management agency, BAAQMD is required to monitor air pollutant levels to ensure that State and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether or not the standards are met or exceeded, the Air Basin is classified as being in “attainment” or “nonattainment.” Under State law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-attainment. BAAQMD is in non-attainment for the State and federal ozone standards, the State and federal PM<sub>2.5</sub> (particulate matter up to 2.5 microns in size) standards, and the State PM<sub>10</sub> (particulate matter up to 10 microns in size) standards and is required to prepare a plan for improvement.<sup>35</sup> The sources, health effects, and typical controls associated with criteria pollutants are described in Appendix A.

<sup>35</sup> BAAQMD. 2017. Air Quality Standards and Attainment Status. <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status> (accessed December 2023).



The Bay Area 2017 Clean Air Plan provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the Clean Air Plan is to update the most recent ozone plan, the 2010 Clean Air Plan, to comply with State air quality planning requirements as codified in the California Health and Safety Code. Although steady progress has been made toward reducing ozone levels in the Bay Area, the region continues to be designated as non-attainment for both the one-hour and eight-hour State ozone standards as noted previously. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. Under these circumstances, State law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and reduce transport of ozone precursors to neighboring air basins.<sup>36</sup>

The Federal Clean Air Act Amendments (CAAA) mandate that states submit and implement a State Implementation Plan (SIP) for areas not meeting air quality standards. The SIP includes pollution control measures to demonstrate how the standards will be met through those measures. The SIP is established by incorporating measures established during the preparation of Air Quality Management Plans (AQMP) and adopted rules and regulations by each local Air Pollution Control District (APCD) and AQMD, which are submitted for approval to CARB and the U.S. EPA.<sup>37</sup> The goal of an AQMP is to reduce pollutant concentrations below the NAAQS through the implementation of air pollutant emissions controls.

The Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes or specific development. Rather the Sunnyvale Playbook Update/Game Plan 2028 would promote sustainable infrastructure development and redevelopment. Likewise, the CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves focus on increasing the use of renewable energy, building electrification, improving active transportation, ZEV and public transit infrastructure, increasing urban trees, and reducing waste production and water use. Implementation of Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves, such as those aimed at reducing VMT, electrifying vehicles, and reducing natural gas use through building electrification, would have co-benefits to air quality within the Air Basin. These Plays and Moves would help BAAQMD meet applicable air quality plan goals, and would generally reduce air pollutant concentrations. Although the purpose and intended effect of the Sunnyvale Playbook Update/Game Plan 2028 is to reduce GHG emissions generated in Sunnyvale to help reduce the effects of climate change, many of its Plays and Moves would also reduce criteria pollutant emissions. Specifically, Plays 2.1 through 2.3 involve reducing the use of natural gas through building electrification of new and existing buildings, thereby reducing criteria pollutants associated with building energy use. Plays 3.1 and 3.2 seek to improve active transportation and public transit facilities and programs in order to reduce VMT and increase the use of sustainable transportation options in Sunnyvale. In addition, Plays 3.3 and 3.4 would encourage the adoption of ZEVs and low-emissions off-road vehicles and equipment by enhancing EV infrastructure and phasing out gasoline- and diesel-powered off-road equipment. These energy- and transportation-related strategies would reduce air pollutant emissions as well as GHG emissions. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are consistent

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<sup>36</sup> BAAQMD. 2017. Final Clean Air Plan: Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan. <https://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans> (accessed December 2023).

<sup>37</sup> CARB. 2022. 2022 State Strategy for the State Implementation Plan. [https://www2.arb.ca.gov/sites/default/files/2022-08/2022\\_State\\_SIP\\_Strategy.pdf](https://www2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf) (accessed November 2023).

with the 2017 Clean Air Plan and would result in **no impact** related to a conflict with or obstruction of the applicable air quality plan.

- b. *Would the project 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?*

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to an increase of criteria pollutants. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would instead promote sustainable infrastructure development and redevelopment. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would not result in impacts related to criteria pollutants. However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 actions may promote construction activities that would temporarily generate criteria pollutants during the construction phase.

Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within Sunnyvale. Play 2.2 promotes electrification of existing residential, commercial, and municipal buildings that may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2 would encourage development of new bicycle and pedestrian infrastructure that may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Play 3.3 would incentivize or require the installation of new EV charging stations. In addition, Play 4.3 seeks to increase the number of trees throughout Sunnyvale that may require the use of construction equipment for the moving and placement of trees.

Construction-related air quality impacts are generally associated with fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to reactive organic gases that would be released during the drying phase upon application of architectural coatings. However, implementation of Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would not include large-scale construction and would involve temporary and short-term criteria pollutant emissions. As such, the Sunnyvale Playbook Update/Game Plan 2028 would result in low-level criteria pollutant emissions and negligible impacts related to air quality. Through the standard review process for new development or capital improvement projects, Sunnyvale Playbook Update/Game Plan 2028 projects would also be reviewed for consistency with BAAQMD air quality regulations and other applicable local, State, and federal regulations. Thus, the construction associated with implementation of the Sunnyvale Playbook Update/Game Plan 2028 would result in a less-than-significant impact related to net increase of criteria pollutants.

With respect to operational emissions, many of the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would have the secondary benefit of reducing criteria pollutant emissions, such as strategies aiming to increase reduce natural gas use, promote EVs, reduce on- and off-road gasoline fuel use, and reduce VMT. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would be beneficial by helping the City meet applicable air quality plan goals. Therefore, overall, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to criteria pollutant emissions.

- c. *Would the project expose sensitive receptors to substantial pollutant concentrations?*

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to exposure of sensitive receptors to substantial pollutant concentrations. Implementation of some of the Sunnyvale Playbook Update/Game Plan 2028 Plays, as described under *Response 3b.*, promotes infrastructure development and redevelopment that may result in temporary construction activities. Construction-related air quality impacts are generally associated with fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to reactive organic gases that would be released during the drying phase upon application of architectural coatings. However, implementation of Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would not include large-scale construction, and construction-related emissions would be temporary. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 could result in low-level toxic air contaminant emissions associated with construction.

While the Sunnyvale Playbook Update/Game Plan 2028 could result in construction-related impacts related to toxic air contaminants and exposure to sensitive receptors, Sunnyvale Playbook Update/Game Plan 2028 projects or actions would be reviewed for consistency with BAAQMD air quality regulations and other applicable local, State, and federal regulations through the standard development review process once project details and locations are known to minimize air pollutant exposure impacts. Thus, construction associated with implementation of the Sunnyvale Playbook Update/Game Plan 2028 is not expected to result in substantial emissions of toxic air contaminants and exposure to sensitive receptors. No operational toxic air contaminant emissions are anticipated with implementation of the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves. Therefore, overall, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to exposure of sensitive receptors to toxic air contaminants.

*d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

The CARB 2005 *Air Quality Land Use Handbook: A Community Health Perspective* identifies land uses associated with odor complaints which include: sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, auto body shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations.<sup>38</sup> The CEQA GHG Emissions Thresholds would provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to odors. The Sunnyvale Playbook Update/Game Plan 2028 includes Play 4.1, which seeks to reduce community landfilled organics by 75 percent by 2030. Moves associated with this play include implementing the organic waste diversion requirements of Senate Bill (SB) 1383, encouraging food waste diversion, and implementing edible food recovery programs. As such, the Sunnyvale Playbook Update/Game Plan 2028 could result in minor odors related to organic waste collection. However, green waste collection bins and compost application are not identified on the list of “Sources of Odor Complaints” (Table 1-4) as provided in the CARB *Air Quality Land Use Handbook* and would not be anticipated to result in other odors that would adversely affect a

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<sup>38</sup> CARB. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. <https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf> (accessed December 2023).

substantial number of people.<sup>39</sup> Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Thresholds would not facilitate development that could create odors, and there would be a ***less-than-significant impact*** related to odors exposure.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts. Sunnyvale Playbook Update/Game Plan 2028-related projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, could result in air pollutant emissions that exceed applicable BAAQMD thresholds or be inconsistent with the 2017 Clean Air Plan. However, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would have a less-than-significant contribution related to potential cumulative air quality impacts within the Air Basin and on sensitive receptors within Sunnyvale, given that the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in communitywide reduction of GHG emissions, energy use, single-occupancy vehicle travel, and associated air pollutant emissions and just temporary air pollutant emissions during infrastructure construction activities. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not result in adverse impacts related to contribution of criteria pollutants to the air basin or exposure of sensitive receptors to toxic air contaminants but rather result in co-benefits to air quality within the Air Basin. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to air quality.

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<sup>39</sup> *Ibid*

Environmental Checklist  
**Biological Resources**

# 4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

Sunnyvale is a primarily urbanized community with limited habitat to support special-status species. However, ruderal infill lots could support burrowing owl, Crotch's bumble bee, and Congdon's tarplant. Shoreline areas and wetlands in Sunnyvale may support protected shore birds and fish species, such as black skimmer, California least tern, California black rail, California Ridgway's rail, western snowy plover, steelhead, and longfin smelt. These special status species are afforded protection under the federal Endangered Species Act, California Endangered Species Act, and/or California Fish and Game Code (CFG). Additionally, urban parks, open space, and riparian areas could support nesting birds.<sup>40</sup> Active nests of all migratory birds, including raptors, are protected by State and federal law. Migratory and nesting birds are protected by Sections 3503, 3503.5, and 3513 of the California Fish and Game Code (CFG) and the Migratory Bird Treaty Act (MBTA), and may utilize trees, landscaping, and structures throughout Sunnyvale for nesting habitat. SMC Chapter 19.94 provides for the protection of trees within the City, and Policy LT-1.10 of the Land Use and Transportation Element illustrates the City's commitment to protecting biological resources.<sup>41,42</sup> The City also maintains Bird Safe Design Guidelines in reviewing the design of new structures in the city.<sup>43</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to special status species and their habitats. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes. Rather the Sunnyvale Playbook Update/Game Plan 2028 would address infrastructure development and programming to reduce GHG emissions and increase sustainable practices within Sunnyvale. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would not directly result in impacts related to wildlife species identified as candidate, sensitive, or special status. However, implementation of the following Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and redevelopment that have the potential to result in impacts to special status species through construction activities that could directly cause mortality or result in indirect impacts through loss of breeding, foraging, and nesting habitat. Nonetheless, as addressed below, with adherence to the requirements of federal Endangered Species Act, California Endangered Species Act, CFG, SMC, and Sunnyvale General Plan policies and actions, construction impacts would be minimized.

Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. Play 2.2 promotes electrification of existing residential, commercial, and municipal buildings, which may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2

<sup>40</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

<sup>41</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 19.94, Tree Preservation. <https://ecode360.com/42733058#:~:text=It%20is%20unlawful%20to%20damage,a%20protected%20tree%20removal%20permit.&text=%C2%A7%2019.94,-050%20Permits%20required> (accessed January 2024).

<sup>42</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>43</sup> Sunnyvale, City of. N.d. Bird-Safe Building Design Guidelines. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/1542/638273438333130000> (accessed May 2024).

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would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. In addition, Play 4.3 seeks to increase the number of trees throughout Sunnyvale, which may require the use of construction equipment for the moving and placement of trees. These Plays have the potential to disturb special-status species and nesting habitat for birds and raptors protected under the CFGC and the MBTA. However, construction activities for future Sunnyvale Playbook Update/Game Plan 2028 projects would be required to comply with the provisions of the CFGC and the MBTA that include requirements for nesting bird and roosting bat avoidance. Compliance with State and federal requirements for the protection of special-status species would be required for all future Sunnyvale Playbook Update/Game Plan 2028-related projects and would minimize the potential for impacts to biological resources.

Furthermore, the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would not conflict with the SMC or objectives and policies of the Sunnyvale General Plan related to wildlife but would rather be consistent with and promote those policies. Sunnyvale Playbook Update/Game Plan 2028 Plays involving infrastructure development or redevelopment would generally apply to the urbanized areas of the City, with little application to parks, open spaces area, or undeveloped portions of Sunnyvale where sensitive habitat and related species may be present. In addition, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 facilitates an increase in the tree canopy throughout Sunnyvale, and Move 6.C would restore, protect and expand tidal/salt marshes and natural water ways. This play and this move would help increase and improve habitat for special status species and migratory and nesting birds. As such, the Sunnyvale Playbook Update/Game Plan 2028 would not have a substantial adverse effect on candidate, threatened, or endangered wildlife species either directly through individual take or indirectly through species habitat modification. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to special-status wildlife species.

- b. Would the project 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*
- c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Sunnyvale contains wetlands, streams, shoreline, riparian areas, and other sensitive habitat in the areas adjacent to the San Francisco Bay and Stevens Creek, Calabazas Creek, and Moffett Channel.<sup>44</sup> Wetlands and other waters in Sunnyvale are protected by the federal Clean Water Act, the California Porter-Cologne Water Quality Control Act, and CFGC Section 1600 et seq., and are under the jurisdiction of the U.S. Army Corps of Engineers, the San Francisco Bay Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Federal and State regulations require avoidance of impacts to the extent feasible, as well as compensation for unavoidable losses of jurisdictional wetlands and waters and sensitive natural communities and riparian habitat. SMC Chapter 12.60 requires compliance with the Clean Water Act and the Porter-Cologne Water Quality Control Act.<sup>45</sup> In addition, Policies LT-1.10, LT-9.19, and LT-10.5 of the Land Use and Transportation

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<sup>44</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed May 2024).

<sup>45</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 12.60, Stormwater Management. <https://ecode360.com/42718251#42718251> (accessed January 2024).

Element describe the City's commitment to protection of wetlands, riparian areas, and other natural habitats within Sunnyvale.<sup>46</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to riparian, wetland, or other sensitive habitats. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning changes but would instead promote sustainable infrastructure development and redevelopment within urbanized areas of the City, with little application to parks, open spaces area, or other locations where riparian, wetland, and sensitive habitat is located. Furthermore, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 facilitates an increase in the tree canopy throughout Sunnyvale, and Move 6.C would restore, protect and expand tidal/salt marshes and natural water ways. This play and this move align with the Sunnyvale General Plan goals and policies related to the preservation of sensitive habitats.

In addition, future Sunnyvale Playbook Update/Game Plan 2028-related projects would be required to adhere to City development regulations and General Plan policies, including SMC Chapter 12.60 and General Plan Policies LT-1.10, LT-9.19, and LT-10.5, to limit the potential for project impacts related to biological resources. In addition, the location and details of future Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for consistency with applicable local, regional, and State regulations related to sensitive habitat prior to approval. Any future Playbook Update/Game Plan 2028-related projects that could affect sensitive habitat, streams, or wetlands would be required to comply with the requirements of the California Porter-Cologne Water Quality Control Act, and CFGC Section 1600 et seq. Compliance with these regulations would include obtaining the appropriate CDFW, U.S. Army Corps of Engineers, and/or Regional Water Quality Control Board permits and complying with any avoidance, minimization, and habitat restoration measures required by the applicable agencies. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to riparian habitat or sensitive natural communities, such as wetlands.

- d. *Would the project interfere substantially 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?*

Sunnyvale is largely developed and offers limited habitat to provide migratory wildlife corridors or wildlife nursery sites. Areas that may support wildlife movement are generally limited to the wetlands and open space areas along San Francisco Bay and the Baylands Park where development is not permitted. In addition, creek and waterway corridors within the City such as Stevens Creek, Calabazas Creek, and Moffett Channel may serve as wildlife corridors.<sup>47</sup> Policies LT-1.10, LT-9.19, and LT-10.5 of the Land Use and Transportation Element describe the City's commitment to protection of wetlands, rivers, and other natural habitats within Sunnyvale that may be utilized by wildlife for movement and nurseries.<sup>48</sup>

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<sup>46</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element.

<https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>47</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report.

<https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

<sup>48</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element.

<https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).



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The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to interference with species movement or wildlife nurseries. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would instead promote sustainable infrastructure development and redevelopment within urbanized areas of the City, with little application to the wetlands and baylands, open spaces area, creeks, or other locations where habitat supporting wildlife migration and nurseries may be present. Furthermore, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 facilitates an increase in the tree canopy throughout Sunnyvale, and Move 6.C would restore, protect and expand tidal/salt marshes and natural water ways. This play and this move align with the Sunnyvale General Plan policies related to the preservation of natural habitats, such as Policies LT-1.10, LT-9.19, and LT-10.5 that seek to preserve and enhance natural areas and habitat in Sunnyvale.

Future Sunnyvale Playbook Update/Game Plan 2028-related projects would be required to adhere to City development regulations and General Plan policies to limit the potential for project impacts related to biological resources, including wildlife movement corridors and nursery sites. In addition, the location and details of future Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for consistency with applicable local, regional, and State regulations related to sensitive habitat prior to approval. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Thresholds would result in a ***less-than-significant impact*** related to interference with wildlife migratory corridors or nursery sites.

- e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Sunnyvale maintains a Heritage Resources Inventory, which identifies several heritage tree locations. Chapter 19.94 of the SMC, also known as the Tree Preservation Ordinance, was established to regulate the protection, installation, removal and long term management of significantly sized trees on private and City-owned property, encourage the proper protection and maintenance of significantly sized trees, establish a review and permit procedure to assure the correct planting, maintenance, protection and removal of significant trees, and establish penalties for violation of its provisions.<sup>49</sup> Additionally, Policies LT-2.3 through LT-2.5 and LT-9.5 and LT-9.6 of the Land Use and Transportation Element would further protect and encourage the planting of trees within the City.<sup>50</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to biological resources. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning changes but would instead promote sustainable infrastructure development and redevelopment within urbanized areas of the City. The purpose and intended effect of the Sunnyvale Playbook Update/Game Plan 2028 is to reduce GHG emissions generated in Sunnyvale to help reduce the effects of climate change. Implementation of proposed Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would be beneficial by helping Sunnyvale meet applicable local policies and

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<sup>49</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 19.94, Tree Preservation. <https://ecode360.com/42733058#:~:text=It%20is%20unlawful%20to%20damage,a%20protected%20tree%20removal%20permit.&text=%C2%A7%2019.94.,-050%20Permits%20required> (accessed January 2024).

<sup>50</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

ordinances for protecting biological resources, including the SMC Chapter 19.94 and the General Plan policies related to tree protection and preservation. Specifically, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 facilitates the implementation of an urban forest master plan that would increase tree canopy throughout the City and Move 6.C would restore, protect and expand tidal/salt marshes and natural water ways to support a biodiverse ecology and protect the shoreline from sea level rise and coastal flooding. Future Sunnyvale Playbook Update/Game Plan 2028-related projects would also be required to comply with SMC Chapter 19.94 during any construction activities. As such, the Sunnyvale Playbook Update/Game Plan 2028 would not conflict with or obstruct implementation of the applicable policies for preserving biological resources, including protected trees, and would not affect the City's ability to attain goals and policies that protect biological resources. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to consistency with local biological resources protection policies.

- f. *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?*

No portion of Sunnyvale is currently subject to a habitat conservation plan or natural community conservation plan. The Santa Clara Valley Habitat Plan is a Natural Community Conservation Plan that applies to portions of Santa Clara County, but Sunnyvale is not included in the boundaries of that plan area.<sup>51,52</sup> Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to consistency with an adopted habitat or natural community conservation plan.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could lead to cumulative impacts. Implementation of Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, could result in impacts to biological resources during infrastructure and building construction. However, infrastructure development or redevelopment resulting from implementation of the Sunnyvale Playbook Update/Game Plan 2028 would be required to comply with applicable Sunnyvale General Plan policies, the SMC, and State and federal regulatory requirements regarding avoidance of special wildlife species and habitat. In addition, the Sunnyvale Playbook Update/Game Plan 2028 would not result in new building construction and contains actions that prioritize the preservation of trees and natural habitats. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant cumulative impact** related to biological resources.

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<sup>51</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

<sup>52</sup> California Department of Fish and Wildlife. 2024. NCCP Plan Summary- Santa Clara Valley Habitat Plan. <https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Santa-Clara> (accessed January 2024)

## 5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

The City maintains a Heritage Resources Inventory, which includes landmarks, trees, residential and commercial districts, and individual structures of local importance. Approximately 65 individual structures are listed as heritage resources, along with several heritage tree locations, and 11 properties are identified as local landmarks. In addition, Sunnyvale also contains two historical districts—the Taaffe-Frances Heritage Neighborhood (a residential district) and the Murphy Station Heritage Landmark District (a commercial district).<sup>53,54</sup> Sunnyvale General Plan Goal CC-5 and Policies CC-5.1 through CC-5.5, LT-1.10, and LT-2.5 illustrate the City's goals and policies related to the preservation of historical and cultural resources within Sunnyvale.<sup>55,56</sup> In addition, SMC Chapter 19.96 provides regulations for the protection of heritage resources within the City.<sup>57</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to historical resources. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would promote infrastructure development and redevelopment that would be complimentary to existing development. Sunnyvale Playbook Update/Game Plan 2028 projects would be required to comply with the applicable General Plan policies, including Policy CC-5.1, which aims to preserve existing landmarks and cultural resources

<sup>53</sup> Sunnyvale, City of. 2018. Heritage Resources Inventory. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/1556/637820850915270000> (accessed January 2024).

<sup>54</sup> Sunnyvale, City of. 2011. Community Character Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/598/637819113519200000> (accessed January 2024).

<sup>55</sup> *Ibid*

<sup>56</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>57</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 19.96, Heritage Preservation. <https://ecode360.com/42733144#42733144> (accessed January 2024).

and their environmental settings, and Policy CC-5.3, which seeks to identify and work to resolve conflicts between the preservation of historic resources and alternative land uses.<sup>58</sup> Future projects would also be required to comply with Chapter 19.96 of the SMC, which regulates development affecting historical and cultural resources within the City. Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for compliance with applicable local, regional, and State regulations regarding cultural resources and the Sunnyvale General Plan Land Use and Community Design Element to avoid adverse impacts related to historical resources. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to historical resources.

*b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

A number of recorded archaeological resources and sites exist within Sunnyvale, and there is the potential for undiscovered archaeological resources during construction activities within the City.<sup>59</sup> Policy CC-5.5 of the General Plan Community Character Element directs that archaeological resources should be protected whenever possible, and Action LT-1.10f of the Land Use and Transportation Element includes a requirement that projects halt all ground-disturbing activities when unusual amounts of shell or bone, isolated artifacts, or other similar features are discovered and retain an archaeologist to assess the finding and implement mitigation measures.<sup>60</sup> Additionally, Chapter 19.96 of the SMC aims to protect the City's historical and cultural resources.<sup>61</sup>

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to archaeological resources. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would promote infrastructure development and redevelopment that would generally be limited to previously developed and disturbed areas of the City where the presence of archaeological resources is unlikely. Nonetheless, there is a possibility for archaeological sites not previously recorded to be present in areas where Sunnyvale Playbook Update/Game Plan 2028 projects could occur. In particular, Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2, 1.3, 2.2, 3.2, and 4.3 may result in small-scale construction that could expose previously undiscovered archaeological resources during ground disturbing activities.

Future Sunnyvale Playbook Update/Game Plan 2028 projects would be located and designed strategically to reduce ground disturbance to the maximum extent possible. In addition, Sunnyvale Playbook Update/Game Plan 2028 projects would be reviewed for consistency with applicable local, regional, and State archaeological regulations prior to final siting and construction and would be required to comply with Policy CC-5.5 and Action LT-1.10f of the General Plan and Chapter 19.96 of the SMC. As such, archaeological resources would be protected, and impacts would be reduced to a minimal level. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG

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<sup>58</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed January 2024).

<sup>59</sup> *Ibid*

<sup>60</sup> Sunnyvale, City of. 2011. Sunnyvale General Plan Community Character Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/598/637819113519200000> (accessed January 2024).

<sup>61</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 19.96, Heritage Preservation. <https://ecode360.com/42733144#42733144> (accessed January 2024).

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Emissions Thresholds would result in a ***less-than-significant impact*** related to archaeological resources.

c. *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

There is a possibility of encountering unknown buried human remains throughout Sunnyvale. The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not have construction or operational impacts related to human remains. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would promote infrastructure development and redevelopment that would generally be limited to previously developed and disturbed areas of the City where the presence of human remains is unlikely. However, there is the potential for future Sunnyvale Playbook Update/Game Plan 2028-related projects to encounter unknown human remains during project construction activities. Future projects that occur in accordance with the Sunnyvale Playbook Update/Game Plan 2028 would be required to comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98 regulations related to burial findings, including notification, assessment, and treatment of burial sites. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to potential disturbance of human remains.

### **Cumulative Impacts**

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). Projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth would cumulatively increase the potential for adverse effects on historic and archaeological resources in Sunnyvale. As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts; however, the Sunnyvale Playbook Update/Game Plan 2028 could incrementally contribute to this cumulative effect through small-scale construction activities that could affect previously undiscovered cultural resources. Impacts related to historic and archaeological resources are generally site-specific. Accordingly, as required under applicable laws and regulations, potential impacts associated with future development in Sunnyvale, including Sunnyvale Playbook Update/Game Plan 2028-related projects, would be addressed on a project-by-project basis as project details and locations are determined. Future projects in Sunnyvale, including those associated with implementation of the Sunnyvale Playbook Update/Game Plan 2028, would be required to comply with the applicable General Plan policies and SMC Chapter 19.96, that require the identification and protection of sites and structures of historical, archaeological, and cultural significance in order to avoid impacts related to cultural resources. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to cultural resources.

## 6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

California is one of the lowest per-capita energy users in the United States, ranked 46th in the nation, due to its energy efficiency programs and mild climate.<sup>62</sup> California consumed 287,826 gigawatt-hours (GWh) of electricity and 23,421 million therms of natural gas in 2022.<sup>63,64</sup> The single largest end-use sector for energy consumption in California is transportation (37.8 percent), followed by industry (23.2 percent), residential (20.0 percent), and commercial (19.0 percent).<sup>65</sup> The City of Sunnyvale has demonstrated its commitment to energy efficiency and renewable energy through many efforts, as described in the *Existing Sustainability Setting* section above. The City has adopted CALGreen, pursuant to SMC Chapter 16.43, which requires efficiency measures to reduce energy use and provide energy reduction benefits. The City has also completed communitywide GHG emissions inventories starting in 2008 and has been updating the inventory regularly since 2014. In 2019, transportation was responsible for approximately 52 percent of total GHG emissions within the Sunnyvale community, followed by commercial/industrial gas, residential gas, off-road equipment, solid waste, commercial/industrial electricity, residential electricity, water and wastewater, and finally Caltrain. In 2017, Sunnyvale's electricity emissions declined due to receiving carbon-free electricity from Silicon Valley Clean Energy (SVCE).

The CEQA GHG Emissions Thresholds provide guidance during CEQA review and do not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to wasteful consumption of energy resources. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing climate action strategies to reduce communitywide GHG emissions. The

<sup>62</sup> U.S. Energy Information Administration (USEIA). 2023. "California - Profile Overview." <https://www.eia.gov/state/?sid=CA>. (accessed October 2023).

<sup>63</sup> CEC. 2023. Electricity Consumption by County. <http://www.ecdms.energy.ca.gov/elecbycounty.aspx> (accessed October 2023).

<sup>64</sup> CEC. 2023. Gas Consumption by County. <http://www.ecdms.energy.ca.gov/gasbycounty.aspx> (accessed October 2023).

<sup>65</sup> USEIA. 2023. "California - Profile Overview." <https://www.eia.gov/state/?sid=CA> (accessed October 2023).

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**Cultural Resources**

Sunnyvale Playbook Update/Game Plan 2028 would encourage energy efficiency and a transition away from natural gas use in existing and new residential and nonresidential building stock through Plays 2.1 through 2.3. The Sunnyvale Playbook Update/Game Plan 2028 would also incentivize increased use of renewable energy sources and renewable energy production and storage within Sunnyvale through Plays 1.1 through 1.3. Additionally, the Sunnyvale Playbook Update/Game Plan 2028 would reduce transportation-related energy consumption by increasing active transportation and public transit use, reducing VMT, and reducing the use of gasoline vehicles through Plays 3.1 through 3.4.

Implementation of some Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves, such as the installation of new active transportation infrastructure, would require small-scale construction. However, energy use for the construction of such projects would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of CCR Title 13 Sections 2449 and 2485, which would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency (U.S. EPA) Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. Furthermore, pursuant to the applicable regulatory requirements such as the 2022 CALGreen (CCR Title 24, Part 11), future infrastructure projects would comply with construction waste management practices to divert a minimum of 65 percent of construction and demolition debris pursuant to Chapter 16.74 of the SMC. These practices would result in efficient use of energy necessary to construct Sunnyvale Playbook Update/Game Plan 2028-related projects. Upon completion of construction for any Sunnyvale Playbook Update/Game Plan 2028-related infrastructure development and redevelopment, non-renewable energy use would be reduced by increasing renewable energy production and storage and reducing VMT within the City.

The purpose and intended effect of the Sunnyvale Playbook Update/Game Plan 2028 is to reduce GHG emissions generated within the Sunnyvale community to minimize the effects of climate change, including those emissions generated by energy demand and supply. The Sunnyvale Playbook Update/Game Plan 2028 would not result in the use of non-renewable resources in a wasteful or inefficient manner; rather, it would assist in reducing use of non-renewable energy resources and increasing the production of local renewable energy. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to the wasteful, inefficient, or unnecessary consumption of energy.

*b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Relevant plans and policies that aim to increase energy efficiency and the production of renewable energy include SB 1020, 2022 CALGreen (Title 24 Part 11), and 2022 California Building Energy Efficiency Standards (Title 24 Part 6). SB 1020 supports the reduction of GHG emissions from the electricity sector by accelerating the State RPS Program and requires electricity providers to increase procurement from eligible renewable energy resources to 90 percent of total retail sales by 2035, 95 percent by 2040, and 100 percent by 2045. CALGreen (Title 24 Part 11) institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. In addition, the California Building Energy Efficiency Standards (Title 24 Part 6) establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. CCR Title 24 (Parts 6 and 11) is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the

current Building Energy Efficiency Standards through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC.

Sunnyvale is part of the SVCE, a Joint Powers Agreement that provides electricity primarily from clean, renewable sources. Sunnyvale would continue to reduce its use of nonrenewable energy resources as the electricity and power resources generated by renewable sources provided by SVCE continues to increase to comply with State requirements through SB 1020. The Sunnyvale Playbook Update/Game Plan 2028 includes Plays and Moves to reduce non-renewable electricity use and increase production and storage of renewable energy, as discussed further below, and would, thus, align with the overall intent of SB 1020.

In addition, the City of Sunnyvale has adopted CALGreen (Title 24 Part 11) and the California Building Energy Efficiency Standards (Title 24 Part 6) pursuant to SMC Chapter 16.43, Green Building Code. Future Sunnyvale Playbook Update/Game Plan 2028-related projects would be required to demonstrate compliance with the CALGreen and California Building Energy Efficiency standards by implementing sustainability and energy efficiency measures such as high-efficiency lighting and HVAC systems, low-flow water fixtures, dual-paned windows, and water efficient landscaping and irrigation systems. Compliance with these regulations would minimize potential conflicts with adopted energy conservation plans.

As discussed under *Response 6a.*, Sunnyvale Playbook Update/Game Plan 2028 Plays 2.1 through 2.3 seek to decrease non-renewable energy consumption in new and existing buildings by requiring electrification, efficiency upgrades, and phasing out natural gas use. Additionally, Plays 1.1 through 1.3 would encourage the production, use, and storage of local renewable energy. These Plays are consistent with the goals and policies established by SB 1020, CALGreen, and the California Building Energy Efficiency Standards. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to consistency with State and local renewable energy and energy efficiency plans.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 would result in reduced use of non-renewable energy resources across the community by phasing out natural gas use, increasing the use of the SVCE, and reducing gasoline vehicle use. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 would also increase the production and storage of renewable energy within the City by incentivizing the inclusion of small-scale solar and battery storage projects. As Sunnyvale's population grows and development intensifies in the future, actions contained within the Sunnyvale Playbook Update/Game Plan 2028 would require that planned new development not related to the Sunnyvale Playbook Update/Game Plan 2028 is constructed to strict energy efficiency standards and that VMT is reduced. As the Sunnyvale Playbook Update/Game Plan 2028 would result in decreased non-renewable energy use and would align with existing plans and policies related to renewable energy and energy efficiency, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **no cumulative impact** related to energy.



Environmental Checklist  
**Geology and Soils****7 Geology and Soils**

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
- 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?
  - Strong seismic ground shaking?
  - Seismic-related ground failure, including liquefaction?
  - Landslides?

Sunnyvale is located in a seismically active region, and there are several active faults within the vicinity of Sunnyvale that could cause seismic-related impacts. Three active faults are located near Sunnyvale: the Hayward fault (11.7 miles east), the San Andreas fault (7.5 miles west), and the Monte Vista-Shannon fault (4.3 miles west). There are also three potentially active faults that traverse the City—the San Jose fault, the Stanford fault, and the Cascade fault that cross the City in a northwesterly-southeasterly direction.<sup>66</sup> There are no Alquist-Priolo Fault Zones within Sunnyvale.<sup>67</sup> However, the City could experience strong seismic ground shaking and seismic-related ground failure (e.g., liquefaction and settlement) from earthquakes on active faults located in and outside of the City. The northern half of Sunnyvale starting at roughly Washington Avenue and Central Expressway northward is considered susceptible to liquefaction. Additionally, Sunnyvale is underlain by young alluvial sediments that can be susceptible to settlement, and sediments located immediately adjacent to San Francisco Bay consisting of Bay muds are generally very susceptible to settlement.<sup>68</sup>

Although Sunnyvale is at risk of earthquake-induced ground shaking and associated hazards, the Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing Plays and Moves to reduce GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 does not propose habitable development or policies that could result in exposure of people to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides. Likewise, the CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to seismic- and landslide-related hazards.

- b. *Would the project result in substantial soil erosion or the loss of topsoil?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to substantial loss of topsoil.

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<sup>66</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed January 2024).

<sup>67</sup> California Geological Survey. 2023. Earthquake Zones of Required Investigation. <https://maps.conservation.ca.gov/cgs/EQZApp/app/> (accessed October 2023).

<sup>68</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed January 2024).

Environmental Checklist  
**Geology and Soils**

Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning designation changes but would promote sustainable infrastructure development. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would not directly require ground-disturbing activities. However, implementation of several Sunnyvale Playbook Update/Game Plan 2028 Plays may result in small-scale construction activities that could cause soil erosion or the loss of topsoil during construction. Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. Play 2.2 promotes electrification and energy efficiency upgrades for existing residential and commercial buildings, which may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2 would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Play 3.3 would incentivize or require the installation of new EV charging stations. In addition, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 seeks to plant additional trees throughout Sunnyvale. As such, the Sunnyvale Playbook Update/Game Plan 2028 could result in construction-related soil erosion and topsoil loss impacts associated with such installations and plantings.

Sunnyvale Playbook Update/Game Plan 2028 projects would be reviewed for consistency with local and State erosion and grading regulations prior to final siting and construction. The potential for Sunnyvale Playbook Update/Game Plan 2028 project construction activities involving soil disturbance to result in increased erosion and sediment transport by stormwater to surface waters would be minimized through compliance with CBC Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion.

Additionally, any development involving clearing, grading, or excavation that causes soil disturbance of 1 or more acres would be required to prepare and comply with a stormwater pollution prevention plan (SWPPP) that provides a schedule for the implementation and maintenance of erosion control measures and a description of applicable erosion control practices, including appropriate design details and a time schedule. Future projects would also be required to comply with SMC Chapter 12.60, which establishes local requirements for stormwater management and Section 18.12.110, which specifies that when grading would create a nuisance or hazard to other properties, public ways, or public facilities due to erosion from storm runoff or rainfall, no grading may commence or continue without specific consent in writing from the Director of Public Works or the Director of Community Development.<sup>69,70</sup> The City's grading regulations would require public and private development projects to include control measures for erosion and sediment control as well as permanent features to minimize stormwater pollution. The City's current development review process also requires construction projects to obtain required permits and that on-site regional control measures are considered for new development projects.<sup>71</sup> Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to soil erosion and loss of topsoil.

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<sup>69</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 12.60, Stormwater Management. <https://ecode360.com/42718154#42718154> (accessed February 2024).

<sup>70</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 18.12.100, Grading. <https://ecode360.com/42728788?highlight=&searchId=16481596759239067#42728788> (accessed February 2024).

<sup>71</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed January 2024).

- c. *Would the project be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*
- d. *Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial risks to life or property?*

The northern half of Sunnyvale starting at roughly Washington Avenue and Central Expressway northward is considered susceptible to liquefaction. The liquefaction probability for Sunnyvale is between 0 and 10 percent. Additionally, surficial soils in Sunnyvale are largely composed of expansive clays. Bay mud and clayey alluvium located generally in the northern half of Sunnyvale have the potential for expansive movement. However, locally expansive soils may occur wherever clayey soils exist.<sup>72</sup> The City requires new development to prepare geotechnical soils reports pursuant to SMC Section 18.20.100 in order to improve the structural safety of buildings in areas of Sunnyvale with unstable soils. The resulting report recommended mitigation techniques for site-specific expansive soil conditions, compressive (settlement) soil conditions, and seismic hazards such as strong ground motion and liquefaction are required to be implemented by projects.<sup>73</sup> Future projects would also be required to comply with SMC Chapter 16.16, which adopts the CBC and includes common engineering practices requiring special design and construction methods that minimize potential expansive soil-related impacts.<sup>74</sup>

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to project location on an unstable geologic unit or soil. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 is a policy document that does not propose specific development or land use designation changes. Some of the proposed Plays and Moves in the Sunnyvale Playbook Update/Game Plan 2028 would support small-scale construction projects as discussed under *Response 7b.*, such as new solar panels and EV charging stations. However, Sunnyvale Playbook Update/Game Plan 2028 projects and actions would be reviewed for consistency with local and State geotechnical regulations prior to final siting and construction. In addition, new structures would be required to comply with SMC Section 18.20.100 and Chapter 16.16 to address applicable unstable soil conditions. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to risks associated with unstable geologic units or soils.

- e. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not involve the development of habitable structures and, thus, no use of septic tanks or alternative wastewater disposal systems would be required. Therefore, **no impact** would occur related to soil capability support of alternative wastewater disposal systems.

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<sup>72</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (Accessed January 2024).

<sup>73</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 18.20.100, Final or parcel map—Action before filing. <https://ecode360.com/42728788?highlight=&searchId=16481596759239067#42728788> (accessed February 2024).

<sup>74</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 16.16, Building Code. <https://ecode360.com/42720766?highlight=&searchId=16482460774455457#42720766> (accessed February 2024).

*f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Sunnyvale's underlying geology consists of basin and alluvial deposits that have the potential to contain fossils, based on previously reported finds in similar materials in other locations in the Bay Area. Because Sunnyvale is largely developed, it is likely there has been a substantial amount of ground disturbance and placement of fill that has altered the subsurface soils and underlying geologic materials at varying depths. However, if a large area were excavated to depths greater than 10 feet, it is possible the excavation could be within Holocene-age deposits or older Pleistocene alluvial materials that could contain fossils.<sup>75</sup> Policy LT-1.10 of the General Plan Land Use and Transportation Element establishes the City's commitment to the protection of the natural and human environment in Sunnyvale, and Action LT-1.10f requires work stoppage during construction of projects if archaeological or paleontological resources are discovered, investigation by a qualified professional, and implementation of measures to protect the resource.<sup>76</sup>

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to paleontological resources. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning changes but would instead promote infrastructure development and redevelopment primarily within previously developed areas of the City. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would not directly result in impacts related to paleontological resources or unique geologic features. Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves that would involve construction activities, such as those related to building electrification retrofits (Play 2.2) and EV charging infrastructure (Play 3.3), would involve work within existing, previously graded and disturbed areas where the likelihood of encountering intact and previously undiscovered paleontological resources would be minimal. In general, Sunnyvale Playbook Update/Game Plan 2028 projects would be located and designed to reduce ground disturbance to the maximum extent possible. Nonetheless, there is a possibility that small-scale construction projects may expose paleontological resources during ground-disturbing activities. To reduce such risks, future Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for consistency with geotechnical and paleontological policies and regulations prior to final siting and construction, including General Plan Action LT-1.10f. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to paleontological resources or unique geologic features.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts. Future Sunnyvale Playbook Update/Game Plan 2028-related projects, in combination with other cumulative projects that occur to accommodate the City's anticipated population, employment, and housing growth, could expose additional people

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<sup>75</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed January 2024).

<sup>76</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

and property to the seismic and geologic hazards that are present in the region. The magnitude of geologic hazards for individual projects, including those associated with implementation of the Sunnyvale Playbook Update/Game Plan 2028, would depend upon the location, type, and size of development and the specific hazards associated with individual sites. Specific geologic hazards associated with individual project sites would be limited to those sites without affecting other areas. Similarly, potential impacts related to paleontological resources associated with each individual site would be limited to that site without affecting other areas, and impacts related to these resources would be minimized on a project-by-project basis. Furthermore, compliance with existing regulations, including CBC requirements, City-issued permit requirements, the Sunnyvale General Plan, the CMC, and/or Construction General Permit requirements, would minimize potential cumulative seismic and geologic hazard impacts. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to geology and soils.

## 8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with any applicable plan, policy, or regulation adopted to reduce the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

The greenhouse effect is a natural occurrence that helps regulate the temperature of the Earth. The majority of radiation from the sun hits Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions. This process is essential to support life on Earth, because it warms the planet by approximately 60°F. Emissions from human activities since the beginning of the industrial revolution (approximately 270 years ago) have been adding to the natural greenhouse effect by resulting in increased gases in the atmosphere that trap heat and contribute to an average increase in Earth's temperature. Global warming is the observed increase in the average temperature of the Earth's surface, and climate change is the resultant change in wind patterns, precipitation, and storms over an extended period.

GHGs produced by human activities include CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride, hydrofluorocarbons, and perfluorinated compounds. Combustion of fossil fuels (gasoline, natural gas, and coal), deforestation, and decomposition of waste release carbon into the atmosphere that had been locked underground and stored in oil, gas, and other hydrocarbon deposits or in the biomass of surface vegetation. Since 1750, estimated concentrations of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in the atmosphere have increased by over 36 percent, 148 percent, and 18 percent respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition.

Changes to the land surface also indirectly affect the atmosphere by changing the way in which Earth absorbs gases from the atmosphere. Potential impacts in California due to climate change include sea level rise, more extreme-heat days and high-ozone days, larger and more frequent forest fires, and more frequent and severe drought years.<sup>77</sup> Although GHG emissions do not

<sup>77</sup> CARB and California Environmental Protection Agency (CalEPA). 2009. Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature. [https://www.researchgate.net/profile/Seth-Shonkoff/publication/237420289\\_ENVIRONMENTAL\\_HEALTH\\_AND\\_EQUITY\\_IMPACTS\\_FROM\\_CLIMATE\\_CHANGE\\_AND\\_MITIGATION\\_POLICIES\\_IN\\_CALIFORNIA\\_A\\_REVIEW\\_OF\\_THE\\_LITERATURE/links/0deec533acf69321ea000000/ENVIRONMENTAL-HEALTH-AND-EQUITY-](https://www.researchgate.net/profile/Seth-Shonkoff/publication/237420289_ENVIRONMENTAL_HEALTH_AND_EQUITY_IMPACTS_FROM_CLIMATE_CHANGE_AND_MITIGATION_POLICIES_IN_CALIFORNIA_A_REVIEW_OF_THE_LITERATURE/links/0deec533acf69321ea000000/ENVIRONMENTAL-HEALTH-AND-EQUITY-)

typically cause direct health impacts at a local level, GHG emissions can result in indirect health impacts by contributing to climate change, which can have public health implications. The primary public health impacts of climate change include the following:

- Increased incidences of hospitalization and deaths due to increased incidences of extreme heat events;
- Increased incidences of health impacts related to ground-level ozone pollution due to increased average temperatures that facilitate ozone formation;
- Increased incidences of respiratory illnesses from wildfire smoke due to increased incidences of wildfires;
- Increased vector-borne diseases due to the growing extent of warm climates; and
- Increased stress and mental trauma due to extreme events and disasters, economic disruptions, and residential displacement.<sup>78</sup>

Sunnyvale has completed a communitywide GHG emissions inventory for 2019, which is summarized in Table 1. In 2019, communitywide GHG emissions totaled 716,382 MT of CO<sub>2</sub>e, with the transportation sector contributing approximately 52 percent of overall GHG emissions, followed by nonresidential and residential energy use. Under the business-as-usual scenario, communitywide GHG emissions are forecasted to increase to approximately 931,298 MT of CO<sub>2</sub>e by the year 2030 and 1,259,700 MT of CO<sub>2</sub>e by the year 2045. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 alongside State laws and programs would reduce annual communitywide GHG emissions to approximately 419,818 MT of CO<sub>2</sub>e by the year 2030 and 417,347 MT of CO<sub>2</sub>e by the year 2045.

The Plays and Moves included in the Sunnyvale Playbook Update/Game Plan 2028 combined with Statewide legislation and initiatives would enable the City of Sunnyvale to meet its target of reducing communitywide GHG emissions output to 56 percent below 1990 levels by 2030, which exceeds the State target of 40 percent below 1990 levels by 2030 pursuant to SB 32. Because SB 32 is considered an interim target toward meeting the 2045 State goal of carbon neutrality, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would be considered substantial progress toward meeting the State long-term 2045 goal. Avoiding interference with, and making substantial progress toward, these long-term State targets is important, because these targets have been set at levels that achieve California's fair share of international emissions reduction targets that will stabilize global climate change effects and help avoid the associated adverse environmental consequences.

The Sunnyvale Playbook Update/Game Plan 2028 includes Strategies, Plays, and associated Moves intended to reduce communitywide GHG emissions in terms of the building energy, transportation, waste/water, and carbon sequestration sectors. The Playbook/Game Plan also includes strategies related to community engagement and climate adaptation. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 would result in the reduction of communitywide operational GHG emissions, while only generating temporary GHG emissions during construction of infrastructure such as EV charging stations and building energy efficiency upgrades. Additionally, the Sunnyvale Playbook Update/Game Plan 2028 would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include

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IMPACTS-FROM-CLIMATE-CHANGE-AND-MITIGATION-POLICIES-IN-CALIFORNIA-A-REVIEW-OF-THE-LITERATURE.pdf (accessed February 2024).

<sup>78</sup> State of California. 2019. California's Fourth Climate Change Assessment Statewide Summary Report. <http://www.climateassessment.ca.gov/state/> (accessed February 2024).



Environmental Checklist  
**Greenhouse Gas Emissions**

reduction in building energy consumption, vehicle miles traveled (and thus air pollution), solid waste generation, and water consumption. The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning and, thus, would not result in construction or operational impacts related to GHG emissions. The CEQA GHG Emissions Thresholds would establish GHG emissions targets and analysis methodologies consistent with the goals established by the Sunnyvale Playbook Update/Game Plan 2028 that are enforced during CEQA review with the intention of reducing GHG emissions associated with construction and operation of future projects and plans in Sunnyvale. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to generation of GHG emissions.

*b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The CARB 2022 Climate Change Scoping Plan outlines a pathway for achieving the 2045 carbon neutrality goal established by AB 1279. The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy-level documents that establish policies to reduce GHG emissions within Sunnyvale in an effort to comply with State regulations. As discussed under *Response 8a*, the Sunnyvale Playbook Update/Game Plan 2028 includes Plays and Moves that would reduce Sunnyvale GHG emissions from forecasted BAU annual levels to approximately 419,818 MT of CO<sub>2</sub>e by 2030. The purpose of the Sunnyvale Playbook Update/Game Plan 2028 is to meet Sunnyvale's proportionate fair share of the Statewide GHG emissions reduction target set by SB 32 and work toward the State's longer-term target of carbon neutrality identified by the 2022 Scoping Plan and AB 1279.

The Sunnyvale Playbook Update/Game Plan 2028 would not conflict with any applicable GHG reduction plans, including the CARB 2022 Climate Change Scoping Plan. The Sunnyvale Playbook Update/Game Plan 2028 identifies how the City would achieve consistency with the Statewide GHG emissions reduction goals. The Sunnyvale Playbook Update/Game Plan 2028 would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include reduction in building energy consumption, VMT (and thus air pollution), solid waste generation, and water consumption. Likewise, the CEQA GHG Emissions Thresholds would establish GHG emissions targets and analysis methodologies consistent with the Sunnyvale Playbook Update/Game Plan 2028 and would be enforced during CEQA review with the intention of reducing GHG emissions associated with construction and operation of future projects and plans in the City. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to consistency with applicable GHG emissions reduction plans, policies, and regulations.

## **Cumulative Impacts**

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). Analyses of GHG emissions and climate change are cumulative in nature, as they affect the accumulation of GHG emissions in the atmosphere. Cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth and that exceed the proposed CEQA GHG Emissions Thresholds would have a significant impact related to GHG emissions and climate change, both individually and cumulatively. The Sunnyvale Playbook Update/Game Plan 2028 creates a GHG emissions reduction strategy (consistent with Section 15183.5 of the CEQA Guidelines) for

**Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds**

Sunnyvale. The Sunnyvale Playbook Update/Game Plan 2028 also includes a series of Plays and Moves that are intended to reduce communitywide GHG emissions by approximately 56 percent below 1990 levels by 2030 and that provides substantial progress toward Sunnyvale meeting State carbon neutrality goals by 2045. As such, the Sunnyvale Playbook Update/Game Plan 2028 would result in the reduction of GHG emissions rather than generating GHG emissions. Some GHG emissions would occur during future construction of Sunnyvale Playbook Update/Game Plan 2028-related infrastructure projects; however, these emissions would be temporary and minor in nature. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Thresholds would result in a ***less-than-significant cumulative impact*** related to GHG emissions.

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Hazards and Hazardous Materials

# 9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*
- b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to hazardous materials. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing Plays and Moves to reduce GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 does not involve identified site-specific development and, for the most part, would not facilitate new development that would involve the routine use of hazardous materials. Implementation of some of the Sunnyvale Playbook Update/Game Plan 2028 actions, such as building electrification and energy efficiency retrofits and installation of EV charging stations, would require construction activities. Construction would involve the temporary use of hazardous materials such as vehicle fuels and fluids that could be released should an accidental leak or spill occur. However, these types of materials are not considered acutely hazardous, and storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control, U.S. EPA, and Occupational Safety & Health Administration. In addition, standard construction BMPs for the use and handling of such materials would avoid or reduce the potential for such conditions to occur. Any use of potentially hazardous materials during construction of projects would comply with all local, State, and federal regulations regarding the handling of potentially hazardous materials, including Title 49 of the Code of Federal Regulations and Title 22, Division 4.5 of the CCR. Risk of spills would cease after construction is completed. Thus, construction activities related to Sunnyvale Playbook Update/Game Plan 2028 actions would not be anticipated to create upset and accident conditions involving the release of hazardous materials, and operation of the majority of Sunnyvale Playbook Update/Game Plan 2028-related projects would not involve the routine transport, use, or disposal of hazardous materials during operation.

Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 emphasize increasing local renewable energy production and battery energy storage facilities within the City. Lithium-ion batteries, the typical battery technology used in battery storage systems, may pose a risk of upset and accidental release of hazardous chemicals contained within the batteries (e.g., in the event of a fire). Lithium-ion technology is a common battery storage medium and is considered one of the safest and most efficient methods of energy storage on the market. During normal operation, lithium-ion batteries do not represent a risk to off-site receptors, and safety standards applicable to energy storage facilities and safety certification tests established by independent bodies, such as Underwriters Laboratories, National Fire Protection Association, and International Electrotechnical Commission would prevent any reasonable possibility of a substantial adverse effect on the environment related to the lithium-ion batteries. However, in the unlikely event of a fire, there is a risk of the accidental release of hazardous materials associated with renewable energy systems. Future proposed battery energy storage facilities would, thus, be carefully reviewed for appropriate locations, safety measures, and consistency with the Sunnyvale General Plan, SMC, and applicable local, State, and federal regulations. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to creation of a significant hazard through the routine transport, use, or disposal of hazardous

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Hazards and Hazardous Materials

materials and reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

- c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to handling hazardous materials in the vicinity of schools. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing Plays and Moves to reduce GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 does not include site-specific proposals and development. Implementing some Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves may require future development or improvements, such as EV charging stations and building improvements related to energy efficiency. However, Sunnyvale Playbook Update/Game Plan 2028 projects would be reviewed to confirm the appropriate location of projects in relation to existing development in the City and would be reviewed for consistency with the Sunnyvale General Plan, SMC, and applicable local, State, and federal regulations. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to handling of hazardous materials within 0.25 mile of schools.

- d. *Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to project site location on a site listed on a hazardous material site. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing Plays and Moves to reduce GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 does not include site-specific proposals or non-infrastructure development, but certain Plays and Moves could result in projects that could be located on listed hazardous materials sites. However, Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for consistency with the Sunnyvale General Plan and SMC and would be required to comply with applicable local, State, and federal regulations related to hazardous materials sites. In addition, future Sunnyvale Playbook Update/Game Plan 2028 projects would be required to comply with applicable local, State, and federal regulations pertaining to hazardous materials, such as those discussed under *Response 9a*. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Thresholds would result in a ***less-than-significant impact*** related to location on a listed hazardous materials site.

- e. *For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

Sunnyvale does not contain any airports. The nearest airport to Sunnyvale is the Moffett Federal Airfield, located immediately west of the City's northern limits. Although Moffett Federal Airfield is located adjacent to the City, the CEQA GHG Emissions Thresholds and Sunnyvale Playbook Update/Game Plan 2028 are policy documents that would not increase airport activity or result in additional habitable development or commercial development that could increase potential

exposure of residents and employees to aircraft-related hazards. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to risks associated with location proximate to a public airport.

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy documents intended to reduce GHG emissions. The proposed Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds do not involve site-specific development, nor would they facilitate new development that would interfere with adopted emergency plans. Implementation of some Sunnyvale Playbook Update/Game Plan 2028 Plays, such as Play 3.2, which would provide for the addition of new bicycle and pedestrian infrastructure, may involve construction within a local right-of-way. Construction activities have the potential to require lane closures and may impact traffic and vehicle speeds on the affected roadways; however, these impacts would be temporary and access to roadways would be maintained throughout project construction. Furthermore, future projects involving work in a public right-of-way would be required to coordinate with the City to ensure appropriate construction staging and adequate vehicular and pedestrian access on adjacent roadways, pursuant to SMC Chapter 13.08.<sup>79</sup> Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to impairment or interference with implementation of an emergency response or evacuation plan.

- g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

According to the Santa Clara Operational Area Hazard Mitigation Plan- Sunnyvale Annex, Sunnyvale is urbanized and is categorized as having no risk of wildland fire.<sup>80</sup> The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds do not propose specific development or new residential or commercial land uses that could be subject to wildland fire, nor would they result other physical changes to the environment that could increase the risk of a wildland fire. Therefore, the Update and CEQA GHG Emissions Thresholds would result in **no impact** related to risks associated with exposure to wildland fires.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts related to hazardous materials and hazards. Hazards and hazardous materials impacts are typically site-specific in nature. Future Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, are not anticipated to contribute to cumulative hazards and hazardous materials impacts with adherence to

<sup>79</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 13.08, Right-of-Way Encroachments. <https://ecode360.com/42719687?highlight=encroachments&searchId=16491543957131113#42719687> (accessed February 2024).

<sup>80</sup> County of Santa Clara. 2017. Santa Clara Operational Area Hazard Mitigation Plan; Volume 2—Partner Annexes. <https://sunnyvaleca.legistar.com/LegislationDetail.aspx?ID=3216998&GUID=7E0A85F2-3134-4300-B6FC-DF5ACC14A82C&FullText=1> (accessed February 2024).

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**Hazards and Hazardous Materials**

applicable Sunnyvale General Plan policies, SMC requirements, and State and federal regulatory requirements. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to hazards and hazardous materials.

# 10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(i) Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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- a. *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

The CEQA GHG Emissions Thresholds is a guidance document as does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to water quality standards. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing actions intended to reduce GHG emissions within the City and does not propose specific development or land use designation changes. Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. Play 2.2 promotes electrification and energy efficiency upgrades for existing residential and commercial buildings, which may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2 would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Play 3.3 would incentivize or require the installation of new EV charging stations. In addition, Play 4.3 seeks to plant additional trees throughout Sunnyvale. These Plays may result in small scale construction activities in the future that could result in temporary water quality impacts due to soil erosion and ground disturbance, as further discussed under *Response 10c* and in Section 7, *Geology and Soils*.

However, Sunnyvale Playbook Update/Game Plan 2028 projects would be reviewed for consistency with local and State regulations, including the NPDES permitting program that requires implementation of SWPPPs and SMC Chapter 12.60 and Section 18.12.100 that regulate stormwater management and grading and include erosion, pollution, and sediment control standards.<sup>81,82</sup> These regulations require BMPs to reduce water quality impacts from construction activities. Compliance with the SMC and/or NPDES permitting program would require that BMPs are implemented during construction to minimize potential impacts to surface and groundwater quality. As such, the Sunnyvale Playbook Update/Game Plan 2028's related infrastructure and retrofit projects would not result in new or different waste discharge that would violate water quality standards, waste discharge requirements, or otherwise degrade surface or groundwater quality. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to surface or groundwater water quality in Sunnyvale.

- b. *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to groundwater supplies. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 does not propose development or land use designation changes but rather is a policy document containing strategies intended to reduce GHG emissions and increase sustainability. Sunnyvale Playbook Update/Game Plan 2028 Play 4.2 seeks to decrease community water use through water efficiency retrofits and sustainable landscaping and irrigation. Reduced water use within Cupertino would aid in maintaining

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<sup>81</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 12.60, Stormwater Management. <https://ecode360.com/42718154#42718154> (accessed February 2024).

<sup>82</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 18.12.100, Grading. <https://ecode360.com/42728788?highlight=&searchId=16481596759239067#42728788> (accessed February 2024).

groundwater supplies. Additionally, Play 4.3 directs the City to implement the Green Stormwater Infrastructure Plan, which would increase groundwater recharge. As such, implementing the Sunnyvale Playbook Update/Game Plan 2028 would have a beneficial effect related to local groundwater recharge as well as support groundwater management in Sunnyvale. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to impedance of sustainable groundwater management.

- c. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*
- *Result in substantial erosion or siltation on- or off-site?*
  - *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*
  - *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?*
  - *Impede or redirect flood flows?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to alterations in drainage patterns and impervious surfaces. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 does not propose specific development or land use designation changes but rather emphasizes strategies intended to reduce GHG emissions and increase sustainability in the City. Implementation of several Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and small-scale construction activities within the City. Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. Play 2.2 promotes electrification and energy efficiency upgrades for existing residential and commercial buildings, which may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2 would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Play 3.3 would incentivize or require the installation of new EV charging stations. In addition, Play 4.3 seeks to plant additional trees throughout the City that may require the use of construction equipment for the moving and placement of trees.

Implementation of these Sunnyvale Playbook Update/Game Plan 2028 Plays would primarily occur within previously developed areas and would not result in substantial alterations to Sunnyvale's existing drainage pattern and amount of impervious surface. Construction of Sunnyvale Playbook Update/Game Plan 2028 projects could result in erosion as discussed in Section 7, *Geology and Soils*. However, impacts related to drainage and water quality during construction would be minimized through the implementation of BMPs as required by the SMC and NPDES Construction General Permit program. In addition, Sunnyvale Playbook Update/Game Plan 2028 projects would be in accordance with the Sunnyvale General Plan Land Use and Transportation Element, which includes Policies LT-1.10, LT-9.19, and LT-10.5 for the protection and preservation of wetlands, creeks, and streams within Sunnyvale.<sup>83</sup> Furthermore, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3

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<sup>83</sup> Sunnyvale, City of. 2022. General Plan Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed October 2023).

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directs the City to implement the Green Stormwater Infrastructure Plan, which would improve drainage and water quality. As such, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not substantially alter drainage patterns or impervious surfaces within the City. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to erosion, flooding, and polluted runoff.

- d. *Would the project result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Portions of Sunnyvale are located within the 100-year floodplain designated by Federal Emergency Management Agency (FEMA). Therefore, areas of Sunnyvale are at risk of flooding.<sup>84</sup>

The Sunnyvale Playbook Update/Game Plan 2028 does not propose specific development or land use designation changes but rather emphasizes strategies intended to reduce GHG emissions and increase sustainability in Sunnyvale. Implementation of several Sunnyvale Playbook Update/Game Plan 2028 Plays may promote infrastructure development and small-scale construction activities within Sunnyvale. As described under *Response 10c.*, Sunnyvale Playbook Update/Game Plan 2028 projects would not impede or redirect flood flows, and as discussed under *Response 9a. and 9b.* in Section 9, *Hazards and Hazardous Materials*, Sunnyvale Playbook Update/Game Plan 2028 projects would generally not involve the regular use or storage of hazardous materials with the exception of battery energy storage that include the storage of lithium-ion batteries. Future Sunnyvale Playbook Update/Game Plan 2028 projects, such as battery energy storage facilities, would be reviewed for compliance with the applicable local and State regulations related to flooding and hazardous materials use and storage, including the SMC and CBC standards for construction within flood-prone areas. SMC Chapter 16.62 regulates development in flood-prone areas and requires new structures built within a FEMA-designated Special Flood Hazard Area to meet requirements for flood resistance. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 would result in a ***less-than-significant impact*** related to flooding and inundation resulting in release of pollutants.

- e. *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to obstruction of a water quality control plan. The Sunnyvale Playbook Update/Game Plan 2028 would not include projects that would result in the direct extraction of groundwater. Rather, the Sunnyvale Playbook Update/Game Plan 2028 encourages water savings through Play 4.2 and sustainable stormwater management and groundwater recharge through Play 4.3. The Sunnyvale Playbook Update/Game Plan 2028 would not interfere with or obstruct implementation of water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to consistency with a water quality control plan or sustainable groundwater management plan.

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<sup>84</sup> Sunnyvale, City of. 2011. General Plan Safety and Noise Element.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/602/638370338402370000> (accessed February 2024).

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts related to hydrology. Future Sunnyvale Playbook Update/Game Plan 2028-related projects, in combination with other cumulative projects that occur to accommodate the City's anticipated population, employment, and housing growth, are not anticipated to contribute to cumulative hydrology and water quality impacts with adherence to applicable Sunnyvale General Plan policies and local, State, and federal regulatory requirements. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not contribute to an increase in development but could result in infrastructure development projects and minor construction activities. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and other cumulative projects could have incremental impacts related to hydrology and water quality, such as erosion and sedimentation due to construction activities. However, the Sunnyvale Playbook Update/Game Plan 2028's contribution to such impacts would be minor and temporary, and the Sunnyvale Playbook Update/Game Plan 2028 would have the long-term effect of reducing water use and improving stormwater capture and groundwater recharge. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to hydrology and water quality.

# 11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*a. Would the project physically divide an established community?*

The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing strategies that are consistent with the Sunnyvale General Plan and does not include actions or specific development projects that would divide an established community. Sunnyvale Playbook Update/Game Plan 2028 Play 3.2 facilitates the provisioning of new bike and pedestrian infrastructure and amenities, improved public transit connectivity, and enhanced safety and active transportation throughout the community. Such actions would help to increase connectivity within the Sunnyvale community. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to division of an established community.

*b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The Sunnyvale Playbook Update/Game Plan 2028 is a policy document and does not propose development or changes to land use and zoning designations and contains strategies that are consistent with the Sunnyvale General Plan, including General Plan Land Use and Transportation Element Policy LT-2.2 and Action LT-2.2a that direct the City to maintain and implement a CAP for GHG reduction and green development.<sup>85</sup> Nonetheless, implementing the Sunnyvale Playbook Update/Game Plan 2028 would require some modification of existing policies, including developing and implementing new programs, and projects, or modifying existing ones. For example, Sunnyvale Playbook Update/Game Plan 2028 Play 2.2 includes adoption of new building ordinance to require building electrification for existing developments. Play 3 would include adoption of an ordinance to phase out the use of gasoline- and diesel-powered off-road equipment. In addition, Play 4.2 would involve the adoption of new plans and policies related to water efficiency, recycled water, and water efficient landscaping. In order to implement these Plays, the SMC and other applicable City documents may need to be amended to reflect new or modified requirements. However, where modifications of existing policies are needed, such as updates to policies related to energy and

<sup>85</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

water, the Sunnyvale Playbook Update/Game Plan 2028 Plays would result in greater avoidance or reduction of environmental effects. Furthermore, future updates to existing policies or via new proposed policies would require a separate public review process and environmental review in accordance with applicable local and State regulations. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to consistency with current land use plans or policies.

## **Cumulative Impacts**

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy documents containing programs that are consistent with the City's General Plan goals to increase sustainability and reduce the City's contribution to climate change impacts. Nonetheless, implementing the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would require some modification of existing policies, including developing and implementing new programs, and projects, or modifying existing ones. The proposed policy changes are consistent with the intent of the goals and policies established within the City General Plan and would not cumulatively contribute to any environmental impacts. Cumulative projects, including the Sunnyvale Playbook Update/Game Plan 2028, would be required to adhere to City development regulations and Sunnyvale General Plan policies to retain land use character and minimize environmental impacts. Future Sunnyvale Playbook Update/Game Plan 2028-related projects and actions would be reviewed for consistency with the Sunnyvale General Plan, SMC, and other applicable regulatory land use actions prior to approval and would have the overall effect of greater avoidance or reduction of environmental effects. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no cumulative impact*** related to land use.

## 12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*
- b. *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

According to the Sunnyvale General Plan Land Use and Transportation Element, there are no active mines and no known areas with mineral resource deposits in Sunnyvale, and no minerals or aggregate resources of Statewide importance are located in Sunnyvale.<sup>86</sup> Furthermore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not facilitate projects within the City that could result in the loss of availability of known mineral resources. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to mineral resources.

### Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). The Sunnyvale General Plan does not identify mineral resources or active mineral resource extraction operations within the City. As such, Sunnyvale Playbook Update/Game Plan 2028 projects and the CEQA GHG Emissions Thresholds, in combination with other cumulative projects that occur to accommodate the anticipated population, housing, and employment forecasts of the City, would not contribute to cumulative impacts related to mineral resources. Thus, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no cumulative impact*** related to mineral resources.

<sup>86</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed December 2023).

# 13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as construction equipment). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance, while noise from a point source typically attenuates at about 6 dBA per doubling of distance. Noise levels may also be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor



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and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by 5 to 10 dBA.

The Sunnyvale General Plan Safety and Noise Element identifies roadway vehicles as Sunnyvale's main source of noise, followed by Moffett Federal Airfield, the Caltrain corridor, and San Jose International Airport. The Sunnyvale General Plan Safety and Noise Element and SMC Section 19.42.030 aim to ensure appropriate noise levels considered compatible for community noise environments.<sup>87, 88</sup> The City's normally acceptable exterior noise exposure standards are shown in Table 6.

**Table 6 Exterior Noise Compatibility Standards**

Land Use Type	Highest Level of Exterior Noise Exposure that is Regarded as "Normally Acceptable" ( $L_{dn}$ )
Residential: Low- Density Detached Single-Family Homes, Duplexes, Mobile Homes	60 dBA
Other Residential: Townhomes, Multi-Family Apartments, Condominiums, and all other residential	65 dBA
Lodging: Motels and Hotels	70 dBA
Outdoor Activities: Golf Courses, Cemeteries, Parks	75 dBA
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	70 dBA
Office Buildings, Commercial and Professional Businesses	70 dBA
Auditoriums, Concert Halls, Amphitheaters, Sports Arena, Outdoor Spectator Sports	70 dBA
Industrial, Manufacturing, Utilities	75 dBA

Source: Sunnyvale General Plan Safety and Noise Element, Figure 6-6

Construction noise is regulated by SMC Section 16.08.030, which provides an exemption to the noise regulations for construction occurring between the hours of 7:00 am and 6:00 pm on weekdays and 8:00 am and 5:00 pm on Saturdays. Construction is prohibited on Sundays.<sup>89</sup> No loud environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, radios, etc., is allowed where such noises may be a nuisance to adjacent residential neighborhoods. SMC Section 19.42.030 regulates operational noise within residential and nonresidential areas of the City and provides special exceptions to the noise limits for powered equipment, leaf blowers, deliveries, warning sounds, and other activities.<sup>90</sup>

<sup>87</sup> Sunnyvale, City of. 2011. General Plan Safety and Noise Element.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/602/638370338402370000> (accessed February 2024).

<sup>88</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 19.42.030, Noise or sound level.  
<https://ecode360.com/42730950?highlight=&searchId=16742807840881719#42730950> (accessed February 2024).

<sup>89</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 16.08.030, Hours of construction—Time and noise limitations.  
<https://ecode360.com/42720748?highlight=&searchId=16742406866224120#42720748> (accessed February 2024).

<sup>90</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 19.42.030, Noise or sound level.  
<https://ecode360.com/42730950?highlight=&searchId=16742807840881719#42730950> (accessed February 2024).

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to excessive noise levels. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing programs that are consistent with the General Plan. Some of the Sunnyvale Playbook Update/Game Plan 2028 Plays would support small-scale construction projects that could result in temporary noise. Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. Play 2.2 promotes electrification of existing residential, commercial, and municipal buildings, which may require minor construction to modify the electrical and natural gas connections to existing buildings. Play 3.2 would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Play 3.3 would incentivize or require the installation of new EV charging stations. In addition, Play 4.3 seeks to increase the number of trees throughout Sunnyvale, which may require the use of construction equipment for the moving and placement of trees. However, future Sunnyvale Playbook Update/Game Plan 2028-related projects would be reviewed for consistency with the Sunnyvale General Plan and SMC, and construction activities would be required to comply with the provisions of SMC Section 16.08.030, including the permitted construction hours. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 would not result in significant construction noise impacts.

The Sunnyvale Playbook Update/Game Plan 2028 does not include future projects that would result in substantial operational noise. Rather, the Sunnyvale Playbook Update/Game Plan 2028 encompasses a suite of GHG-reduction opportunities, including those that affect the transportation sector and its associated noise. For example, Sunnyvale Playbook Update/Game Plan 2028 Plays 3.3 and 3.4 encourage adoption of EVs and electric small engine and off-road equipment that are quieter than gas-powered alternatives. In addition, Plays 3.1 and 3.2 seek to reduce VMT in the City and facilitate improvements to bicycle, pedestrian, and public transit circulation to increase active transportation and transit ridership. These Plays would reduce roadway vehicle-related noise in Sunnyvale that is the major source of noise pollution identified in the General Plan Safety and Noise Element.<sup>91</sup> Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not generate excessive noise levels and would result in a ***less-than-significant impact*** related to noise exposure.

- b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise.<sup>92</sup> Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from

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<sup>91</sup> Sunnyvale, City of. 2011. General Plan Safety and Noise Element.

<https://www.sunnyvale.ca.gov/home/showpublisheddocument/602/638370338402370000> (accessed February 2024).

<sup>92</sup> Caltrans. 2020. Transportation and Construction Vibration Guidance Manual (CT-HWANP-RT-13-069.25.3). <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf> (accessed February 2024).

vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or Root Mean Square (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings.<sup>93</sup> Vibration significance ranges from approximately 50 vibration decibels (VdB), which is the typical background vibration-velocity level, to 100 VdB, the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table 7.

**Table 7 Human Response to Different Levels of Groundborne Vibration<sup>94</sup>**

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day
VdB = vibration decibels Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual	

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to groundborne vibration. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing programs that are consistent with the Sunnyvale General Plan. Some of the proposed Sunnyvale Playbook Update/Game Plan 2028 Plays would support small-scale construction projects, such as EV charging station construction and new bicycle lanes, that may result in a temporary, minor increase in groundborne vibration during construction. However, Sunnyvale Playbook Update/Game Plan 2028 projects would be subject to review by the City for compliance and consistency with SMC Section 19.42.060, which regulates vibration in the City, and construction activities would be required to comply with applicable local, State, and federal regulations to minimize temporary construction impacts related to groundborne vibration.<sup>95</sup> Furthermore, Sunnyvale Playbook Update/Game Plan 2028 projects would not include operational sources of groundborne vibration. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to groundborne vibration.

- c. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

<sup>93</sup> Federal Highway Administration (FHWA). 2006. FHWA Highway Construction Noise Handbook. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). [https://www.fhwa.dot.gov/Environment/noise/construction\\_noise/handbook/handbook00.cfm](https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook00.cfm) (accessed February 2024).

<sup>94</sup> Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123\\_0.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf) (accessed February 2024).

<sup>95</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Section 19.42.060, Ground vibration regulated. <https://ecode360.com/42730957?highlight=&searchId=16744449726465578#42730957> (accessed February 2024).

Sunnyvale does not contain any airports but is located adjacent to the Moffett Federal Airfield. The Santa Clara County Airport Land Use Commission (ALUC) has advisory powers over new land uses in the vicinity of airports and establishes 65 dBA CNEL as the maximum allowable noise level considered compatible with residential uses. The unacceptable noise areas resulting from Moffett Federal Airfield are contained within the airport.<sup>96</sup> The CEQA GHG Emissions Thresholds and Sunnyvale Playbook Update/Game Plan 2028 are policy documents that would not increase airport activity or result in additional habitable development or commercial development that could increase potential exposure of residents and employees to aircraft-related noise from Moffett Federal Airfield. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to aviation-related noise exposure.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy documents containing programs that are consistent with the Sunnyvale General Plan Safety and Noise Element. As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts related to noise. However, future Sunnyvale Playbook Update/Game Plan 2028-related projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, housing, and employment growth, would support construction projects, such as EV charging station construction, that may result in a temporary increase in groundborne vibration or noise levels. However, cumulative projects, including Sunnyvale Playbook Update/Game Plan 2028 projects, would be subject to review by the City for compliance with the Sunnyvale General Plan and SMC and would be required to comply with applicable local, State, and federal regulations governing construction noise and vibration. Additionally, the Sunnyvale Playbook Update/Game Plan 2028 encompasses a suite of GHG-reduction opportunities that would decrease VMT and roadway vehicle-related noise. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not generate permanent, excessive groundborne vibration or noise levels. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to noise.

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<sup>96</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed February 2024).

# 14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*
- b. *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy documents and do not propose development or changes to land use and zoning designations. Thus, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not result in construction or operational impacts related to substantial unplanned population growth or the displacement of existing people or housing. In addition, the Sunnyvale Playbook Update/Game Plan 2028 does not propose new roadways or utilities that could indirectly lead to new population growth or development. As such, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not directly increase the population, indirectly induce additional unplanned population growth, or displace people or housing. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to population and housing.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in any development or land use changes that could result in cumulative impacts related to population and housing. Similarly, future Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative development that occurs to accommodate Sunnyvale's anticipated population, employment, and housing growth, are not anticipated to displace people or housing nor induce substantial unplanned

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population growth within the City. Specifically, the Sunnyvale Playbook Update/Game Plan 2028 would not contribute to person or housing displacement in Sunnyvale nor result in population growth beyond that already assumed and planned for in the Sunnyvale General Plan and in accordance with Sunnyvale 2040 population projections. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no cumulative impact*** related to population and housing.

# 15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project 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 any of the public services:				
1. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*a. Would the project 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 any of the public services:*

- Fire protection?
- Police protection?
- Schools?
- Parks?
- Other public facilities?

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning designations. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to public services. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing programs that are consistent with the Sunnyvale General Plan and does not propose specific development or changes to land use and zoning designations. Implementation of the Sunnyvale Playbook Update/Game Plan 2028 and its proposed Plays and Moves would not result in increases in population or new employment opportunities that could induce population growth, as further

discussed in Section 14, *Population and Housing*. As such, the Sunnyvale Playbook Update/Game Plan 2028 would not require the construction of new or physically altered governmental (i.e., fire protection, police protection, schools, parks, libraries) facilities to serve additional population, the construction of which could cause significant environmental impacts. Sunnyvale Playbook Update/Game Plan 2028 Plays 6.1 through 6.3 would help to increase community resiliency, reduce vulnerability to the impacts of climate change, and mitigate hazards such as flooding within Sunnyvale, thereby reducing the burden on local public services related to such natural disasters. Furthermore, future Sunnyvale Playbook Update/Game Plan 2028 projects and actions would be reviewed for consistency with the Sunnyvale General Plan and other applicable local and State regulations related to public services. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to public services in terms of need for the construction of new or altered governmental facilities.

### **Cumulative Impacts**

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts related to public services and facilities. Likewise, implementation of future Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative development that occurs to accommodate Sunnyvale's anticipated population, employment, and housing growth, would not result in increases in population or induce additional population growth beyond that assumed under the Sunnyvale General Plan and 2040 population projections. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not result in cumulative need to construct or expand public services facilities. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no cumulative impact*** related to public services.



# 16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*
- b. *Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Sunnyvale is a primarily urbanized community with parks and recreational spaces incorporated throughout the City. About 770 acres, over 7 percent of the area within Sunnyvale's incorporated City limits, is devoted to park and recreation facilities owned or maintained by the City for public use, including 22 neighborhood parks (176 acres) and nine special use facilities (264 acres). The City has a recreational standard of 5.2 acres per 1,000 residents, which is within the National Recreation and Park Association (NRPA) guidelines of four to six acres of open space per 1,000 residents.<sup>97</sup> The Sunnyvale General Plan Land Use and Transportation Element and Community Character Element identify policies and actions such as Policies LT-9.1 through LT-9.9 and LT-10.1 through LT-10.4, to manage the local parks and recreational facilities and protect open space resources within Sunnyvale.<sup>98, 99</sup>

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to parks or recreational facilities. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing Plays and Moves, such as Moves 4.L and 4.M to increase trees and green stormwater infrastructure and Moves 6.B and 6.C to protect the shoreline and expand tidal and salt marshes, that are consistent with

<sup>97</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed February 2024).

<sup>98</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>99</sup> Sunnyvale, City of. 2011. Community Character Element. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/598/637819113519200000> (accessed February 2024).

Sunnyvale's General Plan, including its recreation and open space policies. Additionally, as described in Section 14, *Population and Housing*, the Sunnyvale Playbook Update/Game Plan 2028 would not result in substantial population growth or direct land use changes. As such, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not result in a substantial physical deterioration of parks or other recreational facilities or result in the need to expand recreational facilities. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Thresholds would result in **no impact** related to recreation in terms of construction of or need for the construction of new or altered recreational facilities.

### Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts related to parks and recreational facilities. Likewise, implementation of future Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, would not result in increases in population or induce additional population growth beyond that assumed under the Sunnyvale General Plan and 2040 population projections. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not result in increased demand for parks or substantial cumulative physical deterioration of parks or other recreational facilities or result in the cumulative need to expand recreational facilities. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no cumulative impact** related to recreation.

# 17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
- b. *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

The Sunnyvale General Plan Land Use and Transportation Element includes the following goals:

- **Goal LT-1:** Coordinated regional and local planning.
- **Goal LT -2:** Environmentally sustainable land use and transportation planning and development.
- **Goal LT -3:** An effective multimodal transportation system.
- **Goal LT -4:** An attractive community for residents and businesses.
- **Goal LT -5:** Creation, preservation, and enhancement of Village Centers and neighborhood facilities that are compatible with residential neighborhoods.
- **Goal LT -6:** Protected, maintained, and enhanced residential neighborhoods.
- **Goal LT -7:** Diverse housing opportunities.
- **Goal LT -8:** Options for healthy living.
- **Goal LT -9:** Adequate and balanced recreation facilities.
- **Goal LT -10:** Regional approach to providing and receiving open space.
- **Goal LT -11:** Supportive economic development environment.
- **Goal LT -12:** A balanced economic base.
- **Goal LT -13:** Protected, maintained, and enhanced commercial areas, shopping centers, and business districts.

- **Goal LT -14:** Special and unique land uses to create a diverse and complete community.<sup>100</sup>

Additionally, the City adopted the Active Transportation Plan in 2020, which includes plans for bicycle, pedestrian, and safe routes to school programs, with a main goal to assist the City in creating a safe, connected, and efficient Citywide walking and bicycling network. The Active Transportation Plan also implements the Sunnyvale General Plan goals, policies, and actions related to complete streets by building a blueprint for a system of bikeways and pedestrian facilities across Sunnyvale.<sup>101</sup>

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to conflict with a program, plan, ordinance, or policy addressing the transportation circulation system. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing strategies and policies that are consistent with the Sunnyvale Land Use and Transportation Element and Active Transportation Plan. Sunnyvale Playbook Update/Game Plan 2028 Play 3.2 facilitates the continued implementation of the Active Transportation Plan and the development of new bicycle and pedestrian facilities, including bike and pedestrian paths and bike share and scooter share. Play 3.2 also emphasizes improvements to the public transit system and first-last-mile connections to increase transit ridership. Additionally, Sunnyvale Playbook Update/Game Plan 2028 Play 3.1, along with Play 3.2, would reduce VMT within the City, aligning with the goals of the General Plan and Active Transportation Plan.

The Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would advance active transportation and public transit within Sunnyvale and decrease VMT and associated air pollutants and GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would be consistent with the Sunnyvale General Plan Land Use and Transportation Element and Active Transportation Plan goals related to improving multi-modal facilities, reducing VMT and single-occupancy vehicles, encouraging active transportation, and reducing vehicle congestion within Sunnyvale. Furthermore, the Sunnyvale Playbook Update/Game Plan 2028 would seek to reduce VMT within Sunnyvale, consistent with CEQA Guidelines section 15064.3, subdivision (b). Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to consistency with plans and policies addressing the transportation circulation system and CEQA Guidelines section 15064.3, subdivision (b).

- c. *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*
- d. *Would the project result in inadequate emergency access?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to risk associated with transportation design, incompatible use, or emergency access. The Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing strategies that are consistent with the Sunnyvale General Plan, including the Land Use and Transportation Element, and would not facilitate development beyond that allowed under the General Plan. Implementation of some

<sup>100</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).

<sup>101</sup> Sunnyvale, City of. 2020. Sunnyvale Active Transportation Plan.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/2844/637822670426570000> (accessed October 2023).

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**Transportation**

Sunnyvale Playbook Update/Game Plan 2028 Plays, such as Play 3.2 that would provide for new bicycle and pedestrian facilities, may involve construction within the local right-of-way. Construction activities have the potential to require lane closures and may impact traffic and vehicle speeds on the affected roadways; however, these impacts would be temporary and access to roadways would generally be maintained throughout project construction. Furthermore, future projects involving work in the public right-of-way would be required to coordinate with the City to ensure appropriate construction staging and adequate emergency access on adjacent roadways pursuant to SMC Chapter 13.08.<sup>102</sup> Compliance with the SMC would minimize impacts related to the circulation system design, including safety impacts and emergency access, would not occur. As such, construction of Sunnyvale Playbook Update/Game Plan 2028 projects would not create transportation design hazards or result in inadequate emergency access. Furthermore, the Sunnyvale Playbook Update/Game Plan 2028 would facilitate increased active transportation and public transit use and decreased VMT within Sunnyvale, which in turn would reduce potential transportation hazards and congestion conditions that can hinder emergency response. Thus, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to transportation hazards and emergency access.

### Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts. Cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth could result in increases in VMT or changes affecting traffic design safety and emergency access. However, the Sunnyvale Playbook Update/Game Plan 2028 is a policy document containing programs that are consistent with the General Plan and other applicable transportation policies and does not propose new development that would increase VMT, result in design hazard, or affect emergency access. Rather, the Sunnyvale Playbook Update/Game Plan 2028 Plays and Moves would promote alternative modes of transportation and reduction of VMT throughout Sunnyvale, consistent with goals contained in the General Plan Land Use and Transportation Element and Active Transportation Plan. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to transportation.

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<sup>102</sup> Sunnyvale, City of. 2024. Sunnyvale Municipal Code Chapter 13.08, Right-of-Way Encroachments. <https://ecode360.com/42719687?highlight=encroachments&searchId=16491543957131113#42719687> (accessed February 2024).

# 18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code § 5020.1 (k)?*
- b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe?*

On January 18 and 22, 2024, the eight following Native American Heritage Commission (NAHC)-identified local Native American tribal groups were formally notified via certified mail and email that

Environmental Checklist  
**Tribal Cultural Resources**

the City initiated environmental review of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds and were invited to provide consultation:

- Amah Mutsun Tribal Band
- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- North Valley Yokuts Tribe
- Tamien Nation
- The Ohlone Indian Tribe
- Wuksache Indian Tribe/Eshom Valley Band

The City also sent follow up emails to the tribes on February 1, 2024. Under AB 52, Native American tribes have 30 days to respond and request further project information and formal consultation. The only response received was from the Amah Mutsun Tribal Band that emailed the City on February 1, 2024 indicating that the plan area is outside of the tribe's traditional boundaries.

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to tribal cultural resources. Likewise, the Sunnyvale Playbook Update/Game Plan 2028 would not involve land use or zoning changes that would increase development within the City but would instead promote sustainable infrastructure development within the urbanized area of Sunnyvale. As a policy document, the Sunnyvale Playbook Update/Game Plan 2028 would also not directly entail ground disturbing activities. However, future implementation of Sunnyvale Playbook Update/Game Plan 2028 actions related to existing building energy, active transportation, renewable energy, and tree planting may include construction activities with the potential to disturb previously undiscovered tribal cultural resources, as discussed further below.

Electrification retrofits associated with Sunnyvale Playbook Update/Game Plan 2028 Play 2.2 may change the physical environment through the need for upgraded service and electrical panels, branch circuit upgrades, installation of condensate drains to facilitate the installation of electric heat pumps for water and space heating, and ground disturbance to remove nature gas infrastructure. The physical changes these upgrades would entail are dependent on the year of building construction and location of electrical and service panels and plumbing connection of condensate drains, which sometimes may include modifications to the interior and/or exterior of buildings for wiring and panel replacement and minor excavation for connection of drainage to sewer systems.

Sunnyvale Playbook Update/Game Plan 2028 Play 3.2 would encourage development of new bicycle and pedestrian infrastructure, which may involve construction activities to create new bike lanes and bike/pedestrian paths throughout Sunnyvale. Installation of new bike and pedestrian facilities would primarily impact previously disturbed areas within the public rights-of-way. However, the physical changes these enhancements would entail are dependent on the location of construction, which in some cases may include minor temporary excavation and grading.

Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2 and 1.3 would result in the addition of solar PV and thermal energy systems, along with battery storage, within the City. These would primarily entail the installation of small-scale systems on existing developed sites. Additionally, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 seeks to plant additional trees throughout the City,

which may require the use of construction equipment for the moving and placement of trees. These actions could result in ground disturbance related to the construction of new infrastructure and planting of new trees.

Implementation of these Sunnyvale Playbook Update/Game Plan 2028 actions could impact unknown tribal cultural resources during construction that involves below-grade activities in previously undisturbed soils. However, future Sunnyvale Playbook Update/Game Plan 2028 projects would be located and designed strategically to reduce ground disturbance to the maximum extent possible. In addition, Sunnyvale Playbook Update/Game Plan 2028 projects and actions would be reviewed for consistency with applicable local, regional, and State tribal cultural and archaeological regulations prior to final siting and construction and would be required to comply with Sunnyvale General Plan Policy LT-1.10 and Action LT-1.10f, which includes a requirement that projects halt all ground-disturbing activities when unusual amounts of shell or bone, isolated artifacts, or other similar features are discovered and retain a qualified professional to determine the significance of the finding and implement mitigation measures.<sup>103</sup> As such, tribal cultural resources would be protected prior to and/or upon discovery and, thus, impacts would be reduced to a minimal level. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to tribal cultural resources.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in construction projects and would not affect tribal cultural resources. Future Sunnyvale Playbook Update/Game Plan 2028 projects, in combination with other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth, could increase the potential for adverse effects to unknown tribal cultural resources in Sunnyvale. However, impacts to tribal cultural resources are site-specific; accordingly, as required under applicable laws and regulations, potential impacts associated with cumulative developments would be addressed on a case-by-case basis as cumulative project details and locations become known. Sunnyvale Playbook Update/Game Plan 2028 projects and other cumulative projects would be required to comply with Sunnyvale General Plan Policy LT-1.10 and Action LT-1.10f, for the protection and proper treatment of any cultural resources discovered during ground disturbance, which would minimize the potential for significant impacts to tribal cultural resources. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant cumulative impact*** related to tribal cultural resources.

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<sup>103</sup> Sunnyvale, City of. 2022. Land Use and Transportation Element.  
<https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638130909277830000> (accessed December 2023).



Environmental Checklist  
Utilities and Service Systems

## 19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The Sunnyvale Playbook Update/Game Plan 2028 is a policy document aimed at reducing water, solid waste, and energy consumption and related GHG emissions and does not propose development or changes to land use and zoning designations or include site-specific infrastructure designs or project proposals. Furthermore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would not result in an increase in population and housing, nor would it facilitate growth beyond that anticipated by the Sunnyvale General Plan and 2040 Plan Bay Area

projections. As such, implementing the Sunnyvale Playbook Update/Game Plan 2028 would not create new demand related to water, wastewater, stormwater drainage, electric power, natural gas power, or telecommunications utilities. However, projects resulting from implementation of the Sunnyvale Playbook Update/Game Plan 2028 could include redevelopment and/or restructuring of electricity and natural gas power facilities and infrastructure, as well as new local renewable energy generation and storage and water infrastructure projects. Potential impacts related to these strategies are discussed further as follows by utility facilities topic.

### Water Supply Facilities/Infrastructure

Sunnyvale has three sources of potable water supply: surface water from the San Francisco Public Utilities Commission (SFPUC), treated surface water from the Santa Clara Valley Water District (SCVWD), and groundwater. Recycled water produced at the City's Water Pollution Control Plant (WPCP) makes up the remaining part of the water portfolio.<sup>104</sup> The Sunnyvale 2020 Urban Water Management Plan projects that the City will have adequate water supplies for normal, single dry year, and multiple dry year scenarios through 2040.<sup>105</sup>

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not result in new land uses that would contribute to an increase in water use compared to existing conditions. Rather, Sunnyvale Playbook Update/Game Plan 2028 Play 4.2 seeks to decrease water consumption and increase the resilience of the Sunnyvale water supplies. In addition, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 would increase green stormwater infrastructure in the City, improving water infiltration and groundwater recharge. As such, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in reduced water use and, thus, relocation or construction of new or expanded water facilities would not be required. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to need for the construction or expansion of water supply facilities and infrastructure.

### Wastewater Treatment Facilities/Infrastructure

The City owns and operates the Donald M. Sommers Water Pollution Control Plant located at 1444 Borregas Avenue in Sunnyvale. The Water Pollution Control Plant treats wastewater from residential, commercial, and industrial sources in Sunnyvale, the Rancho Rinconada portion of Cupertino, and Moffett Federal Airfield. Treated wastewater is discharged to the southern San Francisco Bay via the Guadalupe Slough. Five major trunk networks terminate at the WPCP, referred to as the Lawrence, Borregas, Lockheed, Moffett, and Cannery trunks.<sup>106</sup> The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not result in new land uses that would generate sanitary wastewater or otherwise contribute to an increase in wastewater treatment requirements. The amount or characteristics of wastewater treated at the WPCP or by the City of Sunnyvale would not change compared to existing conditions. As such, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not only reduce water use but also not require relocation or construction of new wastewater collection or treatment infrastructure. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG

<sup>104</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed February 2024).

<sup>105</sup> Sunnyvale, City of. 2021. 2020 Urban Water Management Plan. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/380/637889141541470000> (accessed March 2024).

<sup>106</sup> *Ibid*

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Emissions Thresholds would result in **no impact** related to need for the construction or expansion of wastewater facilities and infrastructure.

**Stormwater Drainage Facilities/Infrastructure**

The City of Sunnyvale maintains a system of storm drains, gutters, and ditches to convey stormwater generated during rain events. As discussed in Section 10, *Hydrology and Water Quality*, the Sunnyvale Playbook Update/Game Plan 2028 does not propose development or changes to land use and zoning designations and, thus, would not have direct construction or operational impacts related to stormwater drainage facilities. Implementation of Sunnyvale Playbook Update/Game Plan 2028 Plays 1.2, 1.3, 2.2, 3.2, 3.3, and 4.3 related to building electrification, renewable energy production and storage, transportation, water, and urban trees may promote infrastructure development that would involve small-scale construction. Construction of projects implemented in accordance with the Sunnyvale Playbook Update/Game Plan 2028 could result in erosion and potential changes to drainage patterns. However, as described in Section 7, *Geology and Soils*, and Section 10, *Hydrology and Water Quality*, Sunnyvale Playbook Update/Game Plan 2028 projects would be required to comply with local, State, and federal requirements during construction that would reduce stormwater runoff, erosion, and potential impacts to the stormwater drainage system. Furthermore, Sunnyvale Playbook Update/Game Plan 2028 Play 4.3 encourages the development of green stormwater infrastructure in the City, which would help to reduce stormwater flows to the City's drainage facilities. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to need for the construction or expansion of stormwater drainage facilities and infrastructure.

**Electric Power Facilities/Infrastructure**

Electric power service in the City is provided by SVCE using transmission infrastructure operated and maintained by Pacific Gas & Electric (PG&E). The Sunnyvale Playbook Update/Game Plan 2028 would not involve new land uses or development that require new or additional electric service. Sunnyvale Playbook Update/Game Plan 2028 Play 1.1 promotes the use of SVCE-supplied energy to increase the use of clean electricity, with a goal of 100 percent clean energy participation by 2030. Plays 1.2 and 1.3 support installation of small-scale solar PV and renewable energy systems and battery storage facilities throughout the City to provide greener renewable electricity. Sunnyvale Playbook Update/Game Plan 2028 Plays 2.1 through 2.3 promote energy efficiency upgrades and electrification of new and existing buildings. In addition, Play 3.3 encourages new EV infrastructure throughout the City. These Plays may alter electricity demand within Sunnyvale. However, the Sunnyvale Playbook Update/Game Plan 2028 would serve as a pathway to reduce GHG emissions, including emissions related to energy consumption, and other beneficial environmental and sustainability effects. These benefits include a reduction in energy consumption. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a **less-than-significant impact** related to construction, expansion, or relocation of electric power facilities and infrastructure.

**Natural Gas Power Facilities/Infrastructure**

PG&E provides natural gas services to Sunnyvale. The Sunnyvale Playbook Update/Game Plan 2028 would not involve new land uses that require new or additional natural gas service that could require the construction of new or expanded natural gas facilities. Sunnyvale Playbook Update/Game Plan 2028 Plays 2.2 and 2.3 would encourage or require building electrification in

new and existing buildings to reduce natural gas consumption within the City. Implementation of these actions could involve minor alterations to existing natural gas infrastructure as natural gas use is reduced. However, the Sunnyvale Playbook Update/Game Plan 2028 would serve as a pathway to reduce GHG emissions, including emissions related to energy consumption, and other beneficial environmental and sustainability effects. These benefits include a reduction in natural gas consumption. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a ***less-than-significant impact*** related to construction, removal, or relocation of natural gas power facilities and infrastructure.

### Telecommunications Facilities/Infrastructure

Sunnyvale is served by existing telecommunications companies such as AT&T and Comcast. The Sunnyvale Playbook Update/Game Plan 2028 would not alter existing telecommunications facilities and infrastructure and would not involve new land uses or development that would require new telecommunications infrastructure. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 would result in ***no impact*** related to need for construction or expansion of telecommunication facilities and infrastructure.

Overall, the Sunnyvale Playbook Update/Game Plan 2028 would result in a ***less-than-significant impact*** related to need for construction, relocation, or expansion of utilities.

- b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*
- c. *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

The CEQA GHG Emissions Thresholds is a guidance document and does not propose development or changes to land use and zoning. Thus, implementation of the CEQA GHG Emissions Thresholds would not result in construction or operational impacts related to water supplies or wastewater. Sunnyvale Playbook Update/Game Plan 2028 is a policy-level document that does not propose development or changes to land use and zoning designations or include site-specific infrastructure designs or project proposals, nor does it grant entitlements for development that would have the potential to increase demand for water supply or wastewater treatment. Rather the Sunnyvale Playbook Update/Game Plan 2028 contains Plays and Moves to reduce water use, such as Play 4.2, which includes actions to require water efficient fixtures and landscaping irrigation, promote graywater use, and education the community on water conservation, and Play 4.3, which would increase green stormwater infrastructure and groundwater infiltration in the City. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to water supply and wastewater treatment.

- d. *Would the project 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?*
- e. *Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?*

The City contracts with Specialty Solid Waste and Recycling to provide solid waste collection services to residents and businesses in Sunnyvale. Collected waste is transported to the Sunnyvale Materials

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Recovery and Transfer Station, where it is sorted to remove recyclable materials from mixed waste and prepare them and source-separated recyclables and compostable materials for shipment to markets. The City of Sunnyvale has an agreement for solid waste disposal with Waste Management of California that currently directs the City's waste to the Kirby Canyon Landfill. If, in the future, Waste Management of California closed the Kirby Canyon Landfill, Waste Management would be required to provide Sunnyvale disposal capacity at an alternative disposal site.<sup>107</sup> The Kirby Canyon Landfill has a remaining capacity of 16,191,600 cubic yards with a maximum daily throughput of 2,600 tons of waste and is permitted to operate through 2059.<sup>108</sup>

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds do not propose development or changes to land use and zoning designations and would not facilitate increased development and, thus, would not result in an increase in solid waste collection and disposal demand. Rather, the Sunnyvale Playbook Update/Game Plan 2028 includes Play 4.1, which would reduce solid waste production, increase the diversion of organic and food waste, and increase participation in recycling programs in order to minimize waste being sent to the landfill. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in ***no impact*** related to solid waste.

### Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). As a guidance document, the CEQA GHG Emissions Thresholds would not result in cumulative impacts. Other cumulative projects that occur to accommodate Sunnyvale's anticipated population, employment, and housing growth could result in increases in population and additional use of or need for utilities and service systems. However, implementation of the CEQA GHG Emissions Thresholds and Sunnyvale Playbook Update/Game Plan 2028 and related infrastructure projects would not contribute to increases in population or induce additional population growth that would require additional use of existing utilities or service systems. Rather, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would result in reduced energy and water consumption and solid waste and wastewater generation. Therefore, implementation of the Sunnyvale Playbook Update/Game Plan 2028 CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to utilities and service systems.

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<sup>107</sup> Sunnyvale, City of. 2016. Land Use and Transportation Element Draft Environmental Impact Report. <https://www.sunnyvale.ca.gov/home/showpublisheddocument/608/637819113538930000> (accessed February 2024).

<sup>108</sup> CalRecycle. 2024. Kirby Canyon Recycle and Disposal Facility. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1370?siteID=3393> (accessed February 2024).

## 20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*
- b. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*
- c. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

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- d. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

According to the California Department of Forestry and Fire Protection (CalFIRE), the City is not located in a Local Responsibility Area or State Responsibility Area Fire Hazard Severity Zones.<sup>109</sup> The nearest Very High Fire Hazard Severity Zone (VHFHSZ) is located within southern Cupertino, approximately 2.4 miles south of the Sunnyvale City limits at its closest point. According to the Santa Clara Operational Area Hazard Mitigation Plan-Sunnyvale Annex, Sunnyvale is urbanized and categorized as having no risk of wildland fire.<sup>110</sup>

The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are policy-level documents that do not propose new residential, commercial, or institutional development that could be at risk from wildfire, nor do they grant entitlements for development that would have the potential to directly cause wildfire. Rather, these documents would aim to reduce Sunnyvale's contributions to and vulnerability to the effects of climate change, such as drought and flooding. Thus, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in **no impact** related to wildfire exposure, exacerbation, or related emergency evacuation.

## Cumulative Impacts

The cumulative projects scenario is the population, employment, and households forecasts identified in the supporting documentation for the Sunnyvale Playbook Update/Game Plan 2028, based on demographic data contained in Plan Bay Area 2040 (refer to Table 5). The City is not at risk of wildfire. Furthermore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds do not propose habitable development that could be at risk from wildfire, nor do they grant entitlements for development that would have the potential to directly cause wildfire. Thus, the Sunnyvale Playbook Update/Game Plan 2028 and the CEQA GHG Emissions Thresholds would result in **no cumulative impact** related to wildfire.

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<sup>109</sup> California Department of Forestry and Fire Protection (CalFIRE). 2023. Fire Hazard Severity Zone Viewer. <https://egis.fire.ca.gov/FHSZ/> (accessed October 2023).

<sup>110</sup> County of Santa Clara. 2017. Santa Clara Operational Area Hazard Mitigation Plan; Volume 2—Partner Annexes. <https://sunnyvaleca.legistar.com/LegislationDetail.aspx?ID=3216998&GUID=7E0A85F2-3134-4300-B6FC-DF5ACC14A82C&FullText=1> (accessed February 2024).

## 21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

The intent of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds is to reduce GHG emissions from Sunnyvale community operations through implementation of Plays and Moves related to energy use, water consumption, transportation, solid waste, and carbon sequestration. The Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds are consistent with the Sunnyvale General Plan and encourage residents, businesses, and institutions to reduce energy and water use, fuel use, VMT, and solid waste generation and the associated GHG emissions. The Sunnyvale Playbook Update/Game Plan 2028 would not facilitate development that would eliminate or threaten wildlife habitats or eliminate important examples of the major periods of California history or prehistory. Therefore, as discussed in more detail in



Environmental Checklist  
**Mandatory Findings of Significance**

Section 4, *Biological Resources*, Section 5, *Cultural Resources*, and Section 18, *Tribal Cultural Resources*, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant impact*** related to biological and cultural resources.

- b. *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Implementation of the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in a cumulatively beneficial reduction of GHG and air pollutant emissions across Sunnyvale. In addition, as discussed throughout the respective cumulative impacts discussions within this document, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not result in significant cumulative impacts. Rather, implementation of the Sunnyvale Playbook Update/Game Plan 2028 would be consistent with the Sunnyvale General Plan policies aimed at reducing emissions of GHGs and air pollutants, VMT, energy and water supply demands on utilities, and solid waste generation. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant cumulative impact*** related to the various CEQA topics addressed within this document.

- c. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

In general, impacts to human beings are associated with air quality, GHG emissions, hazards and hazardous materials, noise, transportation, and wildfire impacts. As detailed in the preceding sections, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would not result, either directly or indirectly, in substantial adverse effects related to air quality, GHG emissions, hazards, noise, transportation, or wildfire. As discussed in more detail in Section 3, *Air Quality*, Section 13, *Noise*, and Section 17, *Transportation*, the Sunnyvale Playbook Update/Game Plan 2028 could cause temporary construction impacts related to transportation, air quality, and noise that could, in turn, affect human beings but would not result in substantial adverse effects. In addition, as discussed throughout this document, the Sunnyvale Playbook Update/Game Plan 2028 would serve as a pathway to reduce operational GHG emissions and would result in other positive environmental and sustainability effects. These benefits include reduction in building energy and water consumption, VMT, and solid waste generation, as well as improved air quality and resiliency to the effects of climate change and natural disasters. Therefore, the Sunnyvale Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds would result in an overall ***less-than-significant impact*** related to potential for adverse effects on human beings.

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Rincon prepared this Sunnyvale Playbook Update-Game Plan 2028 and CEQA GHG Emissions Thresholds Initial Study-Negative Declaration under contract to the City of Sunnyvale. Persons involved in data gathering, environmental impact analysis, quality review, graphics preparation, and document formatting include the following.

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# Appendix A

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Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants



## Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants

**Sources, Health Effects, and Typical Controls Associated with Criteria Pollutants**

Pollutant	Sources	Health Effects	Typical Controls
Ozone (O <sub>3</sub> )	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage.	Breathing difficulties, lung tissue damage, vegetation damage, damage to rubber and some plastics.	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide (NO <sub>x</sub> ) emissions through emission standards, reformulated fuels, inspections programs, and reduced vehicle use. Limit ROG emissions from commercial operations, gasoline refueling facilities, and consumer products. Limit ROG and NO <sub>x</sub> emissions from industrial sources such as power plants and manufacturing facilities.
Carbon monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness.	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen dioxide (NO <sub>2</sub> )	See Carbon Monoxide.	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain.	Control motor vehicle and industrial combustion emissions. Conserve energy.
Sulfur dioxide (SO <sub>2</sub> )	Coal or oil burning power plants and industries, refineries, diesel engines.	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduce use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Respirable particulate matter (PM <sub>10</sub> )	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (NO <sub>x</sub> , SO <sub>x</sub> , organics).	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Control dust sources, industrial particulate emissions, woodburning stoves and fireplaces. Reduce secondary pollutants which react to form PM <sub>10</sub> . Conserve energy.
Fine particulate matter (PM <sub>2.5</sub> )	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (NO <sub>x</sub> , SO <sub>x</sub> , organics, and NH <sub>3</sub> ).	Increases respiratory disease, lung damage, cancer, and premature death, reduced visibility, surface soiling. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease.	Reduce combustion emissions from motor vehicles, equipment, industries, and agricultural and residential burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint.	Learning disabilities, brain and kidney damage. Control metal smelters.	No lead in gasoline or paint.
Sulfur Dioxide (SO <sub>2</sub> )	Coal or oil burning power plants and industries, refineries, diesel engines.	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduce use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Sulfates	Produced by reaction in the air of SO <sub>2</sub> , (see SO <sub>2</sub> sources), a component of acid rain.	Breathing difficulties, aggravates asthma, reduced visibility.	See SO <sub>2</sub>

City of Sunnyvale

**Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds**

<b>Pollutant</b>	<b>Sources</b>	<b>Health Effects</b>	<b>Typical Controls</b>
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas.	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations).	Control emissions from geothermal power plants, petroleum production and refining, sewers, and sewage treatment plants.
Visibility Reducing Particulates	See PM <sub>2.5</sub>	Reduced visibility (e.g., obscures mountains and other scenery), reduced airport safety.	See PM <sub>2.5</sub>
Vinyl Chloride	Exhaust gases from factories that manufacture or process vinyl chloride (construction, packaging, and transportation industries).	Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer.	Control emissions from plants that manufacture or process vinyl chloride, installation of monitoring systems.
Toxic Air Contaminant (TAC)	Combustion engines (stationary and mobile), diesel combustion, storage and use of TAC-containing substances (i.e., gasoline, lead smelting, etc.)	Depends on TAC, but may include cancer, mutagenic and/or teratogenic effects, other acute or chronic health effects.	Toxic Best Available Control Technologies (T-BACT), limit emissions from known sources.
Source: Compiled by Rincon Consultants, Inc. in January 2024			

## Appendix B

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Description of Greenhouse Gases of California Concern



## Description of Greenhouse Gases of California Concern

## Description of Greenhouse Gases of California Concern

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
Carbon dioxide (CO <sub>2</sub> )	Odorless, colorless, natural gas.	1	50–200	Burning coal, oil, natural gas, and wood; decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; oceanic evaporation; volcanic outgassing; cement production; land use changes
Methane (CH <sub>4</sub> )	Flammable gas and is the main component of natural gas.	28	12	Geological deposits (natural gas fields) extraction; landfills; fermentation of manure; and decay of organic matter
Nitrous oxide (N <sub>2</sub> O)	Nitrous oxide (laughing gas) is a colorless GHG.	298	114	Microbial processes in soil and water; fuel combustion; industrial processes
Chloro-fluoro-carbons (CFCs)	Nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (level of air at the Earth's surface); formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms.	3,800–8,100	45–640	Refrigerants aerosol propellants; cleaning solvents.
Hydro-fluoro-carbons (HFCs)	Synthetic human-made chemicals used as a substitute for CFCs and contain carbon, chlorine, and at least one hydrogen atom.	140 to 11,700	1–50,000	Automobile air conditioners; refrigerants
Per-fluoro-carbons (PFCs)	Stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface.	6,500 to 9,200	10,000–50,000	Primary aluminum production; semiconductor manufacturing
Sulfur hexafluoride (SF <sub>6</sub> )	Human-made, inorganic, odorless, colorless, and nontoxic, nonflammable gas.	22,800	3,200	Electrical power transmission equipment insulation; magnesium industry, semiconductor manufacturing; a tracer gas
Nitrogen trifluoride (NF <sub>3</sub> )	Inorganic, is used as a replacement for PFCs, and is a powerful oxidizing agent.	17,200	740	Electronics manufacture for semiconductors and liquid crystal displays.
Source: Compiled by Rincon Consultants, Inc. in January 2024				





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**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



May 6, 2024

Madeline Khair, Environmental Programs Manager  
City of Sunnyvale  
456 W Olive Avenue  
Sunnyvale, CA 94086  
[MKhair@sunnyvale.ca.gov](mailto:MKhair@sunnyvale.ca.gov)

Subject: Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA  
GHG Emissions Thresholds, Initial Study/Negative Declaration,  
SCH No. 2024040387, City of Sunnyvale, Santa Clara County

Dear Ms. Khair:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an Initial Study/Negative Declaration (IS/ND) from the City of Sunnyvale (City) for the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.<sup>1</sup> CDFW is submitting comments on the draft IS/ND as a means to inform the City of Sunnyvale as the Lead Agency, of potentially significant impacts to biological resources associated with the Project.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

## CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

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<sup>1</sup> CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority over the Project pursuant to the Fish and Game Code. For example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project may result in "take" as defined by state law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

## **REGULATORY REQUIREMENTS**

### **California Endangered Species Act**

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, "take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86). CDFW's issuance of an ITP is subject to CEQA and to facilitate permit issuance, any Project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. Pub. Resources Code, §§ 21001, subd. € & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065). In addition, pursuant to CEQA, the Lead Agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the Lead Agency makes and supports Findings of Overriding Consideration (FOC) for impacts that remain significant despite the implementation of all feasible mitigation. FOC under CEQA, however, does not eliminate the Project proponent's obligation to comply with the Fish and Game Code.

### **Lake and Streambed Alteration**

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting rivers, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it



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may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also generally subject to notification requirements. Therefore, any impact to the mainstems, tributaries, or floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification.

### **Migratory Birds and Raptors**

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

### **Fully Protected Species**

Several Fully Protected Species (Fish & G. Code § 3511 and 4700) have the potential to occur within or adjacent to the Project area, including, but not limited to: salt-marsh harvest mouse (*Reithrodontomys raviventris*), white-tailed kite (*Elanus leucurus*), golden eagle (*Aquila chrysaetos*), California least tern (*Sternula antillarum browni*), and California Ridgway's rail (*Rallus obsoletus obsoletus*).

Project activities described in the IS/ND should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

Take is for necessary scientific research;

- Efforts to recover a fully protected, endangered, or threatened species, live capture, and relocation of a bird species for the protection of livestock; or
- They are a covered species whose conservation and management are provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

Specified types of infrastructure projects may be eligible for an ITP for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15).

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CDFW also recommends the IS/ND analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the City include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species. Project proponents should consult with CDFW early in the Project planning process.

## **PROJECT DESCRIPTION SUMMARY**

**Proponent:** City of Sunnyvale

**Objective:** The objective of the Project is to achieve the 2030 GHG emissions target for the City of Sunnyvale. Primary Project activities include; the City has developed 19 strategies related clean electricity, building decarbonization, transportation decarbonization and sustainable land use planning, solid waste and water use reductions, community engagement, and climate adaptation.

**Location:** Sunnyvale, Santa Clara County (County), Citywide

**Timeframe:** The plan will be implemented over the next 21 years.

## **COMMENTS AND RECOMMENDATIONS**

CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

The IS/ND should define the threshold of significance for each impact and describe the criteria used to determine whether the impacts are significant (CEQA Guidelines, § 15064, subd. (f)). The IS/ND relies on General Plan policies and on requirements that subsequent Projects, if necessary, obtain appropriate permits but does not sufficiently describe how these policies will reduce impacts to less-than-significant.

## **ENVIRONMENTAL SETTING**

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project (CEQA Guidelines, §§15063 & 15360). CDFW recommends that a full list or table is included in the updated Biological Resources Section of the IS/ND that notes species common name, scientific name, state and federal listing status (as applicable), habitat type preference and determination on presence, for all special-status species with the potential to occur within the Project area.

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CDFW recommends the IS/ND provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The IS/ND should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project area (for sensitive natural communities see: <https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities>), and any stream or wetland set back distances the City or County may require.

CDFW recommends that the California Natural Diversity Database (CNDDDB), as well as previous studies performed in the area, be consulted to assess the potential presence of sensitive species and habitats. A nine U.S. Geologic Survey (USGS) 7.5-minute quadrangle search is recommended to determine what may occur in the region, larger if the Project area extends past one quad (See *Data Use Guidelines* on the Department webpage <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>). Please review the webpage for information on how to access the database to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the Project. CDFW recommends that CNDDDB Field Survey Forms be completed and submitted to CNDDDB to document survey results. Online forms can be obtained and submitted at: <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>.

Please note that CDFW's CNDDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site. Other sources for identification of species and habitats near or adjacent to the Project area should include, but may not be limited to, State and federal resource agency lists, California Wildlife Habitat Relationship System, California Native Plant Society Inventory, agency contacts, environmental documents for other projects in the vicinity, academics, and professional or scientific organizations. Only with sufficient data and information can the City adequately assess which special-status species are likely to occur in the Project vicinity.

According to Biogeographic Information and Observation System (BIOS) records, the Project site contains positive detections of several special-status species and has the potential to support numerous special-status species and their associated habitat. Species with potential to occur on-site include but are not limited to those listed in Attachment 1.

## **I. Project Description and Related Impact Shortcoming**

**COMMENT 1: Subsequent Project Review, (Biological Resources 4.a. p. 42)**

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The IS/ND identifies that “implementation of the following Sunnyvale Playbook Update/ Game Plan 2028 Plays may promote infrastructure development and redevelopment and may result in impacts to species through construction activities.” (4.a. p. 42). It is not clear what level of environmental review future Projects would receive. The IS/ND does not include a checklist for subsequent project review, nor adequate description of how the City’s policies would mitigate any potential impacts of the Project. While the Project has a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning approval at hand.

The CEQA Guidelines section 15168, subdivision (c)(4) states, “Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope.”

**Recommended Mitigation Measure 1: Subsequent Project CEQA Evaluation.** The IS/ND should include a procedure or checklist for evaluating subsequent Project impacts on biological resources to determine if the impacts are within the scope of the IS/ND or if an additional environmental document is warranted. Future analysis shall include all special-status species and sensitive habitats including, but not limited to, species considered rare, threatened, or endangered species pursuant to CEQA Guidelines, section 15380. The checklist shall be accompanied by enough relevant information and reasonable inferences to support a “within the scope” of the IS/ND conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis shall be prepared by a professional biologist experienced with the applicable species and habitat to provide the necessary supporting information.

## **II. Environmental Setting and Related Impact Shortcoming**

**Would the Project 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 CDFW or U.S. Fish and Wildlife Service (USFWS)?**

**COMMENT 2: Nesting Bird Surveys, (Biological Resources 4.a. p. 42)**

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The draft IS/ND states that the Project has the potential to disturb special-status species and nesting habitat for birds and raptors; however, the draft IS/ND does not state that baseline data will be collected if active nests are discovered.

**Recommended Mitigation Measure 2: Nesting Bird Surveys.** If Project-related work is scheduled during the nesting season (typically February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a professional biologist experienced with the applicable species and habitat shall conduct two surveys for active nests of such birds within 14 days prior to the beginning of Project construction, with a final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding the work area are typically the following: i) 250 feet for passerines; ii) 500 feet for small raptors such as accipiters; and iii) 1,000 feet for larger raptors such as buteos. Surveys shall be conducted at the appropriate times of day and during appropriate nesting times.

**COMMENT 3: Marsh and Shoreline Birds, (Biological Resources 4.a. p. 42)**

The IS/ND does not state potential impacts to shoreline and marsh birds from the Project. A number of marsh bird species occur along Sunnyvale's shoreline and throughout the Don Edwards San Francisco Bay National Wildlife Refuge. These include but are not limited to black skimmer (*Rynchops niger*), California least tern, California black rail, California Ridgway's rail, and western snowy plover (*Charadrius nivosus nivosus*). The IS/ND includes actions to advance shoreline protection projects and restore and expand salt marshes and natural waterways. Any in-water and shoreline work has the potential to cause the take of state listed marsh and shoreline bird species.

**Recommended Mitigation Measure 3: Surveys.** CDFW recommends the Project include a measure for marsh bird surveys following the 2017 Site-Specific Protocol for Monitoring Marsh Birds (<https://ecos.fws.gov/ServCat/Reference/Profile/68062>). CDFW recommends inclusion of avoidance and minimization measures in the Biological Resources Section of the IS/ND to reduce impacts below a level of significance.

**COMMENT 4: State Listed Fish Species, (Table 2, item 6.2, page 17)**

The IS/ND does not include potential impacts to state listed fish species known to be present in the Project area, including steelhead (*Oncorhynchus mykiss irideus*) - Central California Coast Distinct Population Segment (DPS) and longfin smelt (*Spirinchus thaleichthys*) along Sunnyvale's shoreline and throughout the Don Edwards San Francisco Bay National Wildlife Refuge. The IS/ND includes actions to advance shoreline protection projects and restore and expand salt marshes and natural

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waterways. Any in-water work has the potential to cause the take of state listed fish species.

**Recommended Mitigation Measure 4: Construction Activities and Work Windows.**

The IS/ND should include mitigation measures to avoid potential impacts to aquatic species for construction methods such as pile driving and dredging. In-water construction shall only occur during the CDFW approved work window of June 1 through November 30. A vibratory pile driver shall be used to the maximum extent possible. If an impact hammer is to be considered for construction, the City shall consult with CDFW regarding a CESA ITP for potential impacts to state listed species such as longfin smelt and Chinook salmon (*Oncorhynchus tshawytscha*). See also Recommended Mitigation Measure 9.

**COMMENT 5: Crotch's bumble bee, (Biological Resources 4.a. p. 42)**

Crotch's bumble bee (*Bombus crotchii*) are candidate species under CESA (CEQA Guidelines, §15380, subds. (c)(1)). The IS/ND does not address whether the proposed Project could result in impacts to Crotch's bumble bee. Crotch's bumble bee occurrences have been documented within the vicinity of the Project area and historic observations occur elsewhere in the County (CDFW 2023). The Project location is within the Crotch's bumble bee range (<https://wildlife.ca.gov/Conservation/CESA>) and grassland within and adjacent to the Project area may contain potential habitat for Crotch's bumble bees.

The Project includes strategies such as solar arrays and solar battery storage projects that may occur within ruderal grass and herbaceous vegetation and that may be potential Crotch's bumble bee nesting and foraging habitat. Potential impacts include direct mortality through crushing or filling of active bee colonies and hibernating bee cavities, reduced reproductive success, loss of suitable breeding and foraging habitats, loss of native vegetation that may support essential foraging habitat.

**Recommended Mitigation Measure 5: Habitat Assessment.** A habitat assessment shall be conducted by a qualified entomologist knowledgeable with the life history and ecological requirements of Crotch's bumble bee. The habitat assessment shall include all suitable nesting, overwintering, and foraging habitats within the Project area and surrounding areas. Potential nest habitat (February through October) could include that of other *Bombus* species such as bare ground, thatched grasses, abandoned rodent burrows or bird nests, brush piles, rock piles, and fallen logs. Overwintering habitat (November through January) could include that of other *Bombus* species such as soft and disturbed soil or under leaf litter or other debris. The habitat assessment shall be conducted during peak bloom period for floral resources on which Crotch's bumble bee feed. Further guidance on habitat surveys can be found within *Survey Considerations*

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for California Endangered Species Act (CESA) Candidate Bumble Bee Species (<https://wildlife.ca.gov/Conservation/CESA>).

**COMMENT 6: Western Burrowing Owl (Biological Resources 4.a. p. 42)**

Burrowing owl (*Athene cunicularia*) is designated by CDFW as a California Species of Special Concern (SSC) due to population decline and breeding range retraction. The species has also experienced a severe population decline in the County. The IS/ND notes ruderal infill lots could support burrowing owl but does not discuss potential impacts. Known populations of burrowing owl occur within and adjacent to the Project area, including Moffett Federal Airfield, the Golf Club at Moffett Field, Sunnyvale Baylands County Park, the grasslands along the City of Sunnyvale Water Pollution Control Plant, and other suitable habitat.

The Project includes strategies such as solar arrays and solar battery storage projects that may occur within ruderal grass and herbaceous vegetation that may be potential burrowing owl habitat. The Project also includes shoreline protection strategies which could impact grassland habitat along the shoreline, currently utilized by burrowing owl. Direct mortality could occur through crushing of adults or young within burrows, loss of nesting burrows, loss of nesting habitat, loss of foraging habitat resulting in reduced nesting success (loss or reduced health or vigor of eggs or young), nest abandonment, and reduced frequency or duration of care for young resulting in reduced health or vigor of young.

**Recommended Mitigation Measure 6: Habitat Assessment and Surveys.** The IS/ND should include a thorough habitat assessment of potential burrowing owl habitat within and adjacent to the Project area. A professional biologist experienced with burrowing owl and their habitat should conduct a field assessment that includes all areas that could be directly or indirectly impacted by the Project and include data such as vegetation type, vegetation structure and presence of burrows. Specific information on habitat assessment, burrowing owl survey methods, buffer distances and mitigation is provided in the CDFW Staff Report on Burrowing Owl Mitigation, dated March 7, 2012, and available at <https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>.

**Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?**

**COMMENT 7: Permits for Stream, Wetland, and Other Waters Impacts, Impacts to Sensitive Natural Communities, Riparian Habitat, Wetlands, Lake and Streambed**

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**Alteration Notification and Clean Water Act compliance (Biological Resources 4.c, p. 43-44)**

The IS/ND identifies that future development under the Project may be subject to the Clean Water Act and the Porter-Cologne Water Quality Control Act, but not Fish and Game Code section 1600 et seq. (p. 43). The IS/ND does not provide certainty that such impacts would comply with Fish and Game Code section 1600 et seq., the Porter-Cologne Water Quality Control Act, and the Clean Water Act, as the IS/ND does not include a mitigation measure requiring that development under the Project apply for CDFW, Regional Water Quality Control Board (RWQCB), or U.S. Army Corps of Engineers (USACE) Permits, nor does it contain a mitigation measure requiring compliance with the terms of these permits, if issued.

Development facilitated by the Project may result in impacts to streams and riparian habitats, such as Stevens Creek, Calabazas Creek, and Moffett Channel (p. 44). When riparian habitat is substantially altered, riparian functions become impaired, thereby likely substantially adversely impacting aquatic and terrestrial species. The IS/ND does not provide certainty that impacts to riparian habitats, sensitive natural communities, wetlands, and waters of the State would be reduced to less-than-significant. Without specific mitigation measures containing performance standards CDFW considers impacts to these resources as potentially significant (CEQA Guidelines, §§ 15065, 15380).

To reduce potential impacts to streams, wetlands, and other waters to less-than-significant and comply with Fish and Game Code section 1600 et seq., the Porter-Cologne Water Quality Control Act, and the Clean Water Act, CDFW recommends including the mitigation measure below in the IS/ND.

**Recommended Mitigation Measure 7: Stream and Wetland Mitigation and Resource Agency Permits.** The Project shall be designed to minimize fill of jurisdictional waters. If impacts to any streams cannot be avoided, then prior to the impacts the Project shall submit an LSA notification to CDFW and comply with the LSA Agreement, if issued. Additionally, if impacts to any streams, wetlands, or other waters cannot be avoided, the Project shall obtain authorization from the RWQCB and USACE pursuant to the Porter-Cologne Water Quality Control Act and Clean Water Act sections 401 and 404, as applicable. Impacts to waters, wetlands, and riparian habitat subject to the permitting authority of CDFW, the RWQCB, or the USACE shall be mitigated by providing restoration at a minimum 3:1 restoration to impact ratio in area for permanent impacts and 1:1 ratio for temporary impacts, unless otherwise approved in writing by CDFW or otherwise required by the RWQCB or USACE. A Habitat Mitigation and Monitoring Plan shall be prepared and implemented for the proposed mitigation. The Project shall obtain written approval of this plan from CDFW, the RWQCB, or the USACE as applicable prior to any disturbance of stream or riparian habitat, wetlands, or other waters.



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**Recommended Mitigation Measure 8: LSA Notification and other Resource Agency Permits.** The Project shall notify CDFW pursuant to Fish and Game Code section 1600 et seq. using the Environmental Permit Information Management System (EPIMS, see: <https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS>) for Project activities affecting lakes or streams, associated riparian or otherwise hydrologically connected habitat, and any connected wetlands, and shall comply with the LSA Agreement, if issued. Projects shall also obtain and comply with applicable permits from the RWQCB and USACE pursuant to the Clean Water Act and Porter-Cologne Water Quality Control Act.

**Recommended Mitigation Measure 9: Habitat Restoration and Compensation.** The Project shall implement restoration on-site or off-site to mitigate temporary or permanent impacts to sensitive natural communities, riparian habitat, and wetlands at a minimum 1:1 (restore on-site temporary impacts) or 3:1 (permanent impacts) mitigation to impact ratio for acres and linear feet of impacts, or habitat compensation including permanent protection of habitat at the same ratio through a conservation easement and preparing and funding implementation of a long-term management plan, unless otherwise approved in writing by CDFW.

### III. Editorial Comments and/or Suggestions

CDFW appreciates the inclusion of strategies to restore and enhance marshes along the shoreline of the City to improve climate resilience and habitat for fish and wildlife. CDFW additionally appreciates the inclusion and proposed implementation of an Urban Forest Management Plan that will result in increased canopy cover within the Project area.

### ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDDB. The CNDDDB field survey form can be filled out and submitted online at the following link:

<https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link:

<https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

### ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is

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required in order for the underlying project approval to be operative, vested, and final. (See: Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

## CONCLUSION

CDFW appreciates the opportunity to comment on the IS/ND to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Marcus Griswold, Senior Environmental Scientist (Specialist), at (707) 815-6451 or [Marcus.Griswold@wildlife.ca.gov](mailto:Marcus.Griswold@wildlife.ca.gov).

Sincerely,

DocuSigned by:

*Erin Chappell*

B77E9A6211EF486..

Erin Chappell  
Regional Manager  
Bay Delta Region

Attachment 1: Special-Status Species and Commercially/Recreationally Important Species

ec: Office of Planning and Research, State Clearinghouse (SCH No. 2024040387)  
Craig Weightman, CDFW Bay Delta Region – [Craig.Weightman@wildlife.ca.gov](mailto:Craig.Weightman@wildlife.ca.gov)  
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## REFERENCES

California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS). <https://wildlife.ca.gov/Data/BIOS>. Accessed April 25, 2024.

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### ATTACHMENT 1: Special-Status Species

Species	Status
steelhead - central California coast DPS ( <i>Oncorhynchus mykiss irideus</i> )	Federally Threatened (FT), State SSC
longfin smelt ( <i>Spirinchus thaleichthys</i> )	Proposed FT, State Threatened (ST)
San Francisco dusky-footed woodrat ( <i>Neotoma fuscipes annectens</i> )	SSC
salt-marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	Federal Endangered (FE), State Fully Protected (FP)
Bryant's savannah sparrow ( <i>Passerculus sandwichensis alaudinus</i> )	SSC
saltmarsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	SSC
burrowing owl ( <i>Athene cunicularia</i> )	SSC
Alameda song sparrow ( <i>Melospiza melodia pusillula</i> )	SSC
grasshopper sparrow ( <i>Ammodramus savannarum</i> )	SSC
tricolored blackbird ( <i>Agelaius tricolor</i> )	ST, SSC
white-tailed kite ( <i>Elanus leucurus</i> )	FP
golden eagle ( <i>Aquila chrysaetos</i> )	FP
northern harrier ( <i>Circus hudsonius</i> )	SSC
black skimmer ( <i>Rynchops niger</i> )	SSC
California least tern ( <i>Sternula antillarum browni</i> )	FE, FP
California Ridgway's rail ( <i>Rallus obsoletus obsoletus</i> )	FE, SE, FP
California black rail ( <i>Laterallus jamaicensis coturniculus</i> )	ST, SSC
western snowy plover ( <i>Charadrius nivosus nivosus</i> )	FT, SSC
western mastiff bat ( <i>Eumops perotis californicus</i> )	SSC
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	SSC

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western pond turtle ( <i>Emys marmorata</i> )	Proposed FT, SSC
Crotch's bumble bee ( <i>Bombus crotchii</i> )	State candidate (SC)



# California Environmental Quality Act (CEQA) Greenhouse Gas (GHG) Emissions Thresholds and Guidance

Final

*prepared by*

**City of Sunnyvale**  
City Manager's Office  
456 W. Olive Avenue  
Sunnyvale, CA 94086

*prepared with assistance from*

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**May 2024**

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# 1 Introduction

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## 1.1 GHG Emissions Analyses Under CEQA

The California Environmental Quality Act (CEQA) requires discretionary plans and projects to undergo an environmental review process, which includes an evaluation of plan- or project-related greenhouse gas (GHG) emissions.<sup>1</sup> Section 15183.5 of the CEQA Guidelines establishes a framework for developing a qualified<sup>2</sup> GHG reduction plan to cumulatively reduce GHG emissions and allow lead agencies to analyze and mitigate the effects of plan- and project-level GHG emissions. This GHG Emissions Thresholds and Guidance Document is intended to provide methodological guidance and quantitative thresholds of significance for use by City planners, applicants, consultants, agencies, and members of the public in the preparation of GHG emissions analyses under CEQA for plans and projects located within the City of Sunnyvale.

The City of Sunnyvale (City) prepared a CEQA Guidelines Section 15183.5-consistent GHG reduction plan, titled the Climate Action Playbook Update/Game Plan 2028 (CAP Update/Game Plan 2028), with the goal of achieving 56 percent below 1990 GHG emissions levels by 2030 and carbon neutrality by 2045.<sup>3</sup> While the City Council, City staff, and community will continue to develop an approach to the longer-term goal of carbon neutrality, the Climate Action Playbook Update/Game Plan 2028 includes specific measures and actions (i.e., plays and moves) to achieve the shorter-term communitywide emissions reduction target of 56 percent below 1990 emissions by 2030, which is consistent with and exceeds California's goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 (pursuant to Senate Bill [SB] 32). The City has also adopted a goal to achieve carbon neutrality by 2045, aligning with California's goal of carbon neutrality by 2045 pursuant to Assembly Bill (AB) 1279. See Figure 1 for a representation and comparison of the Sunnyvale and California GHG emissions reduction targets. Therefore, implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would result in GHG emissions reductions in a manner that exceeds the California 2030 goal.

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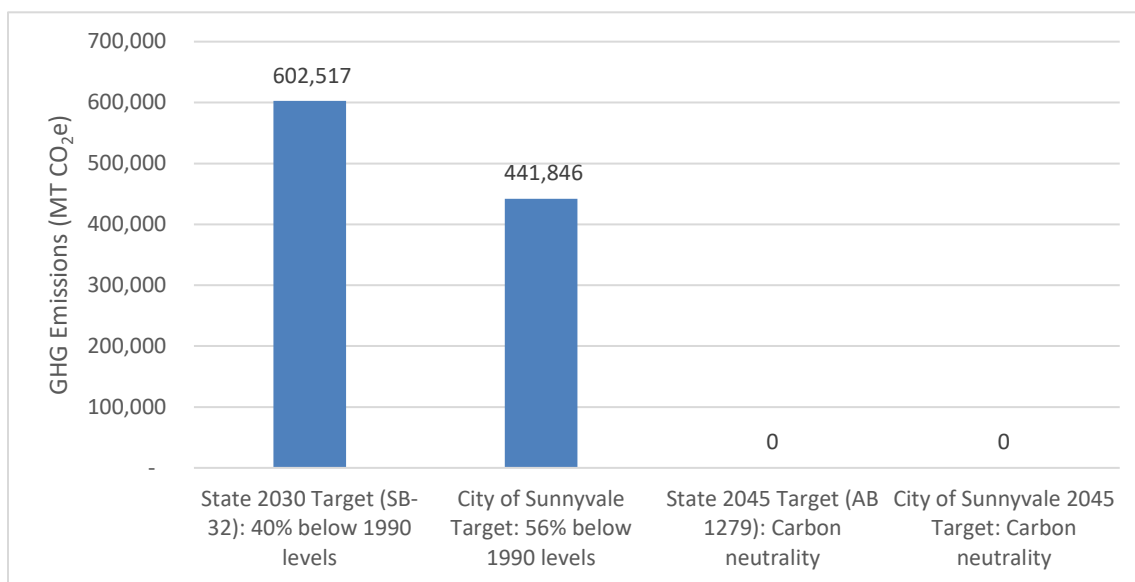
<sup>1</sup> Refer to Appendix A for an overview of GHG emissions and climate change.

<sup>2</sup> To be a qualified CAP, a CAP must meet the requirements of CEQA Guidelines Section 15183.5, as further discussed in Section 1.2.

<sup>3</sup> Carbon neutrality is defined as net zero carbon emissions, which is achieved either by balancing carbon emissions with carbon removal or by completely eliminating carbon emissions.

City of Sunnyvale  
**CEQA GHG Emissions Thresholds and Guidance**

**Figure 1 Sunnyvale and California GHG Emissions Reduction Targets**



Sunnyvale’s 2030 GHG emissions reduction target was developed to provide substantial progress towards achieving the City’s longer-term carbon neutrality target and contribute substantial progress towards meeting the State’s GHG reduction goals identified under SB 32 and AB 1279. Consistent with this process, the Sunnyvale Climate Action Playbook Update/Game Plan 2028 includes procedures to evaluate Sunnyvale’s GHG emissions in light of the trajectory of the Playbook’s targets to assess its “substantial progress” toward achieving long-term reduction targets identified in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and State legislation. The Sunnyvale Climate Action Playbook Update/Game Plan 2028 also includes commitments and mechanisms to adopt additional policies to achieve further GHG emissions reductions necessary to avoid interference with, and make substantial progress toward, long-term Sunnyvale and California goals. This approach is important, because these targets have been set at levels that achieve California’s fair share of international emissions reduction targets that would stabilize global climate change effects and avoid the adverse environmental consequences of climate change.

To support progress toward Sunnyvale’s longer-term carbon neutrality goal, plans and projects within the City that undergo CEQA review will need to demonstrate consistency with targets in the Sunnyvale Climate Action Playbook Update/Game Plan 2028, which is a qualified GHG Emissions Reduction Plan (consistent with CEQA Guidelines Section 15183.5) upon adoption of its CEQA review document (specifically the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds Initial Study-Negative Declaration [IS-ND]), and approval of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 by City Council. Chapter 2, *Climate Action Plan Update/Game Plan 2028 Summary*, provides an overview of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and the associated GHG emissions inventories, reduction measures, and forecasts included therein. In addition, Chapter 3, *Regulatory and Legal Setting*, offers an overview of relevant regulations and case law pertaining to the analysis of GHG emissions consistent with CEQA and the CEQA Guidelines.

Plans and projects that are consistent with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 demographic (i.e., residents and employees) projections and land use assumptions that are based on demographic data contained in Plan Bay Area 2040, would be able to tier from the

adopted Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Emissions Thresholds IS-ND pursuant to CEQA Guidelines Section 15183.5 with regard to CEQA GHG emissions analysis. To streamline this CEQA GHG emissions analysis process, the City has prepared a CEQA GHG Emissions Analysis Compliance Checklist that can be utilized in plan- and project-level CEQA review documents to determine whether proposed plans and projects are consistent with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 GHG emissions reduction strategy. Chapter 4, *Determining Consistency with Update/Game Plan 2028*, includes guidance on how to navigate this consistency determination process.

For plans or projects that are not consistent with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 demographic projections and land use assumptions or are not consistent with the CEQA GHG Emissions Analysis Compliance Checklist, a different methodology and assessment utilizing quantitative thresholds of significance would be necessary to evaluate GHG emissions impacts. Chapter 5, *Utilizing Quantitative CEQA GHG Thresholds*, includes guidance on how to utilize the quantitative thresholds that were developed for purposes of evaluating the level of significance of GHG emissions impacts.<sup>4</sup> Furthermore, Chapter 6, *Quantifying GHG Emissions*, provides direction regarding how to quantify a plan or project's GHG emissions for comparison to the applicable threshold of significance.

The Sunnyvale Climate Action Playbook Update/Game Plan 2028 acknowledges that additional actions beyond those identified in the plan will be required to achieve its long-term goal of carbon neutrality by 2045. As a result, the plan provides a mechanism for updating and adopting a new Game Plan every five years (with opportunities to adjust as needed based on Game Plan progress) in order to incorporate new measures and actions (i.e., plays and moves) and technologies that will further move Sunnyvale toward meeting its longer-term carbon neutrality target. Chapter 7, *Emission reduction credits that are specific to the proposed plan/project* (e.g., use of recycled water, increased density, installation of energy and/or water-efficient appliances, integration of below market rate housing, etc.) should only be included for the proposed plan/project scenario. In addition, care should be taken to identify any emission reduction credits that might be unique to the existing land use designation that would not apply to the proposed plan/project. For example, if the existing land use designation allows for single-family residences and the proposed land use designation would allow for only commercial uses, then the existing scenario should include the emission reduction credit associated with the California 2022 Building Energy Efficiency Standards requirements for PV solar panels on residential uses that are three stories or less whereas the proposed plan/project scenario should not include this credit unless PV solar panels are included as a plan/project design feature.

Moving into the Future, offers further explanation of how CEQA review of plans and projects could be affected by future updates and/or iterations of the Sunnyvale Climate Action Playbook Update/Game Plan 2028.

## 1.2 Qualified GHG Emissions Reduction Plan

According to CEQA Guidelines Section 15183.5, project-specific environmental documents can tier from, or incorporate by reference, the existing programmatic review of a qualified GHG emissions reduction plan. This process allows for project-level evaluation of GHG emissions through the comparison of a project's consistency with the GHG emissions reduction strategy included in the

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<sup>4</sup> In compliance with CEQA Guidelines Section 15064.7(b), this guidance document and the quantitative thresholds contained herein will be presented to the City Council for formal adoption, which includes a public input opportunity.

City of Sunnyvale  
**CEQA GHG Emissions Thresholds and Guidance**

respective qualified GHG emissions reduction plan. To meet the requirements of CEQA Guidelines Section 15183.5, a qualified GHG emissions reduction plan must include the following:

1. Quantify existing and projected GHG emissions within the plan area;
2. Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
3. Identify and analyze sector specific GHG emissions within the plan's geographic area;
4. Specify measures or a group of measures, including performance standards, that if implemented, would collectively achieve the specified emissions level;
5. Establish a tool or mechanism to monitor progress and to require amendment if the plan is not achieving specified levels; and
6. Be adopted in a public process following environmental review.

Development projects can demonstrate consistency with a qualified GHG emissions reduction plan if they are consistent with the plan's assumptions regarding future growth projections and consistent with the plan's GHG emissions reduction measures.<sup>5</sup> Projects consistent with the qualified GHG reduction plan, including conformance with performance measures applicable to the project, would not require additional GHG emissions analysis or mitigation under CEQA Guidelines Sections 15064(h) and 15183.5(b)(2). The City of Sunnyvale has developed the CEQA GHG Emissions Analysis Compliance Checklist to assist with determining project consistency with the Sunnyvale Climate Action Playbook Update/Game Plan 2028. The checklist is intended to provide individual projects the opportunity to demonstrate that they are minimizing GHG emissions while ensuring new development achieves its proportion of emissions reductions consistent with the assumptions of the Sunnyvale Climate Action Playbook Update/Game Plan 2028. Project consistency with a GHG emissions reduction plan can also be demonstrated through a quantitative analysis that demonstrates the project would not impede (or would facilitate) Sunnyvale's ability to meet its GHG emissions reduction targets.

Table 1 summarizes the consistency of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 with these requirements for year 2030 (the next California milestone target year for GHG emission reductions). As shown in Table 1, upon adoption of the IS-ND and approval of the plan by City Council, the Sunnyvale Climate Action Playbook Update/Game Plan 2028 will meet the requirements of a qualified GHG emission reduction plan per CEQA Guidelines Section 15183.5(b)(1) for projects with buildout years through 2030.

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<sup>5</sup> CAPs typically utilize growth projections from the local jurisdiction's General Plan or applicable Metropolitan Planning Organization's regional demographic forecast.

**Table 1 CAP Update/Game Plan 2028 Consistency with CEQA Guidelines Section 15183.5(b)(1) for 2030**

CEQA Guidelines Section 15183.5(b)(1) Requirement <sup>1</sup>	Climate Action Plan Update/Game Plan 2028 Consistency
Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.	<b>Consistent.</b> The Sunnyvale CAP Update/Game Plan 2028 includes communitywide GHG emissions inventories for year 2019 and forecasts GHG emissions for years 2030 and 2045.
Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable.	<b>Consistent.</b> A key aspect of a qualified GHG emissions reduction plan is substantial evidence that the identified GHG emissions reduction target establishes a threshold where GHG emissions are not cumulatively considerable. The AEP (2016) Beyond Newhall and 2020 white paper identifies this threshold as being a local target that aligns with the State legislative targets. The Sunnyvale Climate Action Playbook Update/Game Plan 2028 establishes a long-term aspirational goal of carbon neutrality by 2045, and as discussed in Section 2.3, <i>GHG Emissions Forecast</i> , implementation of the plan will achieve a 56 percent reduction in 1990 emissions levels by 2030. Therefore, this local target is more stringent than the State target of a 40 percent emission reduction in 1990 levels by 2030.
Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.	<b>Consistent.</b> The Sunnyvale Climate Action Playbook Update/Game Plan 2028 breaks down its inventories and forecasts into ten sectors (commercial natural gas, residential natural gas, on-road transportation, off-road transportation, solid waste, commercial electricity, residential electricity, wastewater, water, and Caltrain).
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.	<b>Consistent.</b> The Sunnyvale Climate Action Playbook Update/Game Plan 2028 specifies measures and actions (i.e., plays and moves) that the City will enact and implement between 2024 and 2030 to meet its 2030 GHG emissions target. As discussed in Section 2.3, <i>GHG Emissions Forecast</i> , implementation of the plan will achieve a 56 percent reduction in 1990 emissions levels by 2030, which is more stringent than the State target of a 40 percent emission reduction in 1990 levels by 2030 and demonstrates substantial progress by 2030 toward achieving Sunnyvale's longer-term goal of carbon neutrality by 2045.
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.	<b>Consistent.</b> The Sunnyvale Climate Action Playbook Update/Game Plan 2028 includes a process to complete community GHG emissions inventories every five years. The inventories will allow the City to measure progress towards meeting the Sunnyvale Climate Action Playbook Update/Game Plan 2028 goals. If an inventory indicates that the City is not on track to meet the Sunnyvale Climate Action Playbook Update/Game Plan 2028 GHG emissions goals, additional updates may be required at that time to increase emissions reductions measures and actions (i.e., plays and moves) and maintain the Sunnyvale Climate Action Playbook Update/Game Plan 2028's status as a CEQA qualified GHG emissions reduction plan.
Be adopted in a public process following environmental review.	<b>Consistent.</b> The City prepared an IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028 that was circulated for public review and comment and adopted prior to approval of the Sunnyvale CAP Update/Game Plan 2028 and CEQA GHG Emissions Thresholds by City Council.
Source: Compiled by Rincon in 2024.	

## 2 Climate Action Plan Update/Game Plan 2028 Summary

The following sections provide an overview of the Sunnyvale Climate Action Playbook Update/Game Plan 2028, including the 2019 communitywide GHG emissions inventory, the communitywide GHG emissions forecast through 2045, and the proposed GHG emission reduction strategy.

### 2.1 Communitywide GHG Emissions Inventory

The City has completed a communitywide GHG emissions inventory for 2019, which is summarized in Table 2. Table 2 also provides estimated 1990 emissions levels for informational purposes. As shown therein, communitywide GHG emissions declined by approximately 29 percent between 1990 and 2019.

**Table 2 Sunnyvale 1990 and 2019 Communitywide GHG Emissions Levels**

Sector	1990 <sup>1</sup> (MT of CO <sub>2</sub> e)	2019 (MT of CO <sub>2</sub> e)	Percent Change from 1990 to 2019
Electricity (residential)	N/A	282	N/A
Electricity (commercial)	N/A	1,298	N/A
Natural Gas (residential)	N/A	103,017	N/A
Natural Gas (commercial)	N/A	146,412	N/A
On-road Transportation	N/A	373,498	N/A
Off-road Transportation	N/A	41,425	N/A
Solid Waste	N/A	48,506	N/A
Water	N/A	23	N/A
Wastewater	N/A	802	N/A
Caltrain	N/A	1,119	N/A
<b>Total</b>	<b>1,004,194</b>	<b>716,382</b>	<b>-29%</b>

MT of CO<sub>2</sub>e = metric tons of carbon dioxide equivalents

Note: Numbers are rounded to the nearest ten.

<sup>1</sup> 1990 GHG emissions were sourced from the Sunnyvale Climate Action Playbook Update/Game Plan 2028.

### 2.2 GHG Emission Reduction Strategy

To achieve Sunnyvale's long-term aspirational goal of carbon neutrality by 2045, the Sunnyvale Climate Action Playbook Update/Game Plan 2028 includes a series of Plays and Moves that are intended to reduce communitywide GHG emissions by approximately 56 percent below 1990 levels by 2030, which provides substantial progress toward meeting the City's longer-term carbon neutrality goal while also exceeding the State's 2030 target. The Sunnyvale Climate Action Playbook Update/Game Plan 2028 acknowledges that additional Plays and Moves beyond those identified in the plan will be necessary to achieve the long-term aspirational goal of carbon neutrality and, thus, provides a mechanism for updating and adopting a new climate action plan update/game plan every

five years in order to incorporate new plays and moved and technologies that will further Sunnyvale toward meeting its long-term aspirational goal of carbon neutrality.

As part of the Sunnyvale Climate Action Playbook Update process, the City of Sunnyvale has developed a set of strategies to reduce communitywide GHG emissions across various sectors to achieve the Sunnyvale 2030 GHG emission reduction target and make substantial progress towards the Sunnyvale 2045 target. Each strategy is supported by a set of plays and moves that provide measurable GHG emissions reduction that is supported by substantial evidence. The structure of the Strategies, Plays, and Moves are as follows:

- **Strategies** establish approaches to reduce GHG emissions across various sectors that include building energy, transportation, waste/water, and carbon sequestration. Sunnyvale has also developed strategies related to community engagement and climate adaptation.
- **Plays** identify specific goals (i.e., activity data targets by 2030 and 2045) to address GHG emissions in each sector. Plays have measurable targets that would help assess progress towards goals.
- **Moves** define the programs, policies, funding pathways, and other specific actions that the City would implement to address climate change.

The Plays and Moves can be either quantitative or supportive, defined as follows:

- **Quantitative:** Quantitative Plays result in direct and measurable GHG emissions reductions when their Moves, backed by substantial evidence, are implemented. GHG emissions reductions from these Plays and Moves are justified by case studies, scientific articles, calculations, and other third-party substantial evidence that establish the effectiveness of the reduction Moves. Quantitative Plays can be summed to quantify how the City of Sunnyvale will meet its 2030 GHG emission reduction target and demonstrate progress towards the 2045 target.
- **Supportive:** Supportive Plays and Moves may also be quantifiable and have substantial evidence to support their overall contribution to GHG emission reductions. However, due to one of several factors – including a low GHG emission reduction benefit, indirect GHG emission reduction benefit, or potential for double-counting – they have not been quantified and do not contribute directly to achieving and making progress towards the City’s GHG emission reduction targets. Despite not being quantified, supportive Plays are nevertheless critical to the overall success of the Playbook and provide support so that the quantitative Plays will be successfully implemented.

Table 3 summarizes the GHG emissions reductions that are anticipated to be achieved by 2030 by the identified Plays and Moves in the Sunnyvale Climate Action Playbook Update/Game Plan 2028, in addition to State laws and programs. As shown therein, implementation of State laws and programs as well as the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would reduce 2030 communitywide emissions by approximately 58 percent below 1990 levels, to approximately 419,818 MT of CO<sub>2</sub>e in 2030.

City of Sunnyvale  
**CEQA GHG Emissions Thresholds and Guidance****Table 3 Sunnyvale GHG Emissions Reductions by 2030**

<b>Source</b>	<b>Annual GHG Emissions (MT of CO<sub>2</sub>e)</b>
1990 Baseline Emissions <sup>1</sup>	1,004,194
Business-as-Usual 2030 Emissions <sup>2</sup>	931,298
State Laws/Programs	(98,206)
Clean Electricity and Buildings Playbook Update Plays	(188,022)
Transportation & Sustainable Land Use Playbook Update Plays	(179,994)
Resource Management Playbook Update Plays	(45,258)
<b>Total GHG Emissions Reductions (from Business-as-Usual)</b>	<b>(413,274)</b>
<b>Remaining 2030 GHG Emissions</b>	<b>419,818</b>
<b>Percent Reduction below 1990 Levels</b>	<b>58%</b>

( ) denotes a negative number; numbers in table may not add to the total exactly due to rounding.

MT CO<sub>2</sub>e = metric tons of carbon dioxide equivalents

<sup>1</sup> See Table 2.

<sup>2</sup> See

Table 4.

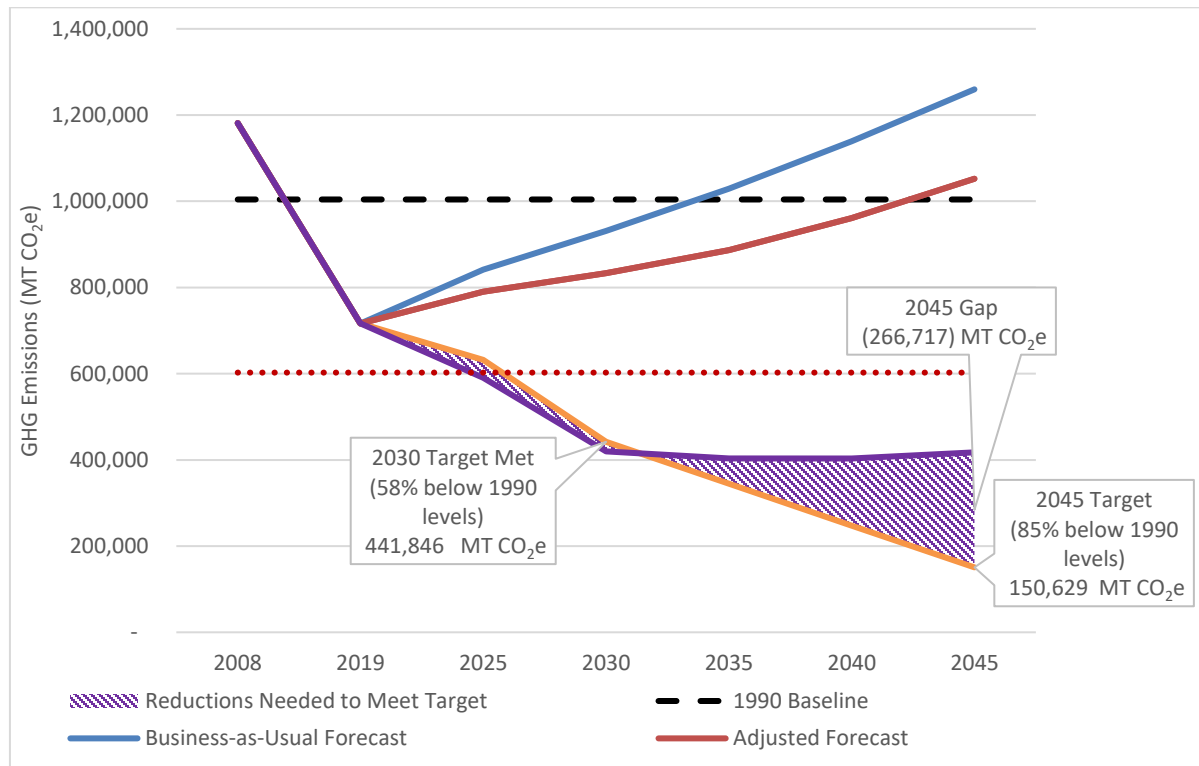
Source: City of Sunnyvale Playbook Update and GHG Emissions Reductions Technical Evidence

## 2.3 GHG Emissions Forecast

Figure 2 and Table 4 summarize the communitywide GHG emissions forecast under three scenarios: 1) business-as-usual, 2) implementation of State laws and programs, and 3) implementation of State laws and programs and the Sunnyvale Climate Action Playbook Update/Game Plan 2028. As shown therein, under the business-as-usual scenario, communitywide GHG emissions are forecasted to increase by approximately 75 percent between 2019 and 2045 based on economic and population growth. However, with implementation of State laws and programs, communitywide GHG emissions would increase by approximately 47 percent between 2019 and 2045. Furthermore, full implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 alongside State laws and programs would reduce communitywide GHG emissions by approximately 41 percent below 2019 levels by 2030 and by approximately 42 percent below 2019 levels by 2045.



**Figure 2 Sunnyvale GHG Emissions Forecast Through 2045**



City of Sunnyvale  
**CEQA GHG Emissions Thresholds and Guidance****Table 4 Sunnyvale GHG Emissions Forecast Through 2045**

<b>Sector</b>	<b>2019 (MT CO<sub>2</sub>e)</b>	<b>2025 (MT CO<sub>2</sub>e)</b>	<b>2030 (MT CO<sub>2</sub>e)</b>	<b>2035 (MT CO<sub>2</sub>e)</b>	<b>2040 (MT CO<sub>2</sub>e)</b>	<b>2045 (MT CO<sub>2</sub>e)</b>
<b>Business-as-Usual GHG Emissions</b>						
Residential Electricity	282	376	440	514	601	703
Nonresidential Electricity	1,298	1,554	1,677	1,809	1,951	2,105
Residential Natural Gas	103,017	137,329	160,594	187,800	219,615	256,820
Nonresidential Natural Gas	146,412	175,333	189,140	204,035	220,103	237,437
On-road Vehicles	373,498	417,254	457,608	501,864	550,401	603,632
Off-road Equipment	41,425	47,252	52,510	55,947	59,595	62,011
Waste	48,506	59,767	66,556	74,267	83,032	93,002
Water	23	29	33	37	42	48
Wastewater	802	1,016	1,145	1,291	1,457	1,647
<b>Total</b>	<b>716,382</b>	<b>841,327</b>	<b>931,298</b>	<b>1,029,366</b>	<b>1,138,832</b>	<b>1,259,700</b>
<b>GHG Emissions After Implementation of State Laws/Programs<sup>1</sup></b>						
Residential Electricity	282	630	537	147	81	0
Nonresidential Electricity	1,298	2,562	2,149	580	313	0
Residential Natural Gas	103,017	134,927	156,564	181,865	211,453	246,054
Nonresidential Natural Gas	146,412	175,333	189,140	204,035	220,103	237,437
On-road Vehicles	373,498	367,329	362,876	366,845	382,724	409,817
Off-road Equipment	41,425	47,252	52,510	55,947	59,595	62,011
Waste	48,506	59,767	66,556	74,267	83,032	93,002
Water	23	23	20	6	3	0
Wastewater	802	1,016	1,145	1,291	1,457	1,647
Caltrain	1,119	1,417	1,596	1,800	2,032	2,296
<b>Total</b>	<b>716,382</b>	<b>790,257</b>	<b>833,092</b>	<b>886,784</b>	<b>960,795</b>	<b>1,052,263</b>
<b>GHG Emissions After Implementation of State Laws/Programs and Playbook Update</b>						
Residential Electricity	282	630	(447)	(150)	(93)	0

## Climate Action Plan Update/Game Plan 2028 Summary

Nonresidential Electricity	1,298	2,562	(169)	(56)	(35)	0
Residential Natural Gas	103,017	88,599	63,467	44,664	35,903	33,221
Nonresidential Natural Gas	146,412	126,827	97,516	88,448	79,513	74,125
On-road Vehicles	373,498	306,400	198,635	205,342	217,352	234,741
Off-road Equipment	41,425	43,202	36,757	39,163	41,717	43,408
Waste	48,506	19,601	21,298	23,226	25,417	27,909
Water	23	23	20	6	3	0
Wastewater	802	1,016	1,145	1,291	1,457	1,647
Caltrain	1,119	1,417	1,596	1,800	2,032	2,296
<b>Total</b>	<b>716,382</b>	<b>590,277</b>	<b>419,818</b>	<b>403,734</b>	<b>403,267</b>	<b>417,347</b>

MT CO<sub>2</sub>e = metric tons of carbon dioxide equivalents

( ) denotes a negative number; numbers in table may not add to the total exactly due to rounding.

State laws and programs include State vehicle fuel efficiency standards, the Renewable Portfolio Standard, and triennial updates of Title 24.

Source: Sunnyvale, City of. 2024. Sunnyvale Through 2045 GHG Forecasts.

At this time, the State has codified a target of reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and has developed the 2022 Climate Change Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2045 goal of carbon neutrality established by AB 1279.

While State and regional regulations related to energy and transportation systems, along with the State's Cap and Trade program, are designed to be set at limits to achieve most of the GHG emissions reductions needed to achieve the State's long-term goals, local governments can do their fair share toward meeting the State's goals by siting and approving projects that accommodate planned population growth and projects that are GHG-efficient. The Association of Environmental Professional (AEP) Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans and legislation.

Sunnyvale has adopted a longer-term goal of achieving carbon neutrality by 2045 and has proposed the Sunnyvale Climate Action Playbook Update/Game Plan 2028 as a pathway to make progress toward this goal. Implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would achieve an approximately 58 percent reduction in communitywide GHG emissions below 1990 levels by 2030. Therefore, the City's longer-term target of carbon neutrality and the associated Sunnyvale Climate Action Playbook Update/Game Plan 2028 establish a trajectory that provides GHG emissions reductions greater than those required by SB 32 for 2030. Because SB 32 is considered an interim target toward meeting the State long-term goals, implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would make substantial progress toward meeting the State's long-term goal. Avoiding interference with, and making substantial progress toward, these long-term State targets is important, because these targets have been set at levels that achieve California's fair share of international emissions reduction targets that would

City of Sunnyvale

**CEQA GHG Emissions Thresholds and Guidance**

stabilize global climate change effects and avoid the adverse environmental consequences described in Appendix A.

## 3 Regulatory and Legal Setting

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The following regulations, executive orders, and case law pertain to the analysis of GHG emissions consistent with CEQA and the CEQA Guidelines.

### 3.1 Relevant CEQA Guidelines Sections

Pursuant to the requirements of SB 97, the California Natural 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, which were last updated in December 2018, 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 GHG emissions and climate change impacts.

Based on Appendix G of the CEQA Guidelines, impacts related to GHG emissions generated by a proposed plan/project would be significant if the plan/project would:

- 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 emissions of GHGs.

The vast majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a plan/project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a plan/project are limited. As discussed in Appendix A, the adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions and climate change are significant. Therefore, per CEQA Guidelines Section 15064.4(b), the analysis of GHG emissions under CEQA typically involves an analysis of whether a plan or project's contribution towards an impact would be 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 (CEQA Guidelines Section 15064[h][1]).

The following sections of the CEQA Guidelines pertain to the creation of significance thresholds and the analysis of a plan/project's GHG emissions.

#### **CEQA Guidelines Section 15064(b)**

- (1) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.
- (2) Thresholds of significance, as defined in Section 15064.7(a), may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the

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lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant.<sup>6</sup>

**CEQA Guidelines Section 15064.4**

- (a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to
  - (1) Quantify GHG emissions resulting from a project; and/or
  - (2) Rely on a qualitative analysis or performance-based standards.
- (b) In determining the significance of a project's GHG emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to Statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and State regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from GHG emissions on the environment:
  - (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
  - (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
  - (3) The extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of GHG emissions (see, e.g., section 15183.5[b]). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.
- (c) A lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a

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<sup>6</sup> 2022 CEQA Guidelines.

model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.<sup>7</sup>

### **CEQA Guidelines Section 15064.7**

- (a) A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.
- (b) Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. Lead agencies may also use thresholds on a case-by-case basis as provided in Section 15064(b)(2).
- (c) When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.
- (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all the following:
  - (1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
  - (2) adopted for the purpose of environmental protection;
  - (3) addresses the environmental effect caused by the project; and,
  - (4) applies to the project under review.<sup>8</sup>

### **CEQA Guidelines Section 15183.5**

- (a) Lead agencies may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long-range development plan, or a separate plan to reduce GHG emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of GHG emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs),

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<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

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15175–15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

- (b) Plans for the Reduction of GHG Emissions. Public agencies may choose to analyze and mitigate significant GHG emissions in a plan for the reduction of GHG emissions or similar document. A plan to reduce GHG emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.
  - (1) Plan Elements. A plan for the reduction of GHG emissions should:
    - (A) Quantify GHG 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 GHG emissions from activities covered by the plan would not be cumulatively considerable;
    - (C) Identify and analyze the GHG 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.
  - (2) Use with Later Activities. A plan for the reduction of GHG emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a GHG reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the specified requirements in the plan for the reduction of GHG emissions, an EIR must be prepared for the project.
- (c) Special Situations. As provided in Public Resources Code sections 21155.2 and 21159.28, environmental documents for certain residential and mixed use projects, and transit priority projects, as defined in section 21155, that are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in an applicable sustainable communities strategy or alternative planning strategy need not analyze global warming impacts resulting from cars and light duty trucks. A lead agency should consider whether such projects may result in GHG emissions resulting from other sources, however, consistent with these Guidelines.<sup>9</sup>

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<sup>9</sup> Ibid.



### **CEQA Guidelines Section 15126.4(c)**

Consistent with section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of GHG emissions. Measures to mitigate the significant effects of GHG emissions may include, among others:

- (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
- (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F;
- (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
- (4) Measures that sequester GHGs;
- (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of GHG emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.<sup>10</sup>

## **3.2 Relevant State and Regional GHG Reduction Targets**

### **Executive Order S-03-05**

On June 1, 2005, the governor issued EO S-03-05, which established a statewide goal of reducing GHG emissions to 1990 levels by 2020 and created the Climate Action Team. The 2020 GHG reduction target contained in EO S-03-05 was later codified by Assembly Bill (AB) 32.

### **Assembly Bill 32**

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the State's goal of reducing Statewide GHG emissions to 1990 levels by 2020 and requires the California Air Resources Board (CARB) to prepare a Scoping Plan that outlines the main State strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of Statewide GHG emissions. Based on this guidance, CARB approved a 1990 Statewide GHG level and 2020 limit of 427 million metric tons (MMT) of CO<sub>2</sub>e. The Scoping Plan was approved by CARB on December 11, 2008 and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.<sup>11</sup>

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 Statewide goals. The update highlighted California's progress toward meeting the

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<sup>10</sup> Ibid.

<sup>11</sup> CARB. 2008. *Climate Change Scoping Plan*. December 2008.  
[https://www.arb.ca.gov/cc/scopingplan/document/adopted\\_scoping\\_plan.pdf](https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf).

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“near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State’s longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use.<sup>12</sup>

## **Senate Bill 32**

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the Statewide reduction of GHG emissions 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 programs and policies, such as SB 350 and SB 1383. 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 Statewide per capita goals of six MT of CO<sub>2</sub>e by 2030 and two MT of CO<sub>2</sub>e 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.<sup>13</sup>

## **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 emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO’s Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as “transit priority projects” would receive incentives to streamline CEQA processing.

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) was assigned targets of a 7 percent reduction in GHGs from transportation sources by 2020 and a 15 percent reduction in GHGs from transportation sources by 2035. ABAG adopted the 2050 RTP (Plan Bay Area 2050) in October 2021, which includes the region’s SCS and meets the requirements of SB 375.<sup>14</sup>

## **Assembly Bill 1279**

AB 1279, signed in September 2022, builds upon EO B-55-18, which originally established California’s 2045 goal of carbon neutrality and tasked CARB with including a pathway toward the EO B-55-18 carbon neutrality goal in the 2022 Scoping Plan. AB 1279 codified the statewide carbon neutrality goal into a legally binding requirement for California to achieve carbon neutrality no later

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<sup>12</sup> CARB. 2014. *First Update to the Climate Change Scoping Plan*. May 15, 2014. [https://ww3.arb.ca.gov/cc/scopingplan/2013\\_update/first\\_update\\_climate\\_change\\_scoping\\_plan.pdf](https://ww3.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf).

<sup>13</sup> CARB. 2017. 2017 Climate Change Scoping Plan. [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

<sup>14</sup> Association of Bay Area Governments. October 2021. Plan Bay Area 2050.

than 2045 and ensure 85 percent<sup>15</sup> GHG emissions reduction under that goal. This goal is in addition to the existing statewide GHG emission reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

### **Senate Bill 1020**

Established in 2002 under SB 1078, and accelerated by SB 107 (2006), SB X 1-2 (2011), SB 100 (2018), and SB 1020, California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to transition the electricity supply to renewable resources. The RPS requires energy service providers to supply renewable energy as follows: 90 percent of retail sale electricity and 100 percent of electricity procured to serve state agencies by 2035, 95 percent by 2040, and 100 percent by 2045. The CPUC and the CEC are jointly responsible for implementing the program.

### **Senate Bill 1383**

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 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.

## **3.3 Relevant GHG Emissions Analysis Case Law**

### **Friends of Oroville v. City of Oroville (Case No. 070448)**

The Third District Court of Appeal decision in the *Friends of Oroville v. City of Oroville* case was published on August 19, 2013. This decision evaluated the methodology used to analyze GHG emissions in an Environmental Impact Report (EIR) prepared for a Wal-Mart Supercenter development project that included replacing an existing Wal-Mart store with a Wal-Mart Supercenter in Oroville in Butte County. The EIR used consistency with the AB 32 emissions reduction target as its significance threshold for evaluating the project's GHG emissions and compared the magnitude of the proposed project's emissions to statewide 2004 emission levels as part of the analysis. The Court found that EIR applied "a meaningless, relative number to determine insignificant impact" rather than evaluating the project's emissions in light of the AB 32 emissions reduction target. The Court also found that the EIR "misapplied the [AB] 32 threshold-of-significance standard by [1] failing to calculate the GHG emissions for the existing Wal-Mart and [2] failing to quantitatively or qualitatively ascertain or estimate the effect of the Project's mitigation measures on GHG emissions." The Court determined that the EIR could and should have performed these

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<sup>15</sup> To achieve carbon neutrality, the remaining 15 percent of GHG emissions would be achieved through carbon capture and sequestration efforts.

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quantifications to adequately evaluate the project's GHG emissions using the AB 32 emissions reduction target.

**Sierra Club v. County of San Diego (Case No. 37-2018-00043084-CU-TT-CTL)**

The Fourth District Court of Appeal decision in the *Sierra Club v. County of San Diego* case was published on October 29, 2014. This decision evaluated the adequacy of the CAP prepared by the County of San Diego to satisfy Mitigation Measure CC-1.2 of the program EIR prepared for its 2011 General Plan. To reduce GHG emissions impacts of the 2011 General Plan to a less-than-significant level, Mitigation Measure CC-1.2 required the preparation of a CAP that would include "more detailed GHG emissions reduction targets and deadlines" and that would "achieve comprehensive and enforceable GHG emissions reduction of 17 percent (totaling 23,572 MT of CO<sub>2</sub>e) from County operations from 2006 by 2020 and 9 percent reduction (totaling 479,717 MT of CO<sub>2</sub>e) in community emissions from 2006 by 2020." The Court found the CAP did not include enforceable and feasible GHG emission reduction measures that would achieve the necessary emissions reductions; therefore, the CAP did not meet the requirements of Mitigation Measure CC-1.2 and would not ensure that the mitigation measure would reduce GHG emissions to a less-than-significant impact. In addition, the Court found that the County failed to evaluate the environmental impacts of the CAP and its associated thresholds of significance under CEQA.

**Center for Biological Diversity v. California Department of Fish and Wildlife (Case No. 217763)**

The California Supreme Court's decision in the *Center for Biological Diversity v. California Department of Fish and Wildlife* case was published on November 30, 2015. This decision evaluated the methodology used to analyze GHG emissions in an EIR prepared for the Newhall Ranch development project that included approximately 20,885 dwelling units with 58,000 residents on 12,000 acres of undeveloped land in Los Angeles County. The EIR used a business-as-usual approach to evaluate whether the project would be consistent with the AB 32 Scoping Plan. The Court found there was insufficient evidence in the record of that project to explain how a project that reduces its GHG emissions by the same percentage as the business-as-usual reduction identified for the State to meet its Statewide targets supported a conclusion that project-level impacts were below the level of significance.

The California Supreme Court suggested regulatory consistency as a pathway to compliance by stating that a lead agency might assess consistency with the State's GHG reduction goals by evaluating for compliance with regulations designed to reduce GHG emissions. This approach is consistent with CEQA Guidelines Section 15064.4(b), which provides that a determination of an impact is not cumulatively considerable to the extent to which the project complies with regulations or requirements implementing a Statewide, regional, or local plan to reduce or mitigate GHG emissions. The Court also found that a lead agency may rely on numerical and efficiency-based thresholds of significance for GHG emissions, if supported by substantial evidence.

**Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego (Case No. 072406)**

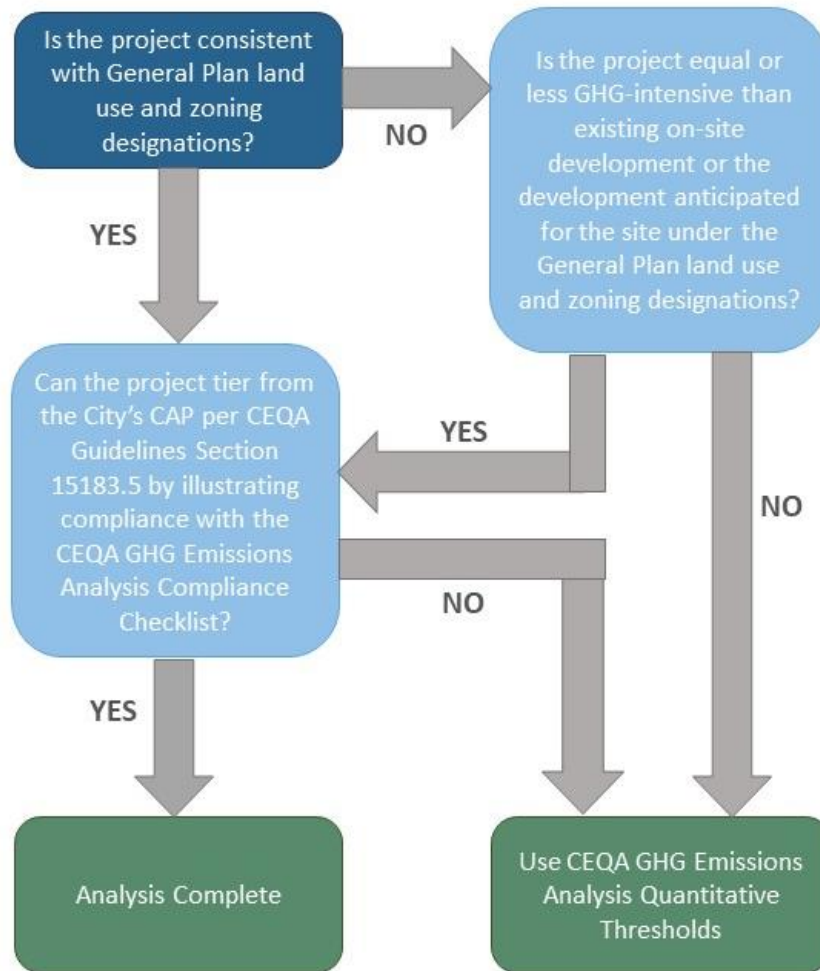
The Fourth District Court of Appeal decision in the *Golden Door Properties, LLC v. County of San Diego* case (published on September 28, 2018) evaluated the County of San Diego's 2016 Guidance Document's GHG efficiency metric, which establishes a generally applicable threshold of significance for proposed projects. The Court held that the County of San Diego is barred from using its 2016

Guidance Document's threshold of significance of 4.9 MT of CO<sub>2</sub>e per service person per year for GHG analysis. The Court stated that the document violated CEQA because it was not adopted formally by ordinance, rule, resolution, or regulation through a public review process per CEQA Guidelines Section 15064.7(b). The Court also found that the threshold was not supported by substantial evidence that adequately explained how a service population threshold derived from Statewide data could constitute an appropriate GHG metric to be used for all projects in unincorporated San Diego County. Nevertheless, lead agencies may make plan- or project-specific GHG emissions threshold determinations.

## 4 Determining Consistency with the CAP Update/Game Plan 2028

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As discussed in Chapter 2, *Climate Action Plan Update/Game Plan 2028 Summary*, upon public adoption of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 IS-ND and approval of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 by City Council, the Sunnyvale Climate Action Playbook Update/Game Plan 2028 will be a qualified GHG emission reduction plan per the requirements of CEQA Guidelines Section 15183.5 for year 2030. Therefore, the Sunnyvale Climate Action Playbook Update/Game Plan 2028 can be utilized to streamline the GHG emissions analysis for plans and projects with buildout years through 2030. Projects that are consistent with the demographic projections and land use assumptions in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 can utilize the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist to demonstrate consistency with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 GHG emissions reduction strategy, and if consistent, can tier from the environmental review contained in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 IS-ND. In doing so, these projects would result in less-than-significant GHG emissions and not result in a cumulatively considerable GHG emissions impact. The following process (see Figure 3) shows how to demonstrate a plan/project's consistency with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 GHG emissions reduction strategy and, thereby, tier from the IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028. This approach is consistent with the recommendations of the AEP Climate Change Committee for tiering from qualified GHG reduction plans that demonstrate substantial progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).

**Figure 3 Determining Consistency with the Sunnyvale Climate Action Playbook Update/ Game Plan 2028****Step 1: Consistency with Demographic Forecasts and Land Use Assumptions**

The demographic projections in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 are based on 2040 and 2050 Plan Bay Area projections for Sunnyvale that are based in part on the Sunnyvale General Plan land use designations. If a plan/project is consistent with the existing (2022) General Plan land use and zoning designation(s) of the plan area/project site as identified in the Sunnyvale General Plan Land Use and Transportation Element adopted in June 2022, then the plan/project is consistent with the demographic projections and land use assumptions of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and can move on to Step 2. In this case, the plan/project's associated GHG emissions were accounted for in the GHG emissions forecasts included in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and are within the scope of this plan's analysis of communitywide GHG emissions. Accordingly, the analysis of the plan/project's GHG emissions in its CEQA document should include a reference to the plan/project's consistency with the existing (2022) General Plan land use and zoning designation(s) of the plan area/project site and should explain the aforementioned connection between the existing (2022) General Plan land use and zoning designation(s) and the GHG emissions forecasts in the Sunnyvale Climate Action Playbook Update/Game Plan 2028. Then, proceed to Step 2.

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If a plan/project is not consistent with the existing (2022) General Plan land use and zoning designation(s) of the plan area/project site but would result in equivalent or fewer GHG emissions as compared to existing on-site development or the development anticipated for the site under the Sunnyvale existing (2022) General Plan, then the plan/project would still be within the demographic projections and land use assumptions of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and can move on to Step 2. To provide substantial evidence for this determination, GHG emissions generated under existing conditions/existing (2022) General Plan buildout and the proposed project need to be quantified and included in the CEQA analysis. See Chapter 6, *Quantifying GHG Emissions*, for guidance on quantifying GHG emissions for existing conditions/existing (2022) General Plan buildout and the proposed plan/project. In this case, the analysis of the plan's/project's GHG emissions in its CEQA document should include a quantitative comparison of the proposed plan's/project's GHG emissions and GHG emissions generated by existing on-site development or the development anticipated for the site under the Sunnyvale existing (2022) General Plan. The analysis should clearly explain how the plan/project's emissions are equivalent or less than those generated by existing on-site development or the development anticipated for the site under the Sunnyvale existing (2022) General Plan. Then, proceed to Step 2.

If a plan/project is not consistent with the Sunnyvale existing (2022) General Plan land use and zoning designation(s) of the plan area/project site and would result in either new development of undeveloped land or redevelopment with higher GHG emissions than existing on-site development or than the development anticipated for the site under the Sunnyvale existing (2022) General Plan, the plan/project cannot use the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist to tier from the adopted IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028. Instead, the plan/project's GHG emissions can be evaluated using the quantitative GHG thresholds described in Chapter 5, *Utilizing Quantitative CEQA GHG Thresholds*, to evaluate the significance of the plan/project's GHG emissions. This method can also be utilized for projects with a post-2030 buildout or initial operational year.

## **Step 2: Consistency with CEQA GHG Emissions Analysis Compliance Checklist**

The City has prepared the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist for plans and projects to ensure they are consistent with the strategies, plays, and moves of the Sunnyvale Climate Action Playbook Update/Game Plan 2028. A project applicant can utilize the checklist to show that the plan/project includes all applicable strategies, plays, and moves of the Sunnyvale Climate Action Playbook Update/Game Plan 2028. Projects that use and are consistent with the checklist are not required to quantify reductions from the plays and moves included in the checklist, because the reductions from applicable plays and moves have already been quantified at a programmatic level in the Sunnyvale Climate Action Playbook Update/Game Plan 2028.

If a plan/project is consistent with the applicable strategies, plays, and moves in the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist, then the plan/project can tier from the programmatic GHG emissions environmental review included in the adopted IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028 pursuant to CEQA Guidelines Section 15183.5(b)(1).

A plan/project that is consistent with all applicable strategies, plays, and moves of the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist would result in less-than-significant GHG emissions and would not result in a cumulatively considerable impact related to GHG emissions and climate change. In this case, the analysis of a plan or project's GHG emissions in its respective CEQA review document should include a summary of the plan/project's consistency with applicable



Determining Consistency with the CAP Update/Game Plan 2028

strategies, plays, and moves of the checklist and an explanation with substantial evidence of why any strategies, plays, or moves in the checklist are not applicable to the plan/project.

## 5 Utilizing Quantitative CEQA GHG Thresholds

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As discussed in Chapter 4, *Determining Consistency with Update/Game Plan 2028*, if a plan/project is not consistent with the Sunnyvale existing (2022) General Plan land use and zoning designation(s) of the plan area/project site, then a plan/project cannot use the Sunnyvale CEQA GHG Emissions Analysis Compliance Checklist to tier from the adopted IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028. Instead, the significance of a plan/project's GHG emissions can be evaluated using quantitative GHG thresholds derived from the assumptions of the Sunnyvale Climate Action Playbook Update/Game Plan 2028. If a plan's/project's emissions are at or below the applicable threshold, a plan/project can tier from the existing programmatic environmental review contained in the adopted programmatic IS-ND for the Sunnyvale Climate Action Playbook Update/Game Plan 2028 if it has a pre-2030 buildout year. In doing so, such a plans/project would result in less-than-significant GHG emissions and would not result in a cumulatively considerable impact related to GHG emissions and climate change. For a plans/project with post-2030 buildout or initial operational years, emissions at or below the thresholds for 2045 that equate to net zero MT of CO<sub>2</sub>e per year would be considered less-than-significant, and such a plans/project would not result in a cumulatively considerable GHG emissions impact. The following sections provide an explanation of the methodology used to calculate the thresholds, guidance on how to utilize the thresholds, and justification for use of these thresholds.

### 5.1 Threshold Calculation Methodology

CEQA Guidelines Section 15064.4 does not establish a specific quantitative threshold of significance for evaluating GHG emissions associated with a proposed plan or project. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, as long as the threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7[c]). The following methodology is consistent with guidance provided by the AEP Climate Change Committee in 2016 for establishing GHG emissions efficiency thresholds using the local jurisdictional GHG inventory and demographic forecasts.<sup>16</sup>

An efficiency threshold is a threshold expressed as a per-person metric (e.g., per resident, per employee, or per service person). Efficiency thresholds are calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the resident, employee, or service population in that year. The efficiency threshold identifies the quantity of GHG emissions that can be generated on a per-person basis without significantly impacting the environment.

Locally appropriate, plan- and project-specific GHG emissions efficiency thresholds were derived from the GHG emissions forecasts calculated for the Sunnyvale Climate Action Playbook Update/Game Plan 2028. These thresholds were created to comply with CEQA and the CEQA Guidelines and interpretive GHG emissions analysis case law, which are summarized in Chapter 3, *Regulatory and Legal Setting*. The Sunnyvale GHG emissions efficiency thresholds were calculated using the emissions forecasts with all emissions sectors included, because plans and projects would generate vehicle and transit trips, consume energy and water, and produce wastewater and solid

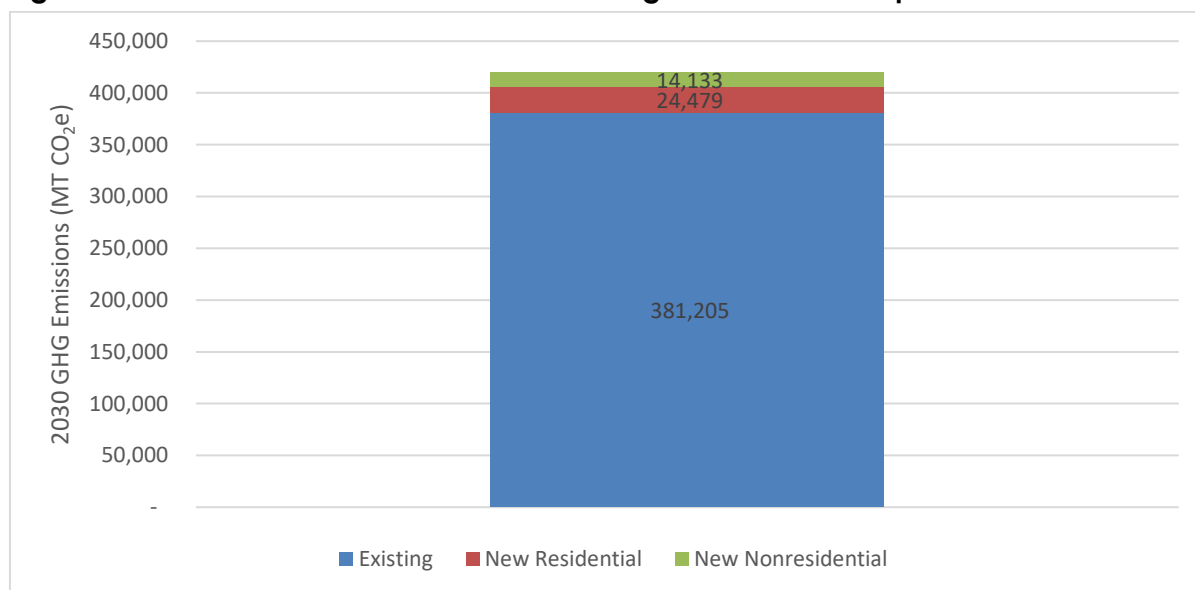
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<sup>16</sup> AEP. 2016. Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. [https://califaep.org/docs/AEP-2016\\_Final\\_White\\_Paper.pdf](https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf).

waste, thereby generating emissions in all categories. Efficiency thresholds were calculated for year 2030 to provide GHG emissions thresholds for new development in line with the State’s next milestone target, which is for year 2030.

GHG emissions efficiency thresholds would be used during the CEQA review process for new residential, non-residential, and mixed-use plans and projects. Therefore, forecasted GHG emissions in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 were disaggregated into existing development and new development for each threshold year. Furthermore, forecasted GHG emissions for new development were further disaggregated into residential and non-residential development for each threshold year for the purpose of calculating thresholds specific to new residential, non-residential, and mixed-use projects. The results of the disaggregation of the GHG emissions forecast are presented in Figure 4 and Table 5, which summarizes the total amount of GHG emissions expected to be generated by existing, new residential, and new non-residential development for threshold year 2030.

**Figure 4 Allowable GHG Emissions from Existing and New Development in 2030**



City of Sunnyvale  
CEQA GHG Emissions Thresholds and Guidance**Table 5 Allowable GHG Emissions for 2030 by Type of Development (MT of CO<sub>2</sub>e)**

Source	2030		
	Existing Development	New Development	
		Residential	Non-Residential
Baseline GHG Emissions	716,382	144,174	70,742
State Laws/Programs	(65,919)	(25,528)	(6,759)
Clean Electricity and Buildings Playbook Update Plays	(111,382)	(43,112)	(33,528)
Transportation & Sustainable Land Use Playbook Update Plays	(126,155)	(40,797)	(13,043)
Resource Management Playbook Update Plays	(31,720)	(10,258)	(3,279)
<b>CAP Update/Game Plan 2028-Adjusted Emissions</b>	<b>381,205</b>	<b>24,479</b>	<b>14,133</b>
( ) denotes a negative value. See Appendix B for calculations.			

Table 6 summarizes the demographic projections for Sunnyvale that were used in calculating GHG efficiency thresholds for year 2030. As shown in Table 6, the numbers of residents, employees, and service persons are all anticipated to increase between 2019 and 2030.

**Table 6 Sunnyvale Demographic Projections**

Metric	2019 Estimate	2030 Forecast	Net Increase from New Development (2019-2030)
Residents	154,252	231,502	77,250
Employees	84,625	109,322	24,697
Service Population <sup>1</sup>	238,877	340,823	101,946

<sup>1</sup> The service population is equal to the residential population plus the number of employees.

Source: Sunnyvale, City of. 2024. *Greenhouse Gas Emissions Forecast Report*.

Table 7 shows how the remaining emissions for new development after implementation of CAP Update/Game Plan 2028 Plays are used with the demographic projections from Table 6 to create communitywide GHG emissions thresholds for 2030. The resulting GHG thresholds and allowable emissions are specified in Table 7 and Table 8

**Table 7 Sunnyvale 2030 CAP-Adjusted Emissions and Communitywide GHG Thresholds**

	2030 (New Development)		
	Residential	Non-Residential	Mixed-Use
CAP Update/Game Plan 2028-Adjusted 2030 Emissions (MT of CO <sub>2</sub> e per year) <sup>1</sup>	24,479	14,133	38,613
Demographic Metric <sup>2</sup>	77,250 new residents	24,697 new employees	101,946 new service people
GHG Efficiency Threshold (MT of CO <sub>2</sub> e per year)	0.32 per resident	0.57 per employee	0.38 per service person

MT = metric tons; CO<sub>2</sub>e = carbon dioxide equivalents<sup>1</sup> See Table 5.<sup>2</sup> Demographic estimates are for new plans or projects only and were calculated using the forecasts in Table 6.

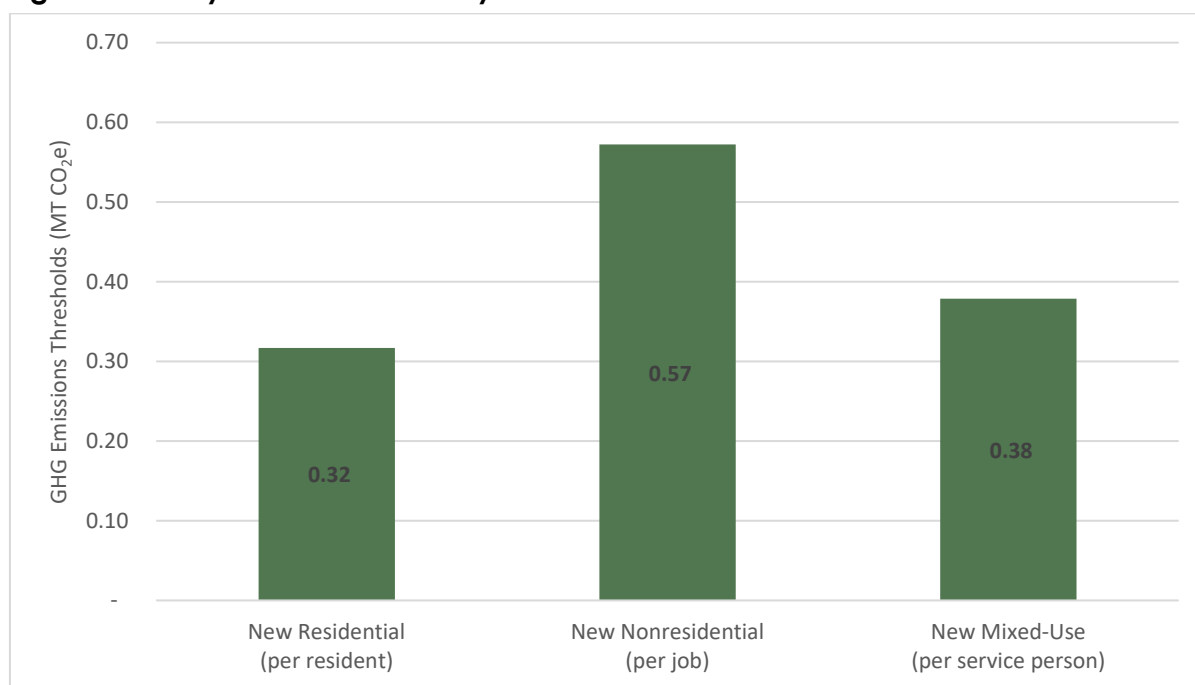
## 5.2 GHG Thresholds and Use

The GHG efficiency thresholds for residential, non-residential, and mixed-use projects built prior to December 31, 2030 are presented in Figure 5 and Table 8. If a plan's or project's emissions do not exceed the applicable threshold, then it is considered consistent with the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and its GHG emissions impacts (both project- and cumulative-level) would not result in a cumulatively considerable impact related to GHG emissions and climate change and would, therefore, be less than significant. If a plan's or project's emissions exceed the applicable threshold, then mitigation measures must be identified and respective GHG emissions reduction calculations included within the respective CEQA review document in order to reduce plan or project GHG emissions to at or below the applicable threshold level. These thresholds are applicable to the following plan and project types proposed in Sunnyvale:

- **Residential.** Single-family dwellings, multi-family dwellings, boarding house, caretaker quarters, fraternities and sororities, high-occupancy residential uses, continuing care communities, mobile-home parks, or any combination of these uses.
- **Non-residential.** All commercial uses (including office and retail uses), all lodging uses, all public and quasi-public uses, elderly and long-term care, hospice in-patient facilities, family day cares, residential care facilities, supportive and/or transitional housing, sports and entertainment assembly facilities, all industry, manufacturing and processing, and wholesaling uses that are not subject to BAAQMD stationary source permitting or the State's Cap-and-Trade program, or any combination of these uses.
- **Mixed-use.** A combination of at least one residential and at least one non-residential land use specified above.

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**Figure 5 Sunnyvale GHG Efficiency Thresholds**



**Table 8 Sunnyvale Locally Applicable Plan/Project CEQA GHG Emissions Thresholds**

	2030 (New Development)		
	Residential	Non-Residential	Mixed-Use
GHG Efficiency Threshold (MT of CO <sub>2</sub> e per year)	0.32 per resident	0.57 per employee	0.38 per service person
MT = metric tons; CO <sub>2</sub> e = carbon dioxide equivalents			
See Table 7 for the calculation methodology of the thresholds.			

## 5.3 Justification for Thresholds

Per CEQA Guidelines Section 15064(b)(1), “the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.” In addition, CEQA Guidelines Section 15064(b)(2) states, “When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project’s impacts are less than significant.” Furthermore, CEQA Guidelines Section 15064.7(b) states “Thresholds of significance to be adopted for general use as part of the lead agency’s environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence.” Therefore, the key considerations when developing thresholds of significance are 1) the thresholds’ basis on scientific and factual data; 2) demonstration of how compliance with the thresholds reduces project impacts to a less-than-significant level; 3) support of the thresholds by substantial evidence; and 4) adoption of the thresholds by ordinance, resolution, rule, or regulation, and developed through a public review process. The following subsections address these four key considerations.

### **Basis of Scientific and Factual Data**

As discussed in Section 5.1, *Threshold Calculation Methodology*, the quantitative thresholds were developed using data from the Sunnyvale 2019 communitywide GHG inventory and the GHG emissions forecasts for year 2030. These inventory and forecasts were developed by the City in compliance with all relevant protocols and guidance documents, including the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Local Government Operations Protocol, the Global Protocol for Community Scale GHG Emissions, and the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories. Furthermore, the inventory and forecasts are based on locally appropriate data for Sunnyvale provided by Silicon Valley Clean Energy (SVCE), CARB, Hexagon Transportation Consultants, California Department of Resources Recycling and Recovery (CalRecycle), Sunnyvale Environmental Services Department, and the Sunnyvale Water Pollution Control Plant.<sup>17</sup> Therefore, the emission inventory and forecast data underlying the thresholds is both scientific and factual.

As discussed in Section 2.3, *GHG Emissions Forecast*, implementation of Sunnyvale Climate Action Playbook Update/Game Plan 2028 would achieve a 58 percent reduction in 1990 emissions levels by 2030. Therefore, this local target is more stringent than the State’s target of a 40 percent emission reduction in 1990 levels by 2030 and makes substantial progress toward achieving the State’s long-term goal of carbon neutrality by 2045. The quantitative thresholds are tied directly to the level of GHG emissions anticipated for new development in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 for year 2030. As a result, because the Sunnyvale Climate Action Playbook Update/Game Plan 2028 is consistent with the State’s 2030 GHG emission target, the quantitative thresholds are also consistent with the next State milestone GHG emission reduction target for 2030. The State’s GHG emission reduction targets for 2030 and 2045 are set at the levels scientists say are necessary to meet the Paris Agreement goals to reduce GHG emissions and limit global temperature rise below two degrees Celsius by 2100 in order to avoid dangerous climate change (CARB 2022; AB 1279). Therefore, the Sunnyvale GHG emission reduction targets that inform the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and the associated quantitative thresholds are based on scientific and factual data on the level of emissions reductions necessary to

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<sup>17</sup> Sunnyvale, City of. 2024. Greenhouse Gas Emissions Forecast Report.

ensure the City does not have a cumulatively considerable contribution to the cumulative impact of climate change.

### **Reduction of Plan or Project Impacts to a Less-than-Significant Level**

As shown in Table 5 in Section 5.1, *Threshold Calculation Methodology*, implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would reduce annual communitywide GHG emissions by 58 percent by 2030. The quantitative thresholds are tied directly to the level of GHG emissions anticipated for new development in the Sunnyvale Climate Action Playbook Update/Game Plan 2028 for year 2030. Therefore, the thresholds are consistent with the City's local emission reduction target, which is consistent with the State's GHG emission reduction targets. As mentioned in the preceding subsection, the State's GHG emission reduction targets for 2030 and 2045 are set at the levels scientists say are necessary to meet the Paris Agreement goals to reduce GHG emissions and limit global temperature rise below two degrees Celsius by 2100 in order to avoid dangerous climate change (CARB 2022; AB 1279). Therefore, the quantitative thresholds are set at the level necessary to ensure the City does not have a cumulatively considerable contribution to the cumulative impact of climate change. As a result, plans and projects with GHG emissions at or below the quantitative thresholds would also not have a cumulatively considerable contribution to the cumulative impacts of climate change, and plan/project impacts would be less than significant.

### **Support of Substantial Evidence**

Substantial evidence regarding the calculation of the quantitative GHG emissions thresholds is provided in Section 5.1, *Threshold Calculation Methodology*. The following subsections provide additional evidence of how the GHG emissions thresholds are locally appropriate and plan- or project-specific and how the thresholds distinguish between existing and new development.

#### *Use of Local Data*

The quantitative thresholds were developed using the Sunnyvale communitywide GHG emissions forecast for year 2030 and are, thus, specific to the City of Sunnyvale. The thresholds are directly tied to the population and employment growth anticipated by the Sunnyvale 2022 General Plan Land Use and Transportation Element as well as to the City-specific GHG emission reduction strategies, plays, and moves that the City has proposed to reduce communitywide emissions. In addition, the magnitude of local GHG emission reductions achieved by State legislation/policies (i.e., vehicle fuel efficiency standards, the Renewable Portfolio Standard [RPS], and Title 24) was estimated based on City-specific growth and vehicle miles travelled (VMT) forecasts. As a result, these locally appropriate thresholds directly address the concerns raised in the *Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego* (2018) case, because they are based on local GHG emissions data rather than Statewide GHG emissions data.

#### *Disaggregation of Existing versus New Development*

The quantitative thresholds were developed by disaggregating the City's business-as-usual GHG emissions forecasts for year 2030 into emissions forecasts for existing and new development, which are shown in Table 5 in Section 5.1, *Threshold Calculation Methodology*. The emissions reductions specific to new development achieved by State legislation/policies and the Sunnyvale Climate Action Playbook Update/Game Plan 2028 were then subtracted from the business-as-usual forecast to determine GHG emissions "caps" for new residential and new non-residential development for year 2030. These "caps" were then divided by the numbers of residents, employees, and service persons



forecasts for new development to determine efficiency thresholds for residential, non-residential, and mixed-use development, respectively. As a result, these thresholds directly address the concerns raised in the *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) case regarding the different rates of GHG emissions reductions anticipated for new development as compared to existing development in order to meet the specified GHG reduction target.

### *Selection of Sector-Specific Thresholds*

The quantitative thresholds are separated into three categories – residential, non-residential, and mixed-use – which are intended to apply to the three main types of development projects in Sunnyvale. These thresholds were calculated by disaggregating the City’s business-as-usual GHG emissions forecasts for new development in year 2030 into emissions forecasts for new residential and new non-residential development, which are shown in Table 5 in Section 5.1, *Threshold Calculation Methodology*. The emissions reductions specific to new residential and new non-residential development achieved by State legislation/policies and the Sunnyvale Climate Action Playbook Update/Game Plan 2028 were then subtracted from the business-as-usual forecast to determine “caps” of emissions for new residential and new non-residential development for year 2030. These emissions “caps” were then divided by the numbers of residents and employees forecast for new development in year 2030 to determine efficiency thresholds for residential and non-residential projects, respectively. For mixed-use development, the residential and non-residential emissions “caps” were summed, then divided by the service population forecast for new development in year 2030 to determine an efficiency threshold for mixed-use projects. As a result, these project-specific thresholds directly address the concerns raised in the *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) case, because they are specific to each development project type.

### **Adoption via Public Review Process**

In compliance with CEQA Guidelines Section 15064.7(b), this guidance document and the quantitative thresholds contained herein will be presented to the City Council for formal adoption through a public review process, which will include an opportunity for public input. The public review process for these City of Sunnyvale CEQA GHG Thresholds and Guidance will specifically occur via public review of and comment on a joint Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Thresholds IS-ND. The opportunity for public comment will also be available at a public hearing (i.e., City Council meeting) considering adoption of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 and CEQA GHG Thresholds. This process directly addresses the concerns raised in the *Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego* (2018) case regarding formal adoption of new CEQA thresholds and how lead agencies should afford the opportunity for public review and input prior to adoption and use.

## 6 Quantifying GHG Emissions

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There are a variety of analytical tools available to estimate project-level GHG emissions, including the California Emissions Estimator Model (CalEEMod),<sup>18</sup> which is a free, publicly available computer model developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with various air quality districts throughout the State. Alternative tools may be used to quantify emissions if they can be substantiated. In general, the most current version of CalEEMod should be used to calculate total emissions for discretionary development projects. The analysis should focus on carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), because these are the GHGs that most development projects would generate in the largest quantities. Fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluorides, should also be considered for the analysis. Emissions of all GHGs should be converted into their equivalent global warming potential in terms of CO<sub>2</sub> (CO<sub>2</sub>e). Calculations should be based on the current methodologies recommended by CAPCOA and BAAQMD.<sup>19, 20</sup>

### 6.1 Construction GHG Emissions

Construction activities emit GHGs primarily through combustion of fuels (mostly diesel) in the engines of off-road construction equipment and in on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are emitted indirectly through the energy required for water used for fugitive dust control and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHG emissions in volumes proportional to the quantity and type of construction equipment used. Heavier equipment typically emits more GHGs per hour than lighter equipment because of its engine design and greater fuel consumption.

BAAQMD recommends quantifying and disclosing construction-related GHG emissions for informational purposes.<sup>21</sup> CalEEMod generates a default construction schedule and equipment list based on the plan-/project-specific information, including land use type, project size, location, and construction timeline.<sup>22</sup> In general, if specific applicant-provided information is unknown, the default construction equipment list and phase lengths are the most appropriate inputs. However, if more detailed site-specific equipment and phase information (i.e., data from the project applicant) is available, the model's default values can (and should) be overridden.<sup>23</sup>

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<sup>18</sup> The most current available version of CalEEMod should be used. As of March 2024, CalEEMod version 2022.1 is the most current version and should be used to quantify project-level emissions.

<sup>19</sup> California Air Pollution Control Officers Association. 2008. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA)*. January 2008.

<sup>20</sup> BAAQMD. 2022. "CEQA Thresholds and Guidelines Update." <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>.

<sup>21</sup> *Ibid*

<sup>22</sup> CAPCOA. 2022. California Emissions Estimator Model User Guide: Version 2022.1. [https://www.caleemod.com/documents/user-guide/01\\_User%20Guide.pdf](https://www.caleemod.com/documents/user-guide/01_User%20Guide.pdf).

<sup>23</sup> *Ibid*.

## 6.2 Operational GHG Emissions

CalEEMod estimates operational emissions of CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> generated by area sources, energy use, vehicle trips (i.e., mobile sources), waste generation, and water use and conveyance. Operational emissions should be calculated for year 2030, rather than the plan/project buildout year, in order to provide an appropriate comparison of project emissions to the year 2030 threshold.

### Area Source Emissions

Area sources include GHG emissions that would occur from the use of landscaping equipment, hearths, and woodstoves that emit GHGs associated with the equipment's fuel combustion. The landscaping equipment emission values in CalEEMod are derived from CARB's Small Off-Road Engines Model v1.1 (SORE2020).<sup>24</sup> Emission rates for combustion of wood and natural gas for wood stoves and fireplaces are based on those published by the U.S. EPA. Typically, no adjustments to landscaping equipment inputs are necessary. The number of hearths and woodstoves should be adjusted in CalEEMod to reflect the project design.

### Energy Use Emissions

GHGs are emitted on-site during the combustion of natural gas for cooking, space and water heating, and decorative uses and off-site during the generation of electricity from fossil fuels in power plants. CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the plan/project location and utility provider. Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the building, such as plug-in appliances. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting.

Electricity emissions are calculated by multiplying the energy use by the carbon intensity of the utility district per kilowatt hour.<sup>25</sup> Projects would generally be served by SVCE. The specific energy intensity factors (i.e., the amount of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O per kilowatt-hour) for the applicable utility should be used in the calculations of GHG emissions.

As of publication of this guidance document, the current iteration of Title 24 includes the 2022 Building Energy Efficiency Standards. In accordance with Section 150.1(b)14 of the 2022 Building Energy Efficiency Standards, all new residential uses three stories or less must install photovoltaic (PV) solar panels that generate an amount of electricity equal to the expected electricity usage. The calculation method contained in Section 150.1(b)14 of the California 2022 Building Energy Efficiency Standards should be utilized to estimate the number of kilowatts of PV solar panels that would be required for a residential project three stories or less. In addition, modeling should account for local regulations pertaining to mandatory solar provisions. Online resources can be used to determine

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<sup>24</sup>Ibid.

<sup>25</sup>Ibid.

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the kilowatt-hours that would be generated per year by the required solar PV system.<sup>26</sup> The energy reduction achieved by on-site PV solar panels should be included in CalEEMod. Future updates to Title 24 as they relate to the Building Energy Efficiency Standards should be incorporated into CalEEMod as applicable.

### **Mobile Source Emissions**

CalEEMod quantifies mobile source emissions generated by vehicle trips associated with the proposed plan/project. If available, plan/project-specific trip generation rates or Vehicle Miles Travelled (VMT) data should be input in CalEEMod.

### **Water and Wastewater Emissions**

The amount of water used, and the amount of wastewater generated by a plan/project generate indirect GHG emissions. These emissions are a result of the energy used to supply, convey, and treat water and wastewater. In addition to the indirect GHG emissions associated with energy use, the wastewater treatment process itself can directly emit both CH<sub>4</sub> and N<sub>2</sub>O.

CalEEMod calculates indoor residential water consumption based on per capita daily water use rates from the Residential End Uses of Water published by the Water Research Foundation in 2016. For non-residential land uses, indoor water use comes from the Pacific Institute's (2003) *Waste Not, Want Not: The Potential for Urban Water Conservation in California*.<sup>27</sup> Outdoor water use is based on the Maximum Applied Water Allowance Method established under the Model Water Efficient Landscape Ordinance. Wastewater generation is based on a reported percentage of total indoor water use.

Future updates to Title 24 as they relate to CALGreen water efficiency requirements should be incorporated into CalEEMod as applicable.

### **Solid Waste Emissions**

The disposal of solid waste produces GHG emissions from the transportation of waste, anaerobic decomposition in landfills, and incineration. To calculate the GHG emissions generated by solid waste disposal, the total volume of solid waste is calculated using waste disposal rates identified by CalRecycle. The methods for quantifying GHG emissions from solid waste are based on the IPCC method, using the degradable organic content of waste. Users should contact the City to obtain the City's most recent solid rate diversion rate (if available) to be included in the calculation of solid waste GHG emissions.

### **Plan or Project Design Features**

CEQA GHG emissions analysis preparers should use the "Mitigation" tabs to include project design features applicable to the plan/project.<sup>28</sup> These features often include increased density, improved destination accessibility, proximity to transit, integration of below market rate housing, unbundling of parking costs, provision of transit subsidies, implementation of alternative work schedules, use of

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<sup>26</sup> Lane, Catherine. 2023. "How much electricity does a solar panel produce?" Last updated: June 13, 2023. <https://www.solarpowerrocks.com/solar-basics/how-much-electricity-does-a-solar-panel-produce/>.

<sup>27</sup> CAPCOA. 2022. California Emissions Estimator Model User Guide: Version 2022.1. Prepared by ICF in collaboration with Sacramento Metropolitan Air Quality Management District, Fehr & Peers, STI, and Ramboll. <http://www.aqmd.gov/caleemod/user's-guide>.

<sup>28</sup> "Mitigation" is a term of art for the modeling input and is not equivalent to mitigation measures that may apply to the CEQA impact analysis.

energy- and/or water-efficient appliances, use of reclaimed and/or grey water, and installation of water-efficient irrigation system. Such preparers should also consider the applicability of these features to the plan/project and review the CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* (2010) publication to ensure that the chosen features are relevant and feasible in light of the plan/project.<sup>29</sup>

## Residents, Employees, and Service Populations

The quantitative thresholds presented in Chapter 5, *Utilizing Quantitative CEQA GHG Thresholds*, are expressed in terms of per resident for residential projects, per employee for non-residential projects, and per service person for mixed-use projects. Estimates of the resident, employee, or service population for a plan/project should be based on substantial evidence. Data provided by the applicant as well as the following resources may be utilized in estimating resident and employee populations:

- **Persons per Household.** The California Department of Finance website (<https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/>) should be referenced for the most recent estimate of persons per household in Sunnyvale. This estimate can be multiplied by the number of proposed residential units to estimate a plan/project's resident population.
- **Proposed Number of Beds.** For projects such as group homes, assisted living facilities, nursing homes, or similar uses, the number of beds can be used to determine the resident population.
- **United States Green Building Council.** The United States Green Building Council has published a summary of building area per employee by business type. These rates, which are expressed in terms of square feet per employee, can be utilized to estimate the number of employees a plan/project would require. This document is included as Appendix G.

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<sup>29</sup> CAPCOA. 2010. Quantifying Greenhouse Gas Mitigation Measures. August 2010. <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.

## 6.3 Modeling GHG Emissions from Existing Land Use

For a plan/project that would result in a change in the plan area/project's site General Plan land use designation, emissions anticipated for the Sunnyvale existing (2022) General Plan land use designation must be calculated in conjunction with emissions for the proposed plan/project to demonstrate whether the plan/project would be more or less GHG-intensive than development anticipated for the existing (2022) General Plan land use designation for the site. In this case, GHG emissions should be reported for both the existing and proposed scenarios. If there is a land use designation that allows multiple uses, the project could model the most intensive permitted use from the GHG perspective and compare the project to that as the baseline.

Emissions anticipated for the existing land use should be quantified using the methods described in Section 6.1, *Construction Emissions*, and Section 6.2, *Operational Emissions* with consistent assumptions between the two scenarios as applicable. Any emission reduction credits applied to the proposed plan/project scenario that are related to State legislation/policies (e.g., the RPS, vehicle standards, Title 24) or the plan area/project site location (e.g., proximity to transit, destination accessibility, etc.) should also be applied to the existing scenario.

Emission reduction credits that are specific to the proposed plan/project (e.g., use of recycled water, increased density, installation of energy and/or water-efficient appliances, integration of below market rate housing, etc.) should only be included for the proposed plan/project scenario. In addition, care should be taken to identify any emission reduction credits that might be unique to the existing land use designation that would not apply to the proposed plan/project. For example, if the existing land use designation allows for single-family residences and the proposed land use designation would allow for only commercial uses, then the existing scenario should include the emission reduction credit associated with the California 2022 Building Energy Efficiency Standards requirements for PV solar panels on residential uses that are three stories or less whereas the proposed plan/project scenario should not include this credit unless PV solar panels are included as a plan/project design feature.

## 7 Moving into the Future

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Full implementation of the Sunnyvale Climate Action Playbook Update/Game Plan 2028 would reduce communitywide GHG emissions by approximately 58 percent below 1990 levels by 2030 that in turn would leave a gap of approximately 266,717 MT of CO<sub>2</sub>e per year in 2045 that would need to be addressed to achieve carbon neutrality. This gap represents emissions that could be addressed by laws, regulations, policies, programs, and ordinances set forth by the federal and State governments, regional agencies, and local partners. The gap also represents the uncertainty that the City of Sunnyvale faces in taking a leadership role in addressing a challenge that has not been previously solved.

Sunnyvale is committed to embracing that uncertainty, striving toward constant learning, engaging in systemic change using the tools and actions that local governments are uniquely suited to carry out, and positioning itself to take full advantage of future innovations, technologies, policies, and legislation that may be undertaken at the State and federal level. Technological innovation, clean-tech innovation, and changes to climate-related policy and regulation occur rapidly. Several of the State's most successful environmental policy initiatives, including the RPS, also had a gap between what was known at the time of adoption and eventual successful implementation. By committing to the target of carbon neutrality by 2045, Sunnyvale intends to catalyze innovation, invite resources from funding sources and partners, and provide climate leadership.

The Sunnyvale Climate Action Playbook Update/Game Plan 2028 acknowledges that additional actions beyond those identified in the plan would be necessary to achieve carbon neutrality and, thus, provides a mechanism for updating and adopting a new climate action plan every five years in order to incorporate new measures and innovative technologies that will further Sunnyvale toward meeting its goal of carbon neutrality. As the CAP Update/Game Plan is updated, the associated CEQA GHG Emissions Analysis Compliance Checklist will also be updated as needed to incorporate new strategies, plays, and/or moves that discretionary development projects would need to incorporate, as applicable, to demonstrate consistency with the latest CAP Update/Game Plan. At the time at which the City identifies strategies, plays, and/or moves to achieve its carbon neutrality goal in totality, the City will adopt those collective strategies, plays, and moves in a public process following CEQA review, at which time that updated CAP Update/Game Plan would become a qualified GHG emission reduction plan for projects with post-2030 buildout years. However, the quantitative thresholds included in this guidance document will not need to be updated, because residential, non-residential, and mixed-use projects with post-2030 buildout years will still need to achieve GHG emissions equivalent to zero MT of CO<sub>2</sub>e per year to demonstrate consistency with the Sunnyvale Climate Action Playbook Update/Game Plan.

Finally, if future amendments or updates of the Sunnyvale General Plan Land Use and Transportation Element occur, then such amendments or updates will be incorporated into future updates of the Sunnyvale Climate Action Playbook Update/Game Plan to ensure that project planners and applicants can continue to utilize the CEQA GHG emissions analysis streamlining process detailed in this document, given that this process is partly dependent on a plan's/project's consistency with the demographic projections and land use assumptions of the Sunnyvale General Plan.

# Appendix A

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Overview of GHG Emissions and Climate Change



# Overview of GHG Emissions and Climate Change

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## Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey other changes in addition to rising temperatures. The baseline against which these changes are measured originates from historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate changes continuously, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed substantial acceleration in the rate of warming during the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric CO<sub>2</sub> concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report from 2021. Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatonnes of anthropogenic CO<sub>2</sub> was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019.<sup>30</sup> Furthermore, since the late 1700s, estimated concentrations of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O) in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity.<sup>31</sup> Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are usually by-products of fossil fuel combustion, and CH<sub>4</sub> results from off-gassing associated with agricultural practices and

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<sup>30</sup> Intergovernmental Panel on Climate Change (IPCC). 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Full\\_Report.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf)

<sup>31</sup> United States Environmental Protection Agency (U.S. EPA). 2021. Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases. Last updated April 2021. <https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases>

landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO<sub>2</sub>, include fluorinated gases and SF<sub>6</sub>.<sup>32</sup>

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO<sub>2</sub>) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as “carbon dioxide equivalent” (CO<sub>2</sub>e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, CH<sub>4</sub> has a GWP of 30, meaning its global warming effect is 30 times greater than CO<sub>2</sub> on a molecule per molecule basis.<sup>33,34</sup>

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat-trapping effect of GHGs, the earth’s surface would be about 33 degrees Celsius (°C) cooler.<sup>35</sup> However, since 1750, estimated concentrations of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in the atmosphere have increased by 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity.<sup>36</sup> GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

## Greenhouse Gas Emissions Inventories

### Global Emissions Inventory

In 2015, worldwide anthropogenic GHG emissions totaled 47,000 MMT of CO<sub>2</sub>e, which is a 43 percent increase from 1990 GHG levels. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed three percent. These sources account for approximately 96 percent.<sup>37</sup>

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32 U.S. EPA. 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019. April 2021. <https://www.epa.gov/system/files/documents/2022-02/us-ghg-inventory-2022-main-text.pdf>

33 The IPCC’s *Sixth Assessment Report* from 2021 determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change’s *Fourth Assessment Report* from 2007. Therefore, this analysis utilizes a GWP of 25.

34 IPCC. 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Full\\_Report.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf)

35 World Meteorological Organization. 2020. “Greenhouse Gases.” <https://public.wmo.int/en/our-mandate/focus-areas/environment/greenhouse%20gases>

36 Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland. 2007. Changes in Atmospheric Constituents and in Radiative Forcing. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf>

37 U.S. EPA. 2023. Climate Change Indicators: Global Greenhouse Gas Emissions. Available at: <https://www.epa.gov/climate-indicators/climate-change-indicators-global-greenhouse-gas-emissions>

## United States Emissions Inventory

United States GHG emissions were 6,347.7 MMT of CO<sub>2</sub>e in 2021 (or 5,593.5 MMT CO<sub>2</sub>e after accounting for sequestration), a 6.8 percent increase from 2020 emissions. The increase from 2020 to 2021 was driven by an increase in CO<sub>2</sub> emissions from fossil fuel combustion which increased 7 percent relative to previous years and is primarily due to the economic rebounding after the COVID-19 pandemic. In 2020, the energy sector (including transportation) accounted for 81 percent of nationwide GHG emissions while agriculture, industrial and waste accounted for approximately 10 percent, 6 percent, and 3 percent respectively.<sup>38</sup>

## California Emissions Inventory

Based on a review of the CARB California Greenhouse Gas Inventory for the years between 2000-2020, California produced 369.2 MMT of CO<sub>2</sub>e in 2020, which is 35.3 MMT of CO<sub>2</sub>e lower than 2019 levels. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. The major source of GHG emissions in California is the transportation sector, which comprises 37 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 20 percent of the state's GHG emissions while electric power accounts for approximately 16 percent. The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the state of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO<sub>2</sub>e.<sup>39</sup> The annual 2030 statewide target emissions level is 260 MMT of CO<sub>2</sub>e.<sup>40</sup>

## Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21<sup>st</sup> century than were observed during the 20<sup>th</sup> century. Long-term trends have found that each of the past four decades has been warmer than all the previous decades in the instrumental record and the decade from 2011 through 2020 has been the warmest. The observed global mean surface temperature (GMST) for the decade from 2011 to 2020 was approximately 1.09°C (0.95°C to 1.20°C) higher than the average GMST over the period from 1850 to 1900. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, the latest IPCC report states that "human-induced climate change is already affecting many weather and climate extremes in every region across the globe."<sup>41</sup> These climate change impacts include climate change

<sup>38</sup> U.S. EPA. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021. Available at: <https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf>

<sup>39</sup> CARB. 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Available at: <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>

<sup>40</sup> CARB. 2017. California's 2017 Climate Change Scoping Plan. Available at: [https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf)

<sup>41</sup> IPCC. 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Full\\_Report.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf)

sea level rise, increased weather extremes, and substantial ice loss in the Arctic over the past three decades.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years.<sup>42</sup> In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the State and regionally-specific climate change case studies.<sup>43</sup> However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

## Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding.<sup>44</sup> Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 3.3 millimeters per year, double the twentieth century trend of 1.6 millimeters per year.<sup>45,46</sup> Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880.<sup>47</sup> Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise of 11 to 21.5 inches by 2100 under the lowest emissions scenario and a rise of 25 to 40 inches by 2100 under the very high emissions scenario.<sup>48</sup>

A rise in sea levels could erode 31 to 67 percent of California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure.<sup>49</sup> Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

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<sup>42</sup> California, State of. 2018. *California's Fourth Climate Change Assessment Statewide Summary Report*. August 27, 2018. [https://www.energy.ca.gov/sites/default/files/2019-11/Statewide\\_Reports-SUM-CCCA4-2018-013\\_Statewide\\_Summary\\_Report\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf)

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> World Meteorological Organization. 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013. [https://library.wmo.int/opac/index.php?lvl=notice\\_display&id=15892#.Wt9-Z8gvzIU](https://library.wmo.int/opac/index.php?lvl=notice_display&id=15892#.Wt9-Z8gvzIU)

<sup>46</sup> National Aeronautics and Space Administration. 2020. "Global Climate Change – Vital Signs of the Planet – Sea Level." <https://climate.nasa.gov/vital-signs/sea-level/>

<sup>47</sup> Ibid.

<sup>48</sup> IPCC. 2021. *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Full\\_Report.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf)

<sup>49</sup> California, State of. 2018. *California's Fourth Climate Change Assessment Statewide Summary Report*. August 27, 2018. [https://www.energy.ca.gov/sites/default/files/2019-11/Statewide\\_Reports-SUM-CCCA4-2018-013\\_Statewide\\_Summary\\_Report\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf)

## Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century.<sup>50</sup> Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the State has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains.<sup>51</sup> If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them.<sup>52</sup>

## Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common.<sup>53</sup> This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts.<sup>54</sup> The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack.<sup>55</sup> Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050.<sup>56</sup>

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<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. [http://resources.ca.gov/docs/climate/Statewide\\_Adaptation\\_Strategy.pdf](http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf)

<sup>53</sup> California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>

<sup>54</sup> California, State of. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018.

[https://www.energy.ca.gov/sites/default/files/2019-11/Statewide\\_Reports-SUM-CCCA4-2018-013\\_Statewide\\_Summary\\_Report\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf)

<sup>55</sup> Ibid.

<sup>56</sup> Ibid.

## Agriculture

California has an over \$51 billion annual agricultural industry that produces over a third of the country's vegetables and three-quarters of the country's fruits and nuts.<sup>57</sup> Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (California Natural Resource Agency 2019). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality.<sup>58</sup>

## Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage.<sup>59,60</sup>

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<sup>57</sup> California Department of Food and Agriculture. 2022. California Agricultural Production Statistics. Available at: <https://www.cdfa.ca.gov/Statistics/>

<sup>58</sup> California Climate Change Center (CCCC). 2006. Climate Scenarios for California.

<sup>59</sup> Parmesan, C. August 2006. Ecological and Evolutionary Responses to Recent Climate Change.

<sup>60</sup> California, State of. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. [https://www.energy.ca.gov/sites/default/files/2019-11/Statewide\\_Reports-SUM-CCCA4-2018-013\\_Statewide\\_Summary\\_Report\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf)

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## Appendix B

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### GHG Threshold Calculations



### 1. BAU Forecast Summary

Forecast Scenario	Sector	Annual 2030 GHG Emissions (MT CO <sub>2</sub> e)			
		Existing (2019)	New (2030-2019)	Total (2030)	
BAU	Residential Energy	103,299	57,735	161,034	Residential
	Nonresidential Energy	147,710	43,107	190,817	Nonresidential
	Transportation	374,617	84,587	459,204	Residential/Nonresidential
	Offroad Equipment	41,425	11,085	52,510	Residential/Nonresidential
	Water & Wastewater	826	352	1,178	Residential/Nonresidential
	Solid Waste	48,506	18,050	66,556	Residential/Nonresidential
Consistency Check		-	-	-	

### 2. Demographics Forecast Summary

Category	Sector	Annual 2030 Demographics		
		Existing (2019)	New (2030-2019)	Total (2030)
Demographics	Residents	154,252	77,250	231,502
	Jobs	84,625	24,697	109,322
	Service Population	238,877	101,946	340,823

### 3. Emissions Savings Summary - Legislative savings + Playbook savings

Category	Measure	2030 GHG Emissions (MT CO <sub>2</sub> e)		
		Residential	Nonresidential	Residential/Nonresidential
State Legislation	Transportation Legislation	-	-	94,732
	California Green Building Code (Title 24)	4,114	-	-
	California RPS (SB 100)	(181)	(472)	13
Playbook GHG Reductions	Play 1.1: Promote 100% clean energy	983	2,316	-
	Play 1.2: Increase local solar photovoltaics	1	2	-
	Play 2.2: Support electrification of existing buildings	50,313	58,621	-
	Play 2.3: Achieve all-electric new construction	42,783	33,003	-
	Play 3.1: Increase opportunities for and encourage	-	-	66,162
	Play 3.3: Increase zero-emission vehicles	-	-	98,079
	Play 3.4: Decarbonize off-road vehicles and equipment	-	-	15,753
	Play 4.1: Achieve Zero Waste goals for solid waste	-	-	45,258
	Consistency Check (State Leg)	-	-	-
	Consistency Check (Playbook)	-	-	-

### 4. Allocate savings between existing/new and residential/nonresidential

- \* Savings are allocated to existing and new using the existing, new, and total demographics breakdown in section 2 and based on the logic in the Allocation column below
- \* Residential + Nonresidential savings are allocated to residential and nonresidential separately the population, job, and service population demographics breakdown in section 2

Category	Allocation between existing and new	2030 Emissions (MT CO <sub>2</sub> e)			
		Existing		New	
		Residential	Nonresidential	Residential	Nonresidential
BAU Forecast					
BAU Forecast	See F4:F9	403,808	312,574	144,174	70,742
State Reductions					
Transportation Legislation	Both	42,874	23,522	21,471	6,865
California Green Building Code (Title 24)	New Only	-	-	4,114	-
California RPS (SB 100)	Both	(114)	(362)	(57)	(106)
Playbook GHG Reductions					
Play 1.1: Promote 100% clean energy	Both	655	1,792	328	523
Play 1.2: Increase local solar photovoltaics	New Only	-	-	1	2
Play 2.2: Support electrification of existing buildings	Existing Only	50,313	58,621	-	-
Play 2.3: Achieve all-electric new construction	New Only	-	-	42,783	33,003
Play 3.1: Increase opportunities for and encourage development of mixed-use sites to reduce vehicle miles per person Play 3.2: Increase transportation options and support shared mobility	Both	29,944	16,428	14,996	4,794
Play 3.3: Increase zero-emission vehicles	Both	44,389	24,353	22,230	7,107
Play 3.4: Decarbonize off-road vehicles and equipment	Both	7,130	3,911	3,571	1,142
Play 4.1: Achieve Zero Waste goals for solid waste	Both	20,483	11,237	10,258	3,279
Playbook-Adjusted Forecast					
Playbook-Adjusted Forecast	BAU Forecast - State Reductions - Playbook Reductions	208,134	173,071	24,479	14,133
Percentage reductions in each category		34%	35%	55%	64%

Allocation Dropdown  
Both  
Existing Only  
New Only

Manual Check:

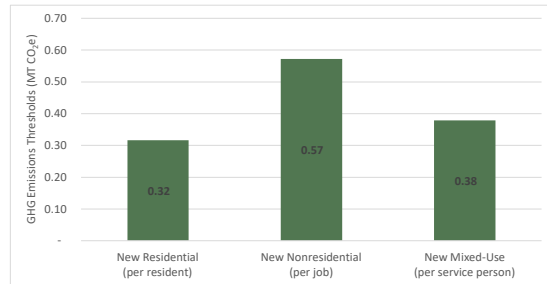
### 5. 2030 GHG Thresholds

Category	2030 New Growth GHG Threshold	*Existing GHG Thresholds*	2030 Total Population - Per Capita Threshold
New Residential (per resident)	0.32	1.35	1.00
New Nonresidential (per job)	0.57	2.05	1.71
New Mixed-Use (per service person)	0.38	1.60	1.23

### 6. Summary Table

	Existing	New Residential	New Nonresidential	Total
BAU Forecast	716,382	144,174	70,742	931,298
State Laws/Programs	65,919	25,528	6,759	98,206
Playbook Building Energy Measures	111,382	43,112	33,528	188,022
Playbook Transportation Measures	126,155	40,797	13,043	179,994
Playbook Waste Measures	31,720	10,258	3,279	45,258
Emissions Reductions from BAU	335,177	119,695	56,609	511,480
Remaining Total GHG Emissions	381,205	24,479	14,133	419,818

### 7. Graphics



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## Appendix C

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United States Green Building Council Building Area per Employee by Business Type Rates<sup>61</sup>

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<sup>61</sup> United States Green Building Council. 2008. "Building Area per Employee by Business Type." May 13, 2008.

## BUILDING AREA PER EMPLOYEE BY BUSINESS TYPE

Land-Use	ITE		USDOE Sq.Ft./ Employee	SANDAG Sq.Ft./ Employee
	Land-Use Code	Sq.Ft./ Employee		
Commercial Airport	21	224		
General Aviation Airport	22	392		
Truck Terminal	30	427		
General Light Industrial	110	463		
Heavy Industrial	120	549		
Industrial Park	130	500		
Manufacturing	140	535		
Warehousing	150	781	2114	
Elementary School	520	1250	1131	
High School	530	1587		
Hospital	610	372	486	
General Office - Suburbs	710	304		
Corporate HQ - Suburbs	714	260		
Single Tenant Office	715	295		
Medical-Dental Building	720	207		
U.S. Post Office	732	230		
Office Park	750	278		
Research & Development Center	760	405		
Business Park	770	332		249
Building Material - Lumber Store	812	806		
Specialty Retail Store	814	549		
Discount Store	815	654		
Hardware Store	816	1042		
Nursery-Garden Center	817	529		
Quality Restaurant (Sit Down)	831	134		
High Turnover (Sit Down)	832	100		
Fast Food w/o drive-thru	833	70		
Fast Food w/ drive-thru	834	92		
Grocery			938	
Lodging			1124	917
Bank				317
Office under 100,000 sq.ft.				228
Office over 100,000 sq.ft.				221
Neighborhood Retail				588
Community Retail				383

*Sources:*

ITE -- Institute of Transportation Engineers

USDOE -- U.S. Department of Energy

SANDAG -- San Diego Assn of Governments

5/13/2008

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