City of Menlo Park General Plan

Open Space/ Conservation, Noise and Safety Elements

Adopted May 21, 2013

City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

HOME IN MENLO PARK

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Technical Appendices

Contained in a separate document available at the City of Menlo Park — City of Menlo Park Housing Element Update, General Plan Consistency Update and Zoning Ordinance Amendments Environmental Assessment prepared April 4, 2013 *

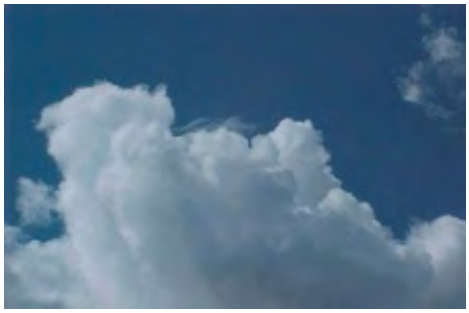
** **NOTE:** The Environmental Assessment contains background technical analysis prepared for the Open Space/Conservation, Noise and Safety Elements of the Menlo Park General Plan. The background sections in this document provide a summary of the information and technical analysis contained in the Environmental Assessment.*

Introduction

Section I

Overview

A Purposes and Requirements of the Open Space/Conservation, Noise and Safety Elements



The Open Space/ Conservation, Noise and Safety Elements reflect current conditions, important community issues and relevant State laws related to environmental conditions in Menlo Park. The elements focus on providing direction as to how to protect community safety and to maintain a clean, safe and healthy environment including air and water quality, noise, greenhouse gas, conservation of energy and minimizing impacts of development in hazardous or environmentally sensitive habitat areas.

A general plan is required to address the specified provisions of each of the seven mandated elements listed in §65302 — land use, circulation, housing, conservation, open space, noise and safety — to the extent that the provisions are locally relevant. The Governor's Office of Planning and Research (OPR) has prepared General Plan Guidelines to provide a broad overview of what a general plan might contain. Jurisdictions may combine elements of their general plan, as appropriate, but all elements of a general plan have equal weight under the law. In this document, the Open Space and Conservation Elements have been combined because of the many overlapping issues addressed.

Open Space/Conservation Element Requirements

The Open Space/Conservation Element of the Menlo Park General Plan combines two of the seven elements required by State law (California Government Code, Section 65300 et. seq.) — Open Space and Conservation. Open Space issues include policies and programs to maintain, expand and improve Menlo Park's open space and recreation areas, while Conservation institutes policies and programs to conserve natural resources. Under State law, parks are encompassed within the mandate of the Open Space Element.

Both Open Space and Conservation Elements have been required as part of local General Plans since 1970. In enacting these requirements, it was the intent of the State Legislature to assure that cities recognize that open space land is a limited and valuable resource and to assure that every city and county will prepare and carry out an open space plan.

Section 65560 and 65561 of the Government Code specifies the contents of an Open Space Element. State policy with regard to open space is described in Section 65561 as follows:

"(1) That the preservation of open-space land . . . is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of land for the production of food and fiber, for the enjoyment of scenic beauty, for recreation, and for the use of natural resources.

(2) That discouraging premature and unnecessary conversion of open-space land to urban uses is a matter of public interest and will be of benefit to urban dwellers because it will discourage non-contiguous development patterns which unnecessarily increase the costs of community services to community residents.

(3) That the anticipated increase in the population of the state demands that cities, counties, and the state at the earliest possible date make definite plans for the preservation of valuable open-space land and take positive action to carry out such plans by the adoption and strict administration of laws, ordinances, rules and regulations as authorized by this chapter or by other appropriate methods.

(4) That in order to assure that the interests of all its people are met in the orderly growth and development of the state and the preservation and conservation of its resources, it is necessary to provide for the development by the state, regional agencies, counties and cities, including charter cities, of statewide coordinated plans for the conservation and preservation of open-space lands.

(5) That for these reasons this article is necessary for the promotion of the general welfare and for the protection of the public interest in open-space land."

Below is an excerpt from Section 65302(d) of the California Government Code covering

Conservation Elements.

"A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

The conservation element may also cover all of the following:

(A) The reclamation of land and waters.
(B) Prevention and control of the pollution of streams and other waters.
(C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
(D) Prevention, control, and correction of the erosion of soils, beaches, and shores.
(E) Protection of watersheds.
(F) The location, quantity and quality of the rock, sand and gravel resources.

Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and storm-water management."

Noise Element Requirements

A Noise Element has been required as part of local General Plans since 1971. The State Legislature adopted the California Noise Control Act of 1973, which defined the following findings and policy:

(1) Excessive noise is a serious hazard to the public health and welfare.

(2) Exposure to certain levels of noise can result in physiological, psychological, and economic damage.

(3) There is a continuous and increasing bombardment of noise in urban, suburban, and rural areas.

(4) Government has by and large not taken the steps necessary to provide for the control, abatement, and prevention of unwanted and hazardous noise.

(5) It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

To implement this policy, Section 65302(f) of the California Government Code requires each city to have a Noise Element as part of its General Plan. The Government Code states that the Noise Element should be prepared according to guidelines established by the State Department of Health Services, Office of Noise Control. The excerpt below is from Section 65302(f) of the Government Code.

"(f) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

(1) Highway and freeways.

(2) Primary arterials and major local streets.

(3) Passenger and freight on-line railroad operations and ground rapid transit systems.

(4) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

(5) Local industrial plants, including, but not limited to, railroad classification yards.

(6) Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards."

Safety Element Requirements

Safety issues have been required to be addressed as part of local general plans since 1971. The San Fernando earthquake of February, 1971, which claimed 64 lives and resulted in over $500 million in property damage, and the devastating wildland fires in September and October of 1970, were largely responsible for prompting the Legislature to pass this requirement. The following citation is from Government Code Section 65302(f):

"A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides, subsidence and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, peak load water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards."

B Definitions of Key Terms

Definitions

Open Space/Conservation

- **Baylands.** Areas along a bay that are permanently wet or periodically covered with shallow water, such as saltwater and freshwater marshes, open or closed brackish marshes, swamps, mudflats, and fans.

- **Biotic Community.** A group of living organisms characterized by a distinctive combination of both animal and plant species in a particular habitat.

- **Conservation.** Conservation is the wise management of renewable and non-renewable resources to prevent the unnecessary waste, destruction or neglect of resources for the enjoyment of future generations, such as water, air and energy systems. The preservation of these resources is concerned with the quality and quantity of the resource. Conservation areas may sustain a rare species and/or natural resource that cannot be restored or replaced. The purpose of conservation areas is to provide a protected location where the properties of a natural resource may be observed and enjoyed without risk of endangering the resource.

- **Endangered Species.** A species of animal or plant that is considered endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

- **Habitat.** The physical location or type of environment in which an organism or biological population lives or occurs.

- **Historic Preservation.** The preservation of historically significant structures and neighborhoods until such time as, and in order to facilitate, restoration and rehabilitation of the building(s) to a former condition.

- **Joint Powers Authority (JPA).** A legal arrangement that enables two or more units of government to share authority in order to plan and carry out a specific program or set of programs that serves both units.

- **Open Space.** An open area that is primarily maintained in its natural condition and is essentially unimproved and devoted to an open space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety. In some cases this definition includes pathways, landscaping and other improvements that are maintained. The provision of open space is intended to offer residents and visitors opportunities for quiet introspection in a location that provides visual relief from buildings, concrete and noise associated with more urban life.

- **Park.** A park is an improved, primarily unobstructed area, with landscaping and recreational equipment such as play apparatuses and/or basketball courts. In some cases this definition includes property with recreation buildings or structures. The purpose of parks is to provide opportunities for outdoor recreation and physical exercise near to residential and employment areas.

- **Plan Bay Area.** Plan Bay Area is an integrated long-range transportation and land-use/housing plan for the San Francisco Bay Area. Legislation calls upon the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) to adopt a Sustainable Communities Strategy (SCS), which will coordinate land use and transportation in the regional transportation plan.

- **Rare or Endangered Species.** A species of animal or plant listed in: Sections 670.2 or 670.5, Title 14, California Administrative Code; or Title 50, Code of Federal Regulations, Section 17.11 or Section 17.2, pursuant to the Federal Endangered Species Act designating species as rare, threatened, or endangered.

- **Regional Park.** A park typically 150-500 acres in size focusing on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

- **Riparian Lands.** Riparian lands are comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams. Riparian areas are delineated by the existence of plant species normally found near freshwater.

- **Sustainability.** Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

- **Wetlands.** Transitional area between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Under a "unified" methodology now used by all Federal agencies, wetlands are defined as "those areas meeting certain criteria for hydrology, vegetation, and soils."

Noise

- **A-Weighted Decibel (dBA)**. An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

- **dBA.** The "A-weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

- **Day-Night Sound Level (Ldn).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

- **Decibel (dB).** A unit measure of sound on a logarithmic scale.

- **Equivalent Continuous Noise Level (Leq)**. The mean of the noise level, energy averaged over the measurement period, such as the 24-hour CNEL used by the State of California.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Noise Attenuation.** Reduction of the level of a noise source using a substance, material, or surface, such as earth berms and/or solid concrete walls.

- **Noise Contour.** A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 Ldn contour (measured in dBA) require noise attenuation in residential development.

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Statistical Sound Level (Ln)**. The sound level that is exceeded “n” percent of time during a given sample period. For example, the L50 level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L10 level, likewise, is the value that is exceeded 10 percent of the time (i.e. near the maximum) and this is often known as the “intrusive sound level.” The L90 is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”

Safety

- **Acceptable Risk.** A hazard deemed to be a tolerable exposure to danger given the expected benefits to be obtained. Different levels of acceptable risk may be assigned according to the potential danger and the criticalness of the threatened structure. The levels may range from "near zero" for nuclear plants and natural gas transmission lines to "moderate" for open space, ranches and low-intensity warehouse uses.

- **Critical Use Structures.** Critical use structures include those required for effective disaster response (emergency operating centers, police and fire stations, medical facilities), lifelines (gas, water, sewage, and electrical systems), and structures whose failure would be catastrophic (dams).

- **Fault.** A fracture in the earth's crust forming a boundary between shifting rock masses.

- **Fire Hazard Zone.** An area where, due to slope, fuel, weather, or other fire-related conditions, the potential loss of life and property from a fire necessitates special fire protection measures and planning before development occurs.

- **Flood, 100-Year and 500-Year.** The magnitude of a flood expected to occur on the average every 100 or 500 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year. The 500-year flood has a 1/500, or two-tenths of one percent, chance of occurring in any given year.

- **Flood Insurance Rate Map (FIRM).** For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

- **Hazardous Material.** Any substance that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. The term includes, but is not limited to, hazardous substances and hazardous wastes.

- **High-Occupancy Structure.** All pre-1935 buildings with over 25 occupants, and all pre-1976 buildings with more than 100 occupants.

- **Landslide.** A general term for a falling mass of soil or rocks.

- **Liquefaction.** The transformation of loose water-saturated granular materials (such as sand or silt) from a solid into a liquid state that can occur during an earthquake.

- **Mercalli Intensity Scale.** A subjective measure of the observed effects (human reactions, structural damage, geologic effects) of an earthquake. Expressed in Roman numerals from I to XII.

- **Richter Scale.** A measure of the size or energy release of an earthquake at its source. The scale is logarithmic; the wave amplitude of each number on the scale is 10 times greater than that of the previous whole number.

- **Seiche.** An earthquake-generated wave in an enclosed body of water such as a lake, reservoir, or bay.

- **Sensitive Populations.** Sensitive populations include those persons or groups of persons particularly vulnerable and in need of special attention in an emergency or disaster situation. Examples of sensitive populations include seniors, childbearing women, newborns, children, people w/ mobility impairments, autism, hearing impaired, visually impaired, cognitive disabilities, multiple chemical sensitivities, mentally ill, with service animals, etc.

- **State Responsibility Areas.** As used in the Safety Element of the general plan, areas of the state in which the financial responsibility for preventing and suppressing fires has been determined by the State Board of Forestry (pursuant to Public Resources Code Section 4125) to be primarily the responsibility of the State of California.

- **Tsunami.** A large ocean wave generated by an earthquake in or near the ocean.

Acronyms

AAQS	Ambient air quality standards
ABAG	Association of Bay Area Governments
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Area Conservation and Development Commission
CAP	City of Menlo Park Climate Change Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CEQA	California Environmental Quality Act
CGS	California Geological Society
CNEL	Community Noise Equivalent Level
CDMG	California Division of Mines and Geology (State Resources Agency)
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
dB/ dBA	Decibel/"A-weighted" decibel
DTSC	California Department of Toxic Substances Control
ECR/DSP	El Camino Real/Downtown Specific Plan
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
Ldn	Day and Night Average Sound Level
Leq	Sound Energy Equivalent Level
M	Magnitude (Richer Scale)
OPR	Governor's Office of Planning and Research
SFBAAB	San Francisco Bay Area Air Basin
STOPPP	San Mateo Countywide Stormwater Pollution Prevention Program
TACs	Toxic Air Contaminants
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

Section II

Open Space/Conservation Goals, Policies and Programs

A The Need for Open Space and Conservation

The Open Space/Conservation Element addresses issues related to the use, preservation, management and sustainability of land-based resources in Menlo Park, whether that land is dedicated to active recreation use, passive use or the protection of natural resources and environmental quality.

A central concern of the Open Space/Conservation Element, in considering the location, design, intensity and type of land uses in the City, is to continue to protect important natural resources and areas. Open Space and Conservation helps prevent the wasteful destruction and neglect of Menlo Park's natural resources, particularly scarce resources. The City recognizes that natural resources must be maintained for their economic and recreational use as well as for their ecological and scenic value.

The approach to natural resource conservation includes:

- Preserve the natural state, unique appeal and visual amenities of Menlo Park's bay lands and shoreline.
- Protect the wildlife habitat, scenic value and natural character of the San Francisquito Creek and Atherton Creek riparian corridors.
- Protect sensitive species and natural communities.
- Preserve open areas needed for protection from natural hazards.
- Maintain, preserve and enhance contiguous open space on Stanford lands within Menlo Park's unincorporated sphere of influence.

- Protect lands that have inherent qualities to provide visual amenity, including topographic features, views or vistas, street landscape areas, scenic water areas, creeks and the San Francisco Bay.
- Provide landscaped areas that visually and environmentally enhance the community.

B Open Space/Conservation Goals

Goal OSC1 — MAINTAIN, PROTECT AND ENHANCE OPEN SPACE AND NATURAL RESOURCES

Protect, conserve and enhance valuable natural resources, open areas and designated open space lands rich in scenic value, wildlife or of a fragile ecological nature through conservation and restoration efforts.

Natural features and resources have shaped both the growth and form of Menlo Park and provide many of the attractive characteristics of the area. The City has a responsibility to maintain and protect these assets for future generations, and to anticipate future needs.

Goal OSC2 — PROVIDE PARKS AND RECREATION FACILITIES

Develop and maintain a parks and recreation system to provide areas and facilities conveniently located, sustainable, properly designed and well-maintained to serve the recreation needs and promote healthy living of residents, workers and visitors to Menlo Park.

Park and recreation facilities play a critical role in determining the quality of life in Menlo Park. The City is committed to ongoing improvements to address the recreational needs of its residents. Numerous parks, public spaces and playing fields are integral to the life of the City. Recreational facilities and playing fields are well maintained.

Goal OSC3 — PROTECT AND ENHANCE HISTORIC RESOURCES

Protect and enhance cultural and historical resources for their aesthetic, scientific, educational, and cultural values.

It is the goal of Menlo Park to have protected and maintained historic buildings and archaeological resources as part of Menlo Park's cultural heritage. City policy has been to protect and build upon the historic character that exists in the City. City policy also protects known archeological resources to the maximum extent feasible.

Goal OSC4 — PROMOTE SUSTAINABILITY AND CLIMATE ACTION PLANNING

Promote a sustainable energy supply and implement the City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and encouraging recycling, reduction and reuse programs.

Menlo Park's Climate Action Plan addresses greenhouse gas emissions through planned emission reduction strategies covering the City's operations and life in the community at large. But, it is important to recognize that a major determinant in the City of Menlo Park's success in reducing its greenhouse gas emissions will be the actions taken by regional, State and national bodies across all sectors. The City's efforts to reduce greenhouse gas emissions through such actions as land use and transportation initiatives and reducing, reusing and recycling resources, also consider the broader sustainability benefits that accompany local climate protection efforts, such as cleaner air and water, healthier people and local economic development.

Goal OSC5 — ENSURE HEALTHY AIR QUALITY AND WATER QUALITY

Enhance and preserve air quality in accord with State and regional standards, and encourage the coordination of total water quality management including both supply and wastewater treatment.

The Open Space/Conservation Element is intended to ensure that high quality air and water are available to all who reside, work and play in the City. The City seeks to mitigate the effects of vehicular pollution by supporting policies that promote more environmentally friendly forms of transport as well as promote land use design practices that are more efficient. Maintaining and improving water quality is essential to protect public health, wildlife, and watersheds, and to ensure opportunities for public recreation and economic development in Menlo Park.

C Open Space/Conservation Policies and Implementing Programs

Goal OSC1
MAINTAIN, PROTECT AND ENHANCE OPEN SPACE AND NATURAL RESOURCES

Policies

OSC1.1 **Natural Resources Integration with Other Uses.** Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.

OSC1.2 **Habitat for Open Space and Conservation Purposes.** Preserve, protect, maintain and enhance water, water-related areas, plant and wildlife habitat for open space and conservation purposes.

OSC1.3 **Sensitive Habitats.** Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specify requirements relative to the baseline assessments.

OSC1.4 **Habitat Enhancement.** Require new development to minimize the disturbance of natural habitats and vegetation, and requires revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.

OSC1.5 **Invasive, Non-Native Plant Species.** Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the California Invasive Plant Inventory and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.

\OSC1.6 **South Bay Salt Pond Restoration Project and Flood Management Project.** Continue to support and participate in Federal and State efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.

OSC1.7 **San Francisquito Creek Joint Powers Authority.** Continue efforts through San Francisquito Creek Joint Powers Authority to enhance the value of the creek as a community amenity for trails and open space, conservation and educational opportunities.

OSC1.8 **Regional Open Space Preservation Efforts.** Support regional and sub-regional efforts to acquire, develop and maintain open space conservation lands.

OSC1.9 **Federal, State and County Open Space and Conservation Programs.** Make maximum use of Federal, State and county programs wherever possible in all matters concerned with open space and conservation.

OSC1.10 **Public Education and Stewardship.** Promote public education, environmental programs, and stewardship of open space and natural resources conservation.

OSC1.11 **Sustainable Landscape Practices.** Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed-use residential developments, commercial and industrial areas with landscaping practices that minimize water usage.

OSC1.12 **Landscaping and Plazas.** Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.

OSC1.13 **Yard and Open Space Requirements in New Development.** Ensure that required yard and open spaces are provided for as part of new multi-family residential, mixed-use, commercial and industrial development.

OSC1.14 **Protection of Conservation and Scenic Areas.** Protect conservation and scenic areas from deterioration or destruction by vandalism, private actions or public actions.

OSC1.15 **Heritage Trees.** Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24of the Municipal Code).

OSC1.16 **Visual Amenities in Public Improvements.** Require that all public improvements to facilities, such as streets, civic structures and major municipal projects, recognize the need for visual amenities such as landscaping, public plazas, public art, and pedestrian and bicycle access.

Implementing Programs

OSC1.A **Provide Incentives for Maintaining Private Lands in Open Space.** Establish programs to provide incentives for maintaining private lands in open space and for insuring open areas within future developments through programs including but not limited, to cluster development, acquisition of a permanent open space easement, and/or transfer of development rights.

OSC1.B **Continue Subdivision Assessments.** Continue subdivision assessments for parks and open space purposes consistent with the Subdivision Ordinance.

OSC1.C **Promote Environmental Stewardship.** Promote public education, environmental programs and stewardship of natural resources and open space preservation within the City.

Goal OSC2
PROVIDE PARKS AND RECREATION FACILITIES

Policies

OSC2.1 **Open Space for Recreation Use.** Provide open space lands for a variety of recreation opportunities, make improvements, construct facilities and maintain programs that incorporate sustainable practices that promote healthy living and quality of life.

OSC2.2 **Planning for Residential Recreational Needs.** Work with residential developers to ensure that parks and recreational facilities planned to serve new development will be available concurrently with need.

OSC2.3 **Recreation Requirements for New Development.** Require dedication of improved land, or payment of fee in lieu of, for park and recreation land for all residential uses.

OSC2.4 **Parkland Standards.** Strive to maintain the standard of 5 acres of parkland per 1,000 residents.

OSC2.5 **Schools for Recreational Use.** Coordinate with the local school districts to continue to operate school sites for local recreation purposes.

OSC2.6 **Pedestrian and Bicycle Paths.** Develop pedestrian and bicycle paths consistent with the recommendations of local and regional trail and bicycle route projects, including the Bay Trail.

OSC2.7 **Conservation of Resources at City Facilities.** Reduce consumption of water, energy, landfilled waste, and fossil fuels in the construction, operations and maintenance of City owned and/or operated facilities.

Implementing Programs

OSC2.A **Support Regional Open Space, Conservation and Recreational Efforts.** Coordinate with Mid-Peninsula Regional Park District, San Mateo County and other regional open space and conservation measures to ensure recreational opportunities at existing and future parks and trails.

OSC2.B **Evaluate Recreational Needs.** Evaluate park facilities on a regular basis for their overall function and ability to meet recreational needs. Provide new amenities as needed and based on financial resources to support changing needs of the population and recreational trends.

Goal OSC3
PROTECT AND ENHANCE HISTORIC RESOURCES

Policies

OSC3.1 **Prehistoric or Historic Cultural Resources Investigation and Preservation.** Preserve historical and cultural resources to the maximum extent practical.

OSC3.2 **Prehistoric or Historic Cultural Resources Protection.** Require significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation, and to ensure compliance with local, State and Federal regulations.

OSC3.3 **Archaeological or Paleontological Resources Protection.** Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal. Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.

OSC3.4 **Prehistoric or Historic Cultural Resources Found During Construction.** Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

OSC3.5 **Consultation with Native American Tribes.** Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding General Plan Amendments and land use policy changes.

OSC3.6 **Identification of Potential Historic Resources.** Identify historic resources for the historic district in the Zoning Ordinance and require design review of proposals affecting historic buildings.

Implementing Programs

OSC3.A **Evaluate Historic Resources Around the Downtown Specific Plan Area.** Hire a cultural resources professional to conduct a Historic Resources Survey of potential infill sites around the Downtown Specific Plan to determine whether the designated infill housing sites, or adjacent lots, contain buildings eligible to the California Register and/or the historic zoning designation.

OSC3.B **Support a Study of Cultural Resources on the Veterans Affairs' Clinic Site.** Work with the Department of Veterans Affairs to ensure study and protection of cultural resources through oversight by a cultural resource professional of any proposed development on the vacant portion of the Veterans Affairs' Clinic site.

Goal OSC4
PROMOTE SUSTAINABILITY AND CLIMATE ACTION PLANNING

Policies

OSC4.1 **Sustainable Approach to Land Use Planning to Reduce Resource Consumption.** Encourage, to the extent feasible, (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.

OSC4.2 **Sustainable Building.** Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.

OSC4.3 **Renewable Energy.** Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.

OSC4.4 **Vehicles Using Alternative Fuel.** Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug in recharging stations.

OSC4.5 **Energy Standards in Residential and Commercial Construction.** Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.

OSC4.6 **Waste Reduction Target.** Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

OSC4.7 **Waste Management Collaboration.** Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.

OSC4.8 **Waste Diversion.** Develop and implement a zero waste policy, or implement standards, incentives, or other programs that would lead the community towards a zero waste goal.

OSC4.9 **Climate Action Planning.** Undertake annual review and updates, as needed, to the City's Climate Action Plan (CAP).

OSC4.10 **Energy Upgrade California.** Consider actively marketing and providing additional incentives for residents and businesses to participate in local, State, and/or Federal renewable or energy conservation programs.

Implementing Programs

OSC4.A **Develop a Residential Energy Efficiency Program.** Develop an energy efficiency/renewable energy program or policy for the residential and commercial sectors through education, social marketing methods, standards and/or incentive programs to the degree feasible.

OSC4.B **Monitor the City's Climate Action Plan.** Establish a Climate Action Plan monitoring and progress reporting program.

OSC4.C **Expand the Green Business Program.** Expand Green Business Certification Program/Include Green Business education to new business permit applicants.

OSC4.D **Promote Local Food Production.** Develop a promotion and education program to encourage local and/or organic food production, including community gardens.

Goal OSC5
ENSURE HEALTHY AIR AND WATER QUALITY

Policies

OSC5.1 **Air and Water Quality Standards.** Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.

OSC5.2 **Development in Industrial Areas.** Evaluate development projects in industrial areas for impacts to air and water resources in relation to truck traffic, hazardous materials use and production-level manufacturing per the California Environmental Quality Act (CEQA) and require measures to mitigate potential impacts to less than significant levels.

OSC5.3 **Water Conservation.** Encourage water-conserving practices in businesses, homes and institutions.

Implementing Programs

OSC5.A **Expand Water Conservation Programs.** Expand the Menlo Park Municipal Water District's conservation programs through education, social marketing methods, establishing standards, and providing incentives.

Section III

Noise Goals, Policies and Programs

A The Importance of Noise Attenuation

The purpose of the Noise Element is to appraise existing noise problems in the community and to provide guidance to the community and developers for avoiding problems in the future. It also can provide the basis for code enforcement and other regulations, including implementation of the City's Noise Ordinance to control nuisance noise.

Noise is part of everyday life in a community and is generally defined as unwanted sound. Whether a sound is unwanted depends on when and where it occurs, what the listener is doing when it occurs, characteristics of the sound (loudness, pitch and duration, speech or music content, irregularity), and how intrusive it is above background sound levels. Acceptable levels of noise vary from land use to land use. Also, in any one location, the noise level will vary over time, from the lowest background or ambient levels to that of passing airplanes or construction equipment. Various techniques have been developed that measure the effects of noise levels over a period of time.

It is difficult to specify noise levels that are generally acceptable to everyone. What is annoying to one person may be unnoticed by another. Standards may be based on documented complaint activity in response to noise levels, or based on studies on the ability of people to sleep, talk, or work under various noise conditions. All such studies, however, recognize that individual responses vary considerably. Standards usually address the needs of most of the general population. With this caution in mind, noise standards for planning purposes need to examine outdoor and indoor noise levels acceptable for different uses. The standards must relate to existing conditions in the City so that they are realistically enforceable and consistent with other General Plan policies.

B Noise Goal

Goal N1 — ACHIEVE ACCEPTABLE NOISE LEVELS

It is the goal of Menlo Park to have acceptable noise levels.

Excessive noise is a concern for many residents of Menlo Park. These concerns can be managed with proper mitigation or through the implementation of the City's noise ordinance. The City of Menlo Park recognizes the issue of noise and has standards to protect the peace, health and safety of residents and the community from unreasonable noise from any and all sources in the community and to strive to locate uses compatible to the area to minimize escalation of noise from mobile and stationary sources.

C Noise Policies and Implementing Programs

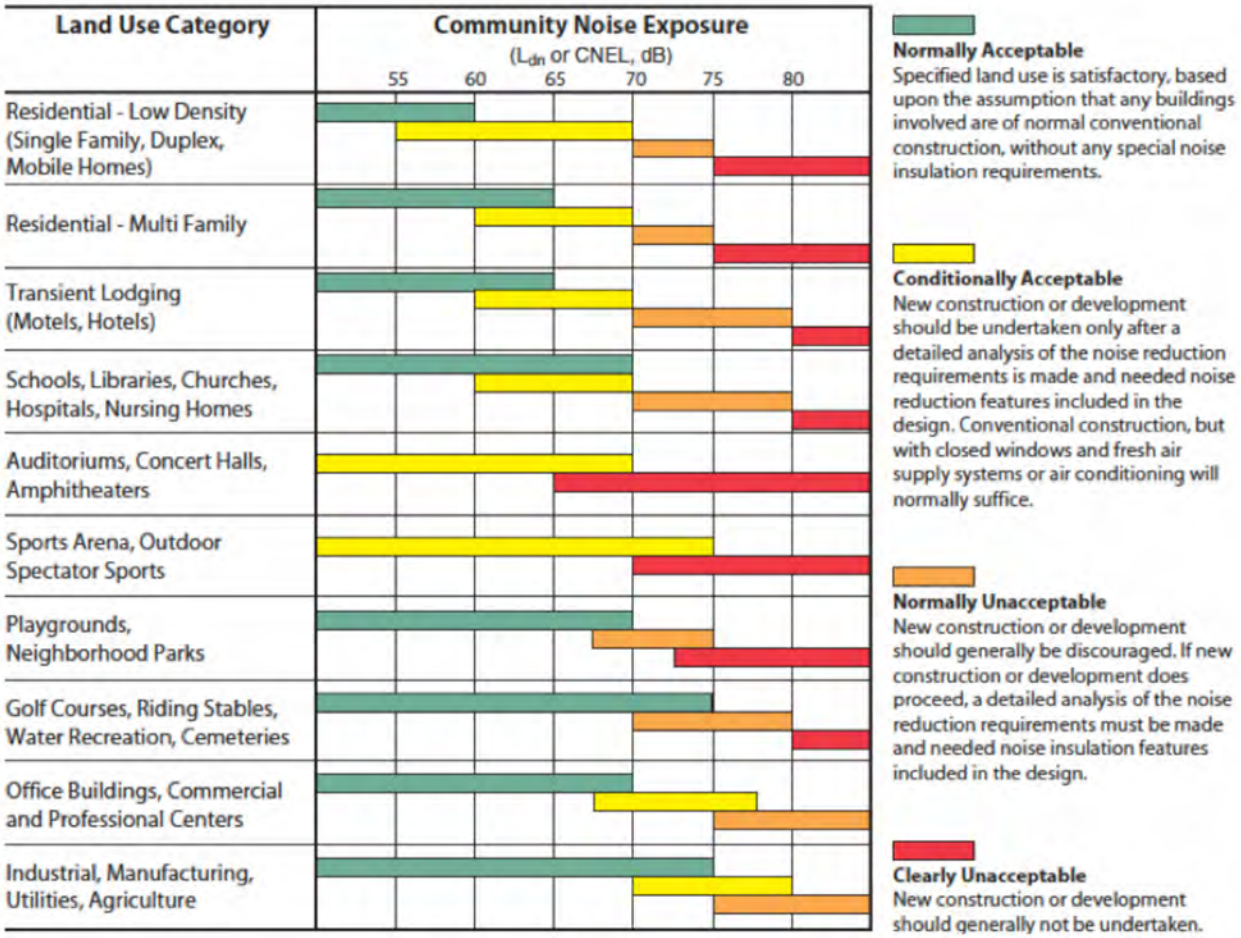
Goal N1
ACHIEVE ACCEPTABLE NOISE LEVELS

Policies

N1.1 **Compliance with Noise Standards.** Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, and subdivision and zoning codes.

N1.2 **Land Use Compatibility Noise Standards.** Protect people in new development from excessive noise by applying the City's Land Use Compatibility Noise Standards for New Development (see chart on the next page) to the siting and required mitigation for new uses in existing noise environments.

Land Use Compatibility Noise Standards for New Development



N1.3 **Exterior and Interior Noise Standards for Residential Use Areas.** Strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development, and reduce outdoor noise levels in existing residential areas where economically and aesthetically feasible.

N1.4 **Noise Sensitive Uses.** Protect existing residential neighborhoods and noise sensitive uses from unacceptable noise levels and vibration impacts. Noise sensitive uses include, but are not limited to, hospitals, schools, religious facilities, convalescent homes and businesses with highly sensitive equipment. Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation and locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.

N1.5 **Planning and Design of New Development to Reduce Noise Impacts.** Design residential developments to minimize the transportation-related noise impacts to adjacent residential areas and encourage new development to be site planned and architecturally designed to minimize noise impacts on noise-sensitive spaces. Proper site planning can be effective in reducing noise impacts.

N1.6 **Noise Reduction Measures.** Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.

N1.7 **Noise and Vibration from New Non-Residential Development.** Design non-residential development to minimize noise impacts on nearby uses. Where vibration impacts may occur, reduce impacts on residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration near rail lines and industrial uses.

N1.8 **Potential Annoying or Harmful Noise.** Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

N1.9 **Transportation Related Noise Attenuation.** Strive to minimize traffic noise through land use policies, traffic-calming methods to reduce traffic speed, law enforcement and street improvements, and encourage other agencies to reduce noise levels generated by roadways, railways, rapid transit, and other facilities.

N1.10 **Nuisance Noise.** Minimize impacts from noise levels that exceed community sound levels through enforcement of the City's Noise Ordinance. Control unnecessary, excessive and annoying noises within the City where not preempted by Federal and State control through implementation and updating of the Noise Ordinance.

Implementing Programs

N1.A **Require Acoustical Studies.** Require acoustical studies for all new multi-family residential projects within the projected Ldn 60 dB noise contours so that noise mitigation measures can be incorporated into project design and site planning.

N1.B **Reduce Existing Vehicular Noise Through Enforcement.** Actively enforce the provisions of the California Motor Vehicle Code pertaining to vehicle speed and noise emission.

N1.C **Consider Noise Impacts in Street Design.** Employ noise mitigation practices and materials, as necessary, when designing future streets and when improvements occur along existing road segments. Mitigation measures should consider quieter pavements and emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas. Strive to maintain smooth street surfaces adjacent to land uses that are sensitive to noise intrusion.

N1.D **Minimize Construction Activity Noise.** Minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and enforcement of the City's Noise Ordinance.

N1.E **Consider Noise Levels in City Equipment Purchases.** Include noise specifications in requests for equipment information and bids for new City equipment and consider this information as part of evaluation of the bids. The City of Menlo Park should consider noise emission when purchasing vehicles, construction equipment, etc. This consideration should be balanced with the required performance and cost.

N1.F **Work with Other Agencies to Reduce Transportation-Related Noise Levels.** Work closely with Caltrans, San Mateo County Department of Public Works and other jurisdictions to reduce noise levels along State highways and county roadways through or near the City.

N1.G **Monitor Airport Noise.** Engage airport authorities and participate in regional planning efforts to ensure future activities and flight patterns at commercial airports do not negatively impact noise levels in the city.

N1.H **Work with Railroad Operators to Reduce Noise and Vibration Levels.** Work with the railroad operators (e.g, Caltrain, Union Pacific, etc.) to reduce, to the extent possible, the contribution of railroad train noise and vibration to Menlo Park's noise environment.

N1.I **Work with Neighboring Communities When Implementing Noise Policies and Programs.** Work with neighboring communities to ensure compliance with the land use and noise compatibility policies contained in this Noise Element at Menlo Park's boundaries.

N1.J **Evaluate Noise Related Impacts of City Actions as Appropriate.** Analyze in detail the potential noise impacts of any actions that the City may take or act upon which could significantly alter noise level in the community.

Section IV

Safety Goals, Policies and Programs

A Overview of Safety Considerations

The purpose of the Safety Element is to identify and appraise hazards in the community in order to assure community safety. The Safety Element focuses on protection of the community from risks associated with earthquakes, floods, fires, toxic waste, and other hazards. In addition, issues such as disaster preparedness and emergency evacuation routes are addressed in the Safety Element. Some level of risk associated with these factors is unavoidable; the Safety Element is the means by which the City defines what measures will be undertaken to reduce these risks to levels determined by the City to be reasonable.

The extent of a hazard depends on local conditions, since most hazards are confined to a particular area or site. Various health and safety hazards should be considered in planning the location, design, intensity, density and type of land uses in a given area. Long-term costs to the City, such as maintenance, liability exposure and emergency services, are potentially greater where high hazards exist.

B Safety Goal

GOAL S1 — ASSURE A SAFE COMMUNITY

Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.

The Safety Element of the General Plan is aimed at reducing potential risk of death, injuries, damage to property, and the economic and social dislocation resulting from fire, flood, geologic and other hazards. The General Plan provides policies and standards for the type, location, intensity and design of development in areas of potential hazards. The intent is not to remove all risks associated with each specific type of hazard, but to reduce risks to life and property and to make informed decisions about land use and development near these hazards.

C Safety Policies and Implementing Programs

Goal S1
ASSURE A SAFE COMMUNITY

Policies

General Safety Policies

S1.1 **Location of Future Development.** Permit development only in those areas where potential danger to the health, safety and welfare of the residents of the community can be adequately mitigated.

S1.2 **Location of Public Improvements.** Avoid locating public improvements and utilities in areas with identified flood, geologic and/or soil hazards to avoid any extraordinary maintenance and operating expenses. When the location of public improvements and utilities in such areas cannot be avoided, assure that effective mitigation measures will be implemented.

S1.3 **Hazard Data and Standards.** Integrate hazard data (geotechnical, flood, fire, etc.) and risk evaluations into the development review process and maintain, develop and adopt up-to-date standards to reduce the level of risk from natural and human-caused hazards for all land use.

S1.4 **Inter-Jurisdictional Cooperation.** Continue to improve inter-jurisdictional cooperation in regard to public safety concerns related to natural hazards, disaster response and mitigation.

S1.5 **New Habitable Structures.** Require that all new habitable structures incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.

S1.6 **Design and Location of Utilities.** Monitor appropriate location, design, construction, maintenance and inspection standards for utility systems traversing hazard areas within the City limits. This would include evaluation and upgrading outdated systems and infrastructure, coordination with the State Public Utilities Commission and locating new utility systems away from potential hazard areas.

S1.7 **Hazard Reduction.** Continue to require new development to reduce the seismic vulnerability of buildings and susceptibility to other hazards through enforcement of the California Building Standards Code and other programs.

S1.8 **Safety Element Updates.** Review and comprehensively revise the Safety Element whenever substantial new scientific data or evidence related to prevention of natural and human hazards becomes available, and coordinate with other General Plan elements and City emergency plans.

S1.9 **Community Safety Services and Facilities.** In coordination with other agencies, maintain adequate and cost-effective levels of safety services, facilities and programs to address safety concerns in Menlo Park.

S1.10 **Safety Review of Development Projects.** Continue to require hazard mitigation, crime prevention, fire prevention and adequate access for emergency vehicles in new development.

S1.11 **Visibility and Access to Address Safety Concerns.** Require that residential development be designed to permit maximum visibility and access to law enforcement and fire control vehicles consistent with privacy and other design considerations.

S1.12 **Safe Access to Schools.** Encourage school districts to provide direct, safe and convenient pedestrian and bicycle access between school sites and nearby residential neighborhoods to provide safe passage for students and teachers.

Geologic and Seismic Safety Policies

S1.13 **Geotechnical Studies.** Continue to requiresite-specific geologic and geotechnical studies for land development or construction in areas of potential land instability as shown on the State and/or local geologic hazard maps or identified through other means.

S1.14 **Potential Land Instability.** Prohibit development in areas of potential land instability identified on State and/or local geologic hazard maps, or identified through other means, unless a geologic investigation demonstrates hazards can be mitigated to an acceptable level as defined by the State of California.

S1.15 **Funding Earthquake Resistance Improvements.** Support State and Federal financial assistance or tax incentive programs to encourage repair, demolition or abatement of earthquake hazardous structures.

Hazardous Materials Policies

S1.16 **Hazardous Materials Regulations.** Review and strengthen, if necessary, regulations for the structural design and/or uses involving hazardous materials to minimize risk to local populations. Enforce compliance with current State and local requirements for the manufacturing, use, storage, transportation and disposal of hazardous materials, and the designation of appropriate truck routes in Menlo Park.

S1.17 **Potential Exposure of New Residential Development to Hazardous Materials.** Minimize risk associated with hazardous materials by assessing exposure to hazardous materials of new residential development and sensitive populations near existing industrial and manufacturing areas. Minimize risk associated with hazardous materials.

S1.18 **Potential Hazardous Materials Conditions Investigation.** Continue to require developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.

S1.19 **Disposal of Existing Hazardous Materials on Sites Planned for Housing.** Continue to require that sites planned for housing be cleared of hazardous materials (paint, solvents, chlorine, etc.) and the hazardous materials disposed in compliance with State and Federal laws.

S1.20 **Pipeline Safety.** Require, as much as possible, that new pipelines and other channels carrying hazardous materials be placed to avoid residential areas and, in particular, areas where the population is less mobile.

Flood Control, Tsunami and Dam Safety Policies

S1.21 **Flood and Tsunami Hazard Planning and Mapping.** Consider the threat of flooding and tsunamis in planning and management practices to minimize risk to life, environment and property and maintain up-to-date tsunami hazard zones maps and flood maps as new information is provided by FEMA and other regional agencies. Modify land use plans in areas where tsunamis and flooding are hazards, and permit only uses that will sustain acceptable levels of damage and not endanger human lives in the event of inundation.

S1.22 **Flood Damage Prevention.** Continue to applystandards for any construction projects (new structures and existing structures proposed for substantial improvement) in areas of special flood hazard in accordance with FEMA and the Flood Damage Prevention Ordinance, including the use of flood-resistant construction materials and construction methods that minimize flood damage. Locate new essential public facilities outside of flood zones, such as City operations facilities, police and fire stations, and hospitals, to the extent feasible.

S1.23 **Potential Dam Inundation.** Consider potential risks from dam inundation in the development approval process.

S1.24 **Dam Safety.** Support programs by the California Division of Safety of Dams to retrofit or replace dams or to increase earthquake resistance of dams and mitigate impacts of dam failures. State efforts to inspect dams and evaluate dam safety requirements shall also be supported.

S1.25 **Creeks and Drainage-ways.** Seek to retain San Francisquito and Atherton creeks/channels in their natural state in order to prevent undue erosion of creek banks. Protect creek-side habitat and provide maintenance access along creeks where appropriate.

S1.26 **Erosion and Sediment Control.** Continue to requirethe use of best management practices for erosion and sediment control measures with proposed development in compliance with applicable regional regulations.

S1.27 **Regional Water Quality Control Board (RWQCB) Requirements.** Enforce stormwater pollution prevention practices and appropriate watershed management plans in the RWQCB general National Pollutant Discharge Elimination System requirements, the San Mateo County Water Pollution

Prevention Program and the City's Stormwater Management Program. Revise, as necessary, City plans so they integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies.

S1.28 **Sea Level Rise.** Consider sea level rise in siting new facilities or residences within potentially affected areas.

Fire Safety Policies

S1.29 **Fire Equipment and Personnel Access.** Require adequate access and clearance, to the maximum extent practical, for fire equipment, fire suppression personnel and evacuation for high occupancy structures in coordination with the Menlo Park Fire Protection District.

S1.30 **Coordination with the Menlo Park Fire District.** Encourage City-Fire District coordination in the planning process and require all development applications to be reviewed and approved by the Menlo Park Fire Protection District prior to project approval.

S1.31 **Fire Resistant Design.** Require new homes to incorporate fire resistant design and strategies such as the use of fire resistant materials and landscaping, and creating defensible space (e.g. areas free of highly flammable vegetation).

Public Safety and Emergency Response Policies

S1.32 **Location of Critical Facilities.** Locate critical facilities, e.g., hospitals, schools, Emergency Operations Center (E.O.C.), etc., to minimize impacts from hazards.

S1.33 **Continued Functioning of Utilities and Critical Use Facilities (Essesntial Service Buildings).** Encourage local public utilities and service providers to locate and design facilities and systems to ensure continued service in emergency conditions.

S1.34 **Disaster Preparedness Planning.** Ensure disaster preparedness in cooperation with other public agencies and appropriate public-interest organizations. Expand abilities of residents to assist in local responses to

disasters. Ensure adequate resources, facilities, and other support for emergency response equitably throughout the City.

S1.35 **Community Preparedness.** Encourage improved safety programs for schools, institutions and industries to promote greater public awareness of all types of hazards and appropriate responses and support the San Mateo County Office of Emergency Services' program on emergency preparedness.

S1.36 **Emergency Notification System.** Continue to support and improve on the Emergency Notification System for disaster information release in emergencies.

S1.37 **Emergency Connectors and Evacuation Routes.** Maintain a system of emergency connectors and evacuation routes as part of the City's disaster planning.

S1.38 **Emergency Vehicle Access.** Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.

S1.39 **Emergency Preparedness for Sensitive Populations.** Review and improve disaster response capabilities, recovery operations and evacuation planning for sensitive populations in the event of earthquake or other disasters.

Implementing Programs

General Safety Implementing Programs

S1.A **Link the City's Housing and Safety Elements.** Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.

S1.B **Maintain Up-to-Date Hazard Maps and Databases.** Maintain up-to-date databases and maps of geologic and other hazards to identify areas prone to hazards for planning purposes on an on-going basis concurrently with the Housing Element Updates.

S1.C **Review Building Code Updates.** Continue to review State Building Code updates and incorporate local amendments as appropriate to require that new construction be designed under the most current safety standards. The review of updates should also consider requirements for facilities housing sensitive populations, such as seniors and persons living with disabilities.

S1.D **Require Early Investigation of Potential Hazard Conditions.** Require that potential geologic, seismic, soils, and/or hydrologic problems confronting public or private development be thoroughly investigated at the earliest stages of the design process, and that these topics be comprehensively evaluated in the environmental review process by persons of competent technical expertise.

S1.E **Modify the Zoning and Subdivision Ordinances as Needed to Address Hazard Mitigation.** Modify the Zoning Ordinance as needed when new information on natural hazards becomes available and to provide for hazard reduction measures as a part of the design criteria for development review. Review the Subdivision Ordinance and modify as needed to include hazard reduction in the process of dividing land for development.

S1.F **Work with the Public Utilities Commission.** Work with the California Public Utilities Commission to require public utilities to apply the policies in this element to the planning and operation of their facilities, and to coordinate their activities with local planning agencies.

S1.G **Share Hazard Data with Other Agencies.** Participate in a cooperative County-wide program to pool natural hazard data developed through special studies or via the project review process and continue to update and implement the Local Hazard Mitigation Plan.

Geologic and Seismic Safety Implementing Programs

S1.H **Enforce Seismic Risk Analysis and Adequate Construction Standards.** Enforce seismic risk analysis and adequate construction standards through the building permit and inspection process.

S1.I **Review Approach to Potentially Earthquake Hazardous Buildings.** Consider establishing a program to identify earthquake hazardous buildings and incentives to encourage repair or demolition.

Hazardous Materials Implementing Programs

S1.J **Require Health and Safety Plan for Hazardous Materials.** Require the preparation of health and safety plans to be used to protect the general public and all workers in construction areas from potentially hazardous materials. The plan shall describe the practices and procedures to protect worker health in the event of an accidental release of hazardous materials or if previously undiscovered hazardous materials are encountered during construction. The plan shall include items such as spill prevention, cleanup and evacuation procedures. The plan will help protect the public and workers by providing procedures and contingencies that will help reduce the exposure to hazardous materials.

S1.K **Track Remediation Needs for Existing Known Hazardous Soils and Other Hazardous Materials.** Monitor remediation of existing known hazards, such as contaminated soils and clean-up of leaking or abandoned underground storage tanks.

Flood Control, Tsunami and Dam Safety Implementing Programs

S1.L **Evaluate New Community Facilities Proposed in Dam Inundation Zones.** Require that new community facilities located within dam inundation zones evaluate the potential for flooding and the impact on evacuation during the development approval process.

Fire Safety Implementing Programs

S1.M **Fire Sprinkler Requirements.** Work with the Fire District on sprinkler requirements that are beyond State minimum code.

Public Safety and Emergency Response Implementing Programs

S1.N **Investigate Potential Impact of Train Derailment on Emergency Services.** Coordinate with CalTrain and Union Pacific. Expand to encompass emergency plans for all transit and paratransit operators.

S1.O **Encourage Disaster Drills in Schools.** Coordinate with the school districts in conducting disaster drills in schools, augmented with a community awareness campaign on how when, and where children are to be reunited with their parents.

S1.P **Coordinate the General Plan with City Emergency Planning Efforts.** Implement and coordinate the Safety Element with other General Plan elements and City emergency plans — Local Hazard Mitigation Plan (LHMP) and Emergency Operation Plan (EOP) — and make necessary revisions.

Section V

Open Space/Conservation Background

A Natural Resources

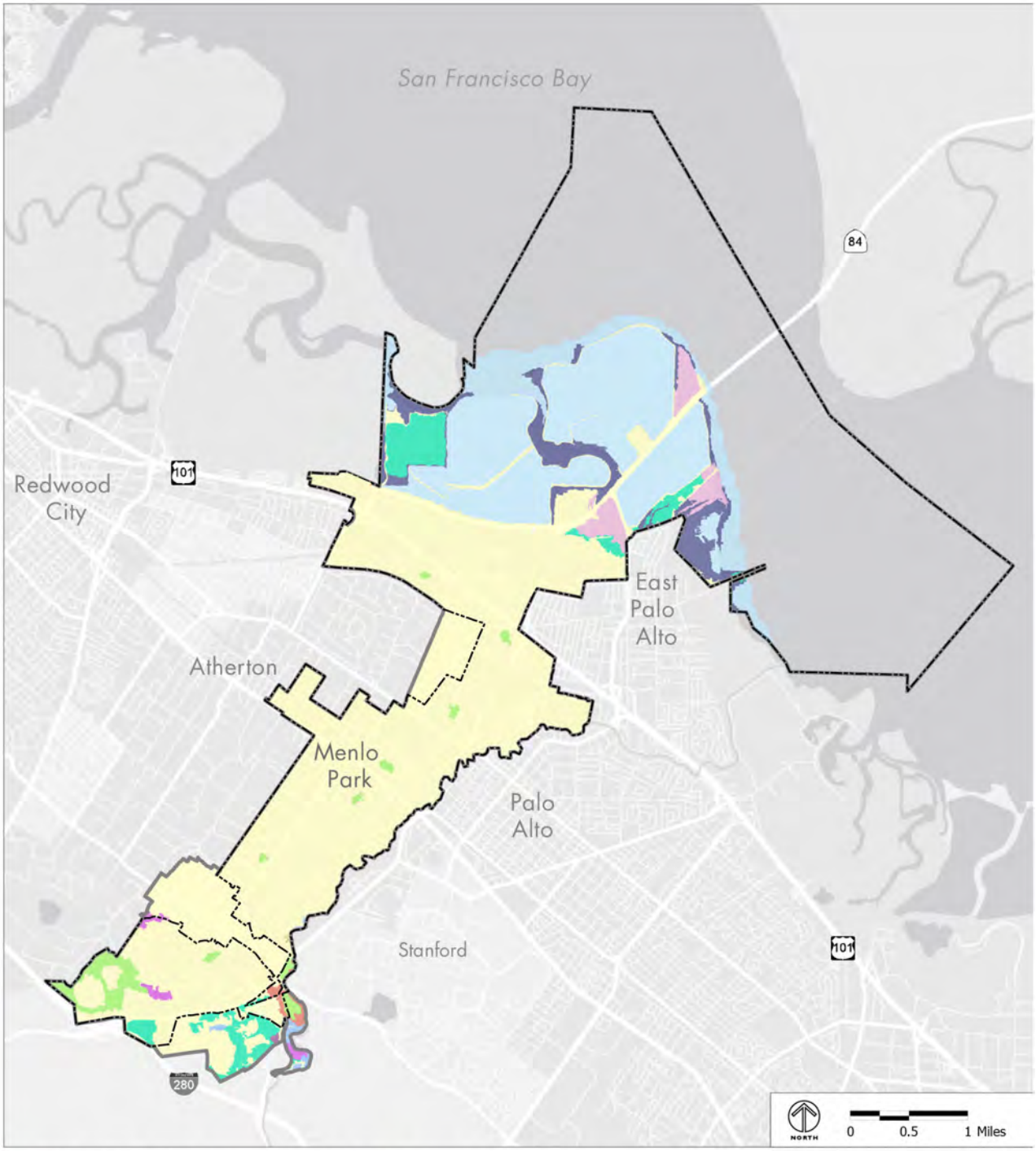
Menlo Park stretches from 326 feet above sea level in the foothills of Jasper Ridge (located outside the City limits and part of the Santa Cruz Mountains) in the west, through the flatlands in the center of the valley, to sea level at the marshes and mudflats of San Francisco Bay in the west. The City's center is relatively flat, with slopes of approximately 0.5 to 0.8 percent. The higher, hilly portion of the City is west of the street Alameda de las Pulgas. The lower, flatter portion of the City is east of Alameda de las Pulgas. Topography helps to define several sub-areas of the City from a natural resources standpoint, as follows:

(1) **Eastern.** The eastern edge of the City, east of U.S. 101 to the Bay, consists of near-sea-level elevation flat land roughly 4 to 10 feet above sea level. This area is comprised of coastal salt marshes, mudflats, as well as urbanized land or baylands.

(2) **Central.** Central Menlo Park, lying west of U.S. 101 and east of Alameda de las Pulgas, is gently sloping from roughly 20 feet above sea level to 130 feet above sea level, and consists mostly of flat, urbanized area. The southern border of central Menlo Park is flanked by the San Francisquito Creek riparian canopy and channel.

(3) **Western.** The far western side of Menlo Park, located from the western edge of Alameda de las Pulgas to City limits, is roughly 130 to 300 feet above sea level and consists of the hilly grasslands below Jasper Ridge, which have been partially urbanized.

The natural community types in Menlo Park are defined by a combination of dominant plant community characteristics, landform, land use and ecological function. They include the Coastal Salt Marsh and Salt Ponds; Tidal Mudflats; San Francisquito Creek; Oak Woodlands; and Grasslands. Existing vegetation in Menlo Park is shown on the map on the next page.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; USDE Forest Service, March 2007.

- California Bay
- Annual Grasses and Forbs
- Coast Live Oak
- Non-Native/Ornamental Conifer/Hardwood Mixture
- Non-Native/Ornamental Grass
- Pickleweed - Cordgrass
- Riparian Mixed Hardwoods
- Tule - Cattail
- Urban
- Valley Oak
- Water
- City Limits

Existing Vegetation

Description of Natural Resources Types

Coastal Salt Marsh and Salt Ponds

Salt ponds and marshes once covered the edges of Bay, including the baylands in Menlo Park. In 1850, the conversion of these marshes through diking and filling began, and by 1969, just 75 square miles remained throughout the San Francisco Bay Area. Menlo Park has large, intact marshes within its borders. Ravenswood Slough, Westpoint Slough, and Flood Point Slough contribute to the approximately 2,300 acres of tidal mudflats and 300 acres of salt marsh of the City.

These salt and brackish water marshes that border the Bay are a part of the Don Edwards Bay National Wildlife Refuge, and are associated with the South Bay Salt Pond Restoration Project. Most of the salt ponds and marshes in or near Menlo Park have been (or will be) restored to or are retained in their natural state.

Coastal salt marshes are closely associated with tidal action and are characterized by sloughs (marshy creeks). These habitats are dominated by native species such as pickleweed and edged by cordgrass and salt grass. Coastal salt marshes are high biodiversity wildlife habitats, and are associated with a wide variety of native shorebirds, raptors, songbirds, waterfowl, fish, and crustaceans. Special status species are not uncommon in San Francisco Bay Area salt marshes.

Tidal Mudflats

Tidal mudflats consist of unvegetated mud deposits along the shoreline that are regularly inundated and exposed by the tides of the Bay waters. These mudflats provide a habitat for a wide variety of crabs, snails, sea squirts, clams, mussels, and tubeworms. These species offer a rich feeding ground of macro-invertebrates to tens of thousands of migratory and resident shorebirds that travel from as far as Canada and Alaska. At higher tides, large marine species such as leopard sharks, starry flounder, and bat rays feed on these same macro-invertebrates. Migratory birds are an example of the special status species found in this habitat.

San Francisquito Creek

In the urbanized portion of Menlo Park, San Francisquito Creek is the main creek. It originates west of Menlo Park just below Searsville Lake in Jasper Ridge, defines the southern border of Menlo Park for roughly three miles from the intersection of Alpine Road and Junipero Serra Boulevard, until it reaches Euclid Avenue near U.S. 101, then

turns eastward and empties into the bay from within the borders of East Palo Alto. San Francisquito Creek flows through Menlo Park largely in its natural alignment where it forms the southern boundary of the Menlo Park City limits.

Riparian vegetation around San Francisquito Creek spans a 25-75 meter-wide space, depending on adjacent land use and topography, and its canopy consists primarily of native trees—willow, bay laurels, redwoods, alders, cottonwoods, California buckeye, valley oaks, and coast live oaks. San Francisquito Creek shrub vegetation commonly consists of native species such as blackberry, and poison oak. In the urbanized lower reaches of the creek, non-native exotics such as eucalyptus, black locust, acacia, bamboo, pines, and redwoods are mixed in with the native plant species.

Riparian habitats, even in heavily urbanized areas, are very valuable to wildlife, providing food, water, and shelter in one location. Riparian habitat is associated with a wide variety of native resident and migratory songbirds, raptors, rodents, bats, and other mammals, as well as fish and amphibians. Urban creeks, such as San Francisquito that have preserved canopies and/or understories, are usually the most species rich, and some of these species are under special protections.

Oak Woodlands

Mature oaks provide nesting and foraging opportunities for birds, including raptors. They also provide essential food resources for animals that include acorns in their diet, such as squirrels and woodpeckers. Other wildlife species that commonly nest or den in woodland habitat include mammals such as woodrats and deer mice, and birds such as owls, raptors, and songbirds. Native reptiles and amphibians associated with this habitat include snakes, newts, and salamanders. Contiguous oak woodlands with mature trees are relatively biodiverse and species rich, and some species found in these habitats are under special protections.

Grasslands

The foothills of Menlo Park are located on the City's western border and are dominated by common non-native annual grasses. Portions of this area have been developed for housing and related uses, while another portion of these foothills, owned by Stanford University, have been preserved as open space. Plant species include wild oats, Italian ryegrass, foxtail barley, yellow star thistle, field bindweed, prickly lettuce, prickly ox-tongue, and field mustard. The grasslands are also dotted with taller trees and shrubs, including native California species such as coyote bush, toyon, valley oak, and coast live oak. Adult, large circumference non-native trees, such as black walnut, red gum, and acacia, are also present.

This open space area provides important foraging habitat for raptors, native prey and predator mammals, and reptiles. Grasslands which are large and contiguous are usually the most species-rich. Some grassland species, such as nesting raptors, are under special protection.

Developed Baylands

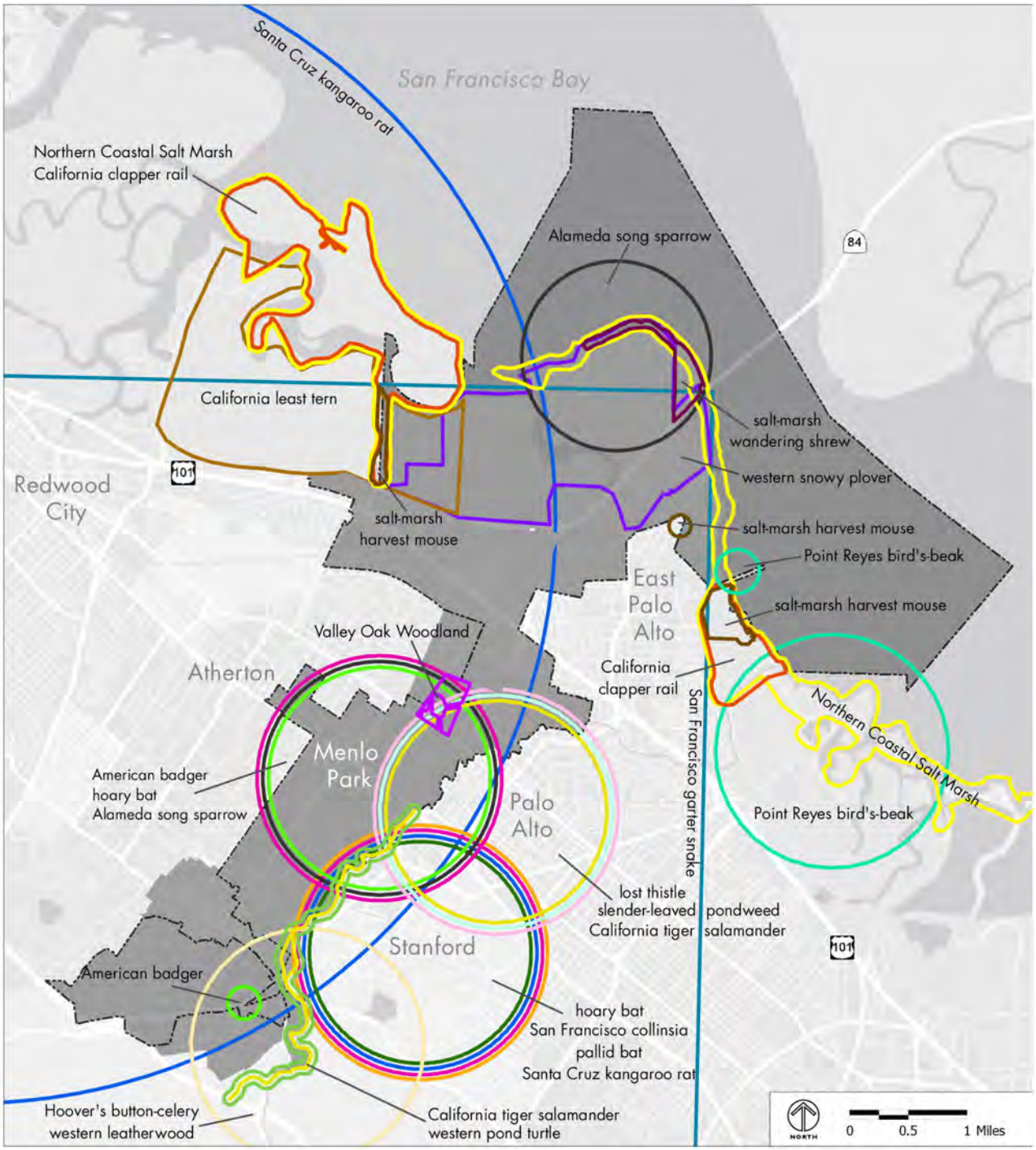
Developed sites in eastern Menlo Park along the bayshore have been built on diked and filled coastal marshes. These marshes were converted in the 1960s to create more land for development. In the process, these marshes have been cut off from tidal influence and filled with materials to raise their surface level and fill in their slough channels. While in some cases such bayfill lands can start to revert to wetland conditions, Menlo Park's developed bayland areas are primarily paved, landscaped with non-native plants, and disturbed with automobile activity. Developed salt marsh areas typically have relatively low habitat values. Species found in the urbanized baylands are similar to other urbanized areas.

Urbanized Area

The well-landscaped, suburban character of developed areas of Menlo Park includes parks, backyards, and vacant lots that provide habitat for a variety of wildlife species that have adapted to human disturbance. Native and ornamental trees and shrubs in the urban area provide nesting sites for songbirds such as scrub jays, brewer's black birds, and American crows. Parks and quiet streets provide foraging grounds for opportunistic predator and prey wildlife, including turkey vultures, coyotes, and raccoons. Few urban species are under special protections, although a few, such as the red-tailed hawk, are designated protected species.

Special-Status Plant and Wildlife Species

The locations of sightings of special-status plant and wildlife species are shown in the map on the next page. Following the map is a table listing the special-status plant and wildlife species that have the potential for occurring in Menlo Park. They include those listed under the State and Federal Endangered Species Acts, plants listed by the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California and wildlife designated as Species of Special Concern by the California Department of Fish and Wildlife.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; Califonia National Diversity Database, 2012.

Common Name (CNDDB)

- Alameda song sparrow
- American badger
- California clapper rail
- California least tern
- California tiger salamander
- Hoover's button-celery
- Northern Coastal Salt Marsh
- Point Reyes bird's-beak
- San Francisco collinsia
- San Francisco garter snake
- Santa Cruz kangaroo rat
- Valley Oak Woodland
- hoary bat
- lost thistle
- pallid bat
- salt-marsh harvest mouse
- salt-marsh wandering shrew
- slender-leaved pondweed
- western leatherwood
- western pond turtle
- western snowy plover
- City Limit

Special Status Plant and Wildlife Species

California Natural Diversity Database Special Status Species in Menlo Park (2013)

Scientific Name	Common Name	Presence	Federal List	California List	CA Dept. Fish and Wildlife	California Native Plant Society	General Habitat	Micro Habitation
Sensitive Habitat								
	Northern Coastal Salt Marsh	Extant	None	None				
	Valley Oak Woodland	Extant	None	None				
Sensitive Plants								
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Possibly Extirpated	None	None		Plants rare and endangered in California but more common elsewhere.	Coastal salt marsh	Usually in coastal salt marsh with *Salicornia, distichlis, jaumea,* and *spartina*.
Cirsium praeteriens	Lost thistle	Presumed Extant	None	None		Plants presumed extinct in California.	Little information exists on this plant; it was collected from the Palo Alto area at the turn of the 20th century	Although not seen since 1901, this *cirsium* is thought to be quite distinct from other *cirsiums.*
Collinsia multicolor	San Francisco collinsia	Presumed Extant	None	None		Plants rare and endangered in California but more common elsewhere.	Closed-cone coniferous forest, coastal scrub	On decomposed shale (mudstone) mixed with humus.
Dirca occidentalis	western leatherwood	Presumed Extant	None	None		Plants rare and endangered in California but more common elsewhere.	Upland forest, chaparral, woodland, riparian forest, riparian woodland	On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities.
Eryngium aristulatum var. hooveri	Hoover's button-celery	Possibly Extirpated	None	None		Plants rare, threatened, or endangered in California and elsewhere.	Vernal pools	Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast.
Stuckenia filiformis	Slender-leaved pondweed	Presumed Extant	None	None		Plants rare and endangered in California but more common elsewhere.	Marshes and swamps	Shallow, clear water of lakes and drainage channels.
Sensitive Animals								
Ambystoma californiense	California tiger salamander	Extirpated	Threatened	Threatened	Special Concern		Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma Counties DPS federally listed as endangered	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding
Antrozous pallidus	Pallid bat	Presumed Extant	None	None	Special Concern		Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Athene cunicularia	Western burrowing owl	Presumed Extant	None	None	Special Concern		Grasslands, shrub lands	Burrows into ground. Uses a variety of natural and artificial burrowing sites. Prefers short grasses.
Charadrius alexandrinus nivosus	Western snowy plover	Presumed Extant	Threatened	None	Special Concern		Sandy beaches, salt pond levees and shores of large alkali lakes	Needs sandy, gravelly or friable soils for nesting.
Circus cyaneus	Northern harrier	Presumed Extant	None	None	Special Concern		Grasslands, salt marshes, open habitats with rodent populations	Ground nesting, typically near shrubs in marshes.
Dipodomys venustus venustus	Santa Cruz kangaroo rat	Presumed Extant	None	None			Silverleaf manzanita mixed chaparral in the Zayante sand hills ecosystem of the Santa Cruz Mountains	Needs soft, well-drained sand.

California Natural Diversity Database Special Status Species in Menlo Park (2013) — *Continued*

Scientific Name	Common Name	Presence	Federal List	California List	CA Dept. Fish and Wildlife	California Native Plant Society	General Habitat	Micro Habitation
Sensitive Animals								
Emys marmorata	Western pond turtle	Presumed Extant	None	None	Special Concern		A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
Lasiurus cinereus	Hoary bat	Presumed Extant	None	None			Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.
Lanius ludovicianus	Loggerhead shrike	Presumed Extant	None	None	Special Concern		Grasslands, shrub-grasslands, savannah	Nests in landscaping trees and shrubs. Uses barbed wire to impale prey, and for perching.
Reithrodontomys raviventris	Salt-marsh harvest mouse	Presumed Extant	Endangered	Endangered			Only in the saline emergent wetlands of San Francisco Bay and its tributaries	Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.
Sorex vagrans halicoetes	Salt-marsh wandering shrew	Presumed Extant	None	None	Special Concern		Salt marshes of the south arm of San Francisco Bay	Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among Salicornia.
Spinus lawrencii	Lawrence's gold finch	Presumed Extant	None	None	Special Concern		Uplands, non-native grasslands, ruderal	Forages from seed-bearing plants, such as thistles.
Taxidea taxus	American Badger	Presumed Extant	None	None	Special Concern		Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable (easy to dig) soils.	Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Presumed Extant	Endangered	Endangered			Vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County and extreme Northern Santa Cruz County.	Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.
	Tree Nesting Raptors	Presumed Extant	None	None	Special Concern		Grasslands, woodlands	Trees

Source: California Natural Diversity Database, 2013; City of Menlo Park Housing Element Update, General Plan Consistency Update and Zoning Ordinance Amendments Environmental Assessment prepared April 2, 2013

The California Natural Diversity Data Base (CNDDB) indicates 21 special status plant species, animal species or sensitive habitat types with recorded occurrences in the Menlo Park vicinity. Additionally, another five special status animals species are known to occur based on other reports done in Menlo Park.

Special-Status Plant Species

Six plant species with special-status have been recorded in Menlo Park. These species have varied status, but each is considered rare by the California Native Plant Society. Three of these special status plant species have been recorded in the Menlo Park vicinity, the Hoover's button-celery, Point Reyes bird's-beak, and slender-leaved pondweed, and are associated with wet or marshy conditions such as those found in riparian, wetlands, or marshes of the eastern Menlo Park baylands, and central Menlo Park's San Francisquito Creek area. Two other plants, the western leatherwood and San

Francisco collinsia, are associated with drier conditions, such as those of the grasslands on the western edge of Menlo Park. The sixth species, the lost thistle, has been assigned a category indicating likely extinction or extreme rarity within California.

Special-Status Animal Species

Thirteen bird, mammal, reptile, fish, and invertebrate species with special-status have recorded occurrences in Menlo Park as reported by the California Natural Diversity Database. Another four species were found in recent local studies, bringing the total to 17 special status animal species. Information on habitat association, or conditions under which an animal is typically found, assists in predicting its likelihood of occurrence. The habitat association and ranking of these species are described below.

Six of the special-status animal species with recorded occurrences in the Menlo Park vicinity are associated with wetland habitat, specifically with the salt marsh at the northeastern edge of the City. Of these, the California clapper rail, California least tern, salt-marsh harvest mouse, and western snowy plover each are listed as protected on the Federal Endangered Species List. The two other species, the Alameda song sparrow and the salt marsh wandering shrew, are afforded protection through State listing as species of special concern.

Four of the special-status animal species with CNDDB recorded occurrences in Menlo Park are associated with the grasslands on the western boundary of the City, and the oak woodlands in the center of the City. These four grassland or woodland associated special status species are the American badger, pallid bat, hoary bat, and Santa Cruz kangaroo rat. The American badger and pallid bat are State Species of Special Concern.

Two special-status animal species with CNDDB recorded occurrences in Menlo Park are associated with (freshwater) wetlands and riparian habitats such as those of San Francisquito Creek. These are the San Francisco garter snake and western pond turtle. The San Francisco garter snake is on the Federal endangered species list. The western pond turtle is a State of California species of special concern. A third species associated with San Francisquito Creek, the steelhead (a member of the salmon fish family), is Federally threatened.

Sensitive Habitats and Wildlife Dispersal Corridors

The CNDDB search identifies two types of sensitive habitat within the Menlo Park area — coastal salt marsh and oak woodland. Coastal salt marsh occurs on the eastern edge of Menlo Park where the baylands have not been converted. The oak woodland occurs within the center of Menlo Park, and consists of a large patch of native habitat situated within the otherwise urbanized City center. In addition to serving as valuable habitat,

riparian areas serve as important travel corridors for wildlife. San Francisquito Creek's intact, multi-layered canopy of riparian habitat and large creek channel serves as an important wildlife dispersal corridor.

B Parks and Recreation Facilities

The Menlo Park Community Services Department owns and operates parks and recreational facilities in the City of Menlo Park. The City has adopted a goal of maintaining a ratio of five acres of developed parkland per 1,000 residents. Currently, the City provides a net of 220.86 acres of parkland for the residents, with a ratio of 6.79 acres per capita. A detailed list of available parks and recreation facilities located in Menlo Park is shown in the table on the next page.

Parks and Recreation Facilities in Menlo Park (2013)

Name	Location	Size	Description
Facilities			
Arrillaga Family Recreation Center	700 Alma Street	10,000 sq2	A kitchen, lobby area, offices, and 2 patios, 7 main rooms for purposes of banquets, meetings, exercise, dance, and enrichment activities.
Arrillaga Family Gymnasium	600 Alma Street	24,100 sq2	Two full size basketball courts, 3 volleyball courts, 4 badminton courts, and 4 cross-court basketball, a conference room, offices, lobby area, restrooms, and locker rooms.
Arrillaga Family Gymnastics Center	501 Laurel Street	19,380 sq2	A state of the art gymnastics facility, 2 multipurpose rooms, office area, lobby, restrooms, and storage.
Burgess Pool	501 Laurel Street	22,700 sq2	Three pools- performance pool, instructional pool (covered during winter months), and kiddie pool (summer only). The facility contracted to Team Sheeper LLC (Menlo Swim and Sport).
Menlo Children's Center	801 Laurel Street	13,000 sq2	Licensed preschool (18 months to 5 years) and school age (Kindergarten to 5th Grade) services.
Belle Haven Child Development Center	410 Ivy Drive	6,600 sq2	(Licensed by the Department of Social Services.) Quality subsidized, full-time child development services.
Belle Haven After School Center	100 Terminal Ave	2,485 sq2	(Licensed by the Department of Social Services.) Care for children in kindergarten to 6th grade.
Senior Center	110 Terminal Ave	11,000 sq2	Health, recreational, and educational programs, as well as cultural events and social services for older adults. Nutritionally balanced hot meals and door-to-door local transportation to and from the Center are offered on weekdays for minimal cost to the registered patrons. Weekly brown bag through Second Harvest Food Bank, Farmer's Market, monthly free health screenings, HI CAP and tax assistance are also available.
Onetta Harris Community Center	100 Terminal Ave	11,000 sq2	A gym, weight room, computer lab, a large multipurpose room with adjacent kitchen, 3 classrooms, and office space.
Belle Haven Pool	100 Terminal Ave	6,300 sq2	Currently a seasonal pool that is open from mid-June to the end of August; a 25 meter pool with an additional shallow area as well as a small kiddie pool.
Parks			
BedwellBayfront Park	Bayfront Expressway & Marsh Road	155 Acres	An extensive trail system, as part of the San Francisco Bay Trail, allowing hiking, running, bicycling, dog walking, bird watching, kite flying, and photography.
Burgess Park	Alma Street & Burgess Drive	9.31 acres	Little league baseball rield; soccer field (300' x 200'); regulation baseball field; open play field; skate park; 2 lighted tennis courts, children's playground; picnic areas, and restrooms.
Jack W. Lyle Park	Middle Ave & Fremont Street	4.55 acres	Walking path with benches; Open Play field; Half-court basketball; Children's (5 to 12 year old) Playground; and Tot-Lot (2 to 5 year old) Playground.
Fremont Park	Santa Cruz Avenue & University Drive	0.38 acres	Lighted walkways; benches; picnic areas, drinking fountain; and open grass areas. It is home to the City of Menlo Park Summer Concert Series and other downtown parties.
Joseph B. Kelly Park	100 Terminal Ave	8.3 acres	A synthetic turf soccer field with lights, full size track with 4 different exercise apparatuses, lighted tennis courts, lighted basketball court, benches, bleachers, and a full men's and women's bathroom facility.
Marketplace Park	Market Place & Hamilton Avenue	1 acre	Playground, open grass areas, and walkways.
Nealon Park	800 Middle Avenue	9 acres	Five lighted tennis courts, softball field, playground, picnic areas, grass areas, and an off-leash dog area.
Seminary Oaks Park	Seminary Drive & Santa Monica Avenue	3.51 acres	Walking path with benches; open play field; "Serenity Rock Garden"; children's playground, and tot-lot playground.

Parks and Recreation Facilities in Menlo Park (2013) — *Continued*

Name	Location	Size	Description
Parks			
Sharon Hills Park	Altschul Avenue & Valparaiso Avenue	12.5 acres	Walking paths and benches.
Sharon Park	Sharon Park Drive & Monte Rosa Drive	9.83 acres	A small lake with fountain; gazebo; walking path with benches; shaded picnic area; grass areas; natural wooded area; and tot-lot playground.
Stanford Hills Park	Sand Hill Road & Branner Drive	3.11 acres	Benches, walkways, picnic tables, and a large grass area.
Tinker Park	Santa Cruz Avenue & Olive Street	0.54 acres	Tot-lot playground and picnic area.
Willow Oaks Park	Willow Street & Colmen Ave	2.63 acres	Three lighted tennis courts, children's playground, tot-lot playground, public area, off leash dog area, little league field, and large open play field for soccer and other sports.
Hamilton Park	Hamilton Ave	1.2 acres	A play structure, picnic tables, and open grass area.
Total		**232 acres**	

Source: City of Menlo Park

Regional Parks and Preserves

In addition to the City's parks facilities, Menlo Park residents have access to a range of regional parks and open space, including the Don Edwards San Francisco Bay National Wildlife Refuge. Wunderlich County Park, Huddart County Park, and San Francisco Bay Trail also provide recreational opportunities for Menlo Park residents. Flood Park, a 26-acre facility owned by San Mateo County Parks Department, provides a place for picnicking and strolling. The City and the County have discussed transferring it to the City because of the County's budget deficit. However, there are no plans to move forward at this time. Furthermore, the residents of Menlo Park have access to the 373-acre Ravenswood Preserve located largely within Menlo Park and owned and managed by the Midpeninsula Regional Open Space District. The southern portion of the preserve offers pedestrian and bicycle access along the shore and levees along the marshland.

School Facilities

The City has joint use agreements with La Entrada, Oak Knoll, Belle Haven, Hillview, and Willow Oaks Schools for use of fields after school hours, as follows:

(1) **La Entrada:** soccer, basketball, baseball, and tennis courts; playground
(2) **Oak Knoll:** soccer, basketball and baseball
(3) **Belle Haven:** basketball and baseball

(4) **Hillview:** soccer, football, lacrosse, basketball court, track
(5) **Willow Oaks School:** baseball and soccer

Private Facilities
The Sharon Heights Golf and Country Club is located in the Sharon Heights neighborhood near Sand Hill Road and Interstate 280. A portion of the Stanford University Golf Course is located within the City of Menlo Park and its Sphere of Influence along Sand Hill Road and Alpine Road. In addition, a few private, fee-based facilities are available in Menlo Park, such as small yoga and dance studios.

C Historic Resources

The City of Menlo Park was originally the home of Ohlone Indians. The Ohlone lived off the land and due to the abundance of food they did not practice agriculture. Evidences of their civilization are still being unearthed on the Filoli estate in Woodside, and along San Francisquito Creek.

In 1769 Spanish rule was introduced to the area when the exploration party led by Don Gaspar de Portola camped near "El Palo Alto" after their momentous discovery of San Francisco Bay. The colonizing of the Peninsula began after the expedition of Juan Bautista DeAnza passed through Menlo Park on its way to establishing Mission Dolores and the Presidio of San Francisco in 1776. The mission padres, explorers, military personnel, travelers and settlers occupied certain areas, developing and populating the land.

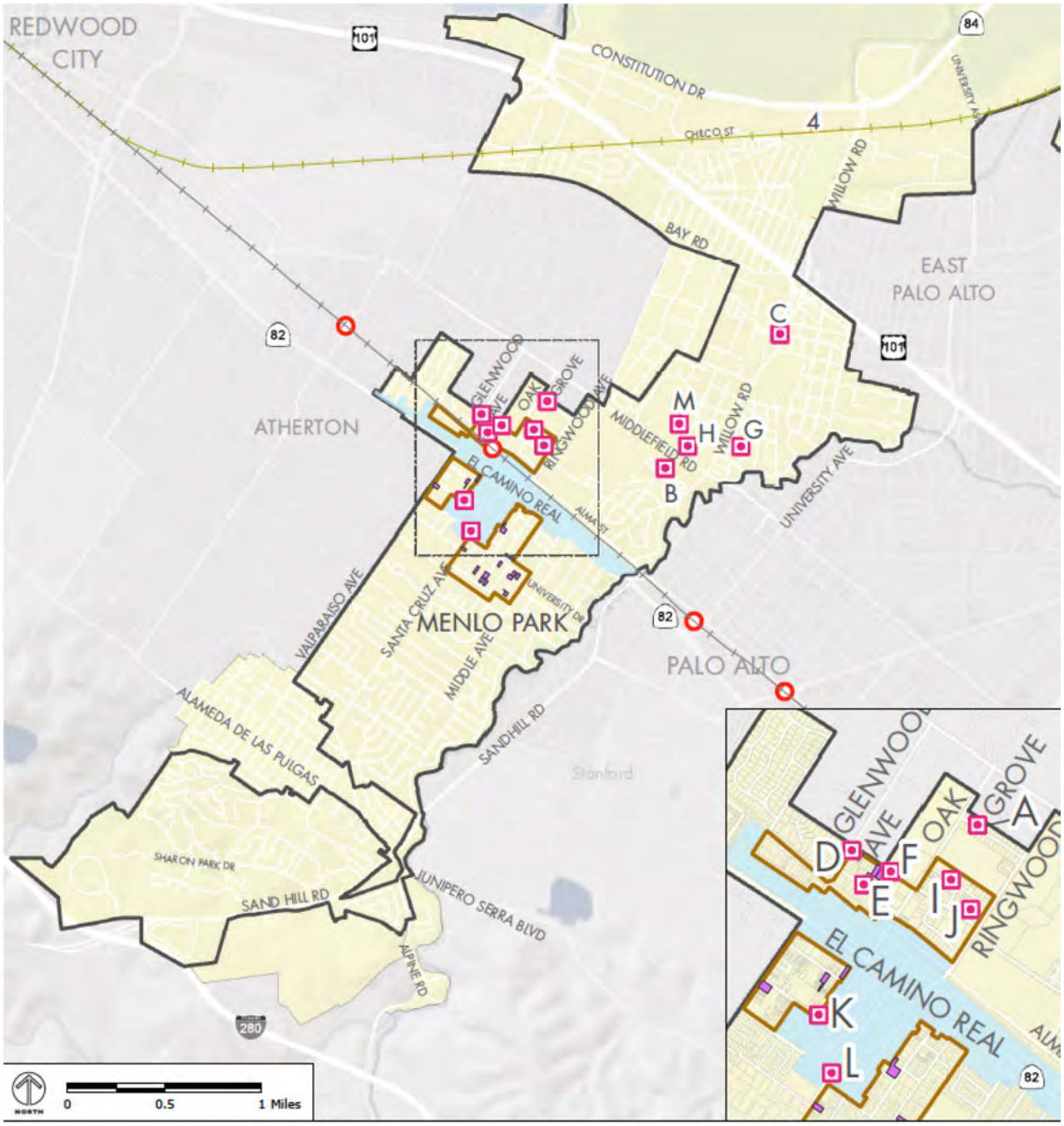
In 1854 Dennis J. Oliver and Daniel McGlynn purchased 1,700 acres from the Don Jose Dario Arguello family that had legally obtained the title to the land in 1853. Around this time Menlo Park received its official name when Oliver and McGlynn erected an arch with the words “Menlo Park” on it to honor their former home in Menlough, County Galway, Ireland. In 1863, the Southern Pacific Railroad was extended to the community of Menlo Park. During this same period, the downtown area of Menlo Park began to develop along Oak Grove Avenue between the railroad station and El Camino Real. By 1870, twelve buildings situated between the railroad station and El Camino Real in the vicinity of Oak Grove Avenue were constructed, consisting of two general stores, three hotels, livery stables, saloons, and three blacksmith shops. The first store in Menlo Park was on the corner of Oak Grove Avenue and El Camino Real.

On March 23, 1874, Menlo Park became the second incorporated city in San Mateo County, although only for a short time. The purpose was to provide a quick way to raise money for road repairs. This incorporation, including Fair Oaks (later Atherton) and

Ravenswood (later East Palo Alto), lasted only until 1876. Churches were founded, schools were opened and businesses were established. Menlo Park's population increased slowly until World War I. In 1917, 27,000 soldiers were stationed at Camp Fremont in Menlo Park. Menlo Park's first gas and water services, its first paved streets, and an increase in businesses were a direct result of the transient military population.

The original Dumbarton Bridge opened in 1927, connecting the South Bay and East Bay. In 1931, the Bayshore Highway (now Highway 101) linked Menlo Park and San Francisco. In 1940, Menlo Park's population was 3,258. World War II brought about many changes in the small town. Between 1943 and 1946 another military installation, Dibble General Hospital, was built on the old Timothy Hopkins estate to care for the thousands of soldiers injured in the South Pacific in World War II. Following World War II, in the 1950s, the hospital campus became the site of the Menlo Park Civic Center, Stanford Research Institute (today's SRI International), and the United States Geological Survey. Today Menlo Park is a suburban residential community with a variety of businesses, including high-tech industries.

The map on the next page identifies historic resources near the downtown. *Additional information on historic resources is available in the Environmental Assessment.*



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 200

Historic Resources

CalTrain Stations

Infill Areas around Downtown

El Camino Real/Downtown Specific Plan

City Limits

Sphere of Influence

Existing Historic Resources Near Downtown Menlo Park

D Air Quality and Greenhouse Gas Emissions

Menlo Park experiences a coastal Mediterranean climate, which consists of long dry, relatively cool summers and wet, mild winters. The City receives approximately 15.5 inches of rain annually, primarily experienced from the five-month stretch between November and April.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

Air Quality

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.

Ambient air quality standards (AAQS) have been adopted at State and Federal levels for criteria air pollutants. In addition, both the State and Federal government regulate the release of toxic air contaminants (TACs). Jurisdictions in the Bay Area are also subject to the regulations imposed by the Bay Area Air Quality Management District (BAAQMD), the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA).

Existing levels of ambient air quality and historical trends and projections in the vicinity of Menlo Park show occasional violations of both the State and Federal Ozone (O_3) standards and the Federal Fine Particulates ($PM_{2.5}$) standard. The State and Federal Course Particulates (PM_{10}), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), and Nitrogen Dioxide (NO_2) standards have not been exceeded in the last five years in the vicinity of Menlo Park.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools.

Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO2), methane (CH4), and ozone (O3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons. The major GHG are briefly described below.

(1) **Carbon dioxide (CO2**) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

(2) **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

(3) **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

(4) **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High global warming potential gases.

(5) **Chlorofluorocarbons (CFCs)** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

(6) **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

City Actions to Promote Sustainability

The City maintains several environmental programs under the City's Public Works Department. The City's environmental programs promote sustainable environmental practices and policies Citywide and within City-owned facilities and open space areas. The City has an approved Climate Action Plan (CAP) to reduce municipal and community GHG emissions. The most recent CAP is the City's 2011 CAP Assessment Report, which is described in more detail below.

The City's Public Works Department is also responsible for developing a more functional and efficient roadway network for the effective movement of people and goods. The division promotes the use of public transit, ride sharing, bicycles, and walking as commuting alternatives to single-occupant automobiles. The City operates a trip

reduction program and was the first City on the Peninsula to establish a shuttle program. The City also manages two Caltrain shuttle bus routes, the Willow and Marsh shuttles, which operate during the AM and PM peak hours taking passengers from Caltrain to their workplaces, schools, shopping, or appointments. In addition, the City manages a Midday shuttle service, a community service route open to the general public but focusing on the senior community. For residents who do not live within an easy walking distance of a SamTrans stop or the Midday shuttle service stop, Menlo Park offers a twice weekly shopper's shuttle service that picks up passengers at their homes and provides rides to specific shopping areas.

City of Menlo Park Climate Change Action Plan (CAP)

The City of Menlo Park has prepared and updated its community-wide GHG emissions inventory several times since the release of the City's 2005 Greenhouse Gas Emissions Analysis, which was prepared by the City with assistance from ICLEI in 2007. In 2009, the City prepared and approved the City's Climate Action Plan (CAP). The 2009 CAP included GHG emissions inventories and strategies to reduce GHG emissions within the City. The latest update to the City's CAP was conducted in 2011, Climate Action Plan Assessment Report. The 2011 CAP replaces the strategies identified within the 2009 Report. The 2011 Climate Action Plan Assessment Report recommends implementing the community GHG reduction strategies under the categories of energy efficiency, transportation, etc.

E Water Quality

The City is located within the 50-square mile San Francisquito Creek watershed, which includes portions of both Santa Clara County and San Mateo County. The uppermost elevations of the watershed are west of Highway 35 (locally known as Skyline Boulevard), and its lowest points are in East Palo Alto where San Francisquito Creek empties into the San Francisco Bay. The southernmost edge of the watershed is in the Los Trancos Regional Preserve near Palo Alto, and its northern most edge is Sweeny Ridge in the Golden Gate National Recreation Area.

Water flows west to east through natural creeks and streams and channelized waterways. In the undeveloped marshes, water flows through Flood Slough and Ravenswood Slough. In the urbanized portion of Menlo Park, the main creek system is San Francisquito Creek. In general, the creek flows in a northeasterly direction, flows through Menlo Park largely in its natural alignment, and it forms the southern boundary of the City limits. Riparian vegetation around the creek spans a 25- to 75-meter-wide

space, depending on adjacent land use and topography, consisting primarily of willow, bay laurels, redwoods, alders, cottonwoods, dogwoods, valley oaks, and coast live oaks.

Groundwater Aquifers

The City is situated above the Santa Clara Valley groundwater basin and San Mateo sub-basin. The San Mateo sub-basin is bounded by the Santa Cruz Mountains to the west, the Bay to the east, San Francisquito Creek to the south, and the Westside basin to the north. A relatively shallow water table aquifer overlies confined and semi-confined aquifers near the margins of the Bay, with most wells constructed to draw from the deeper portions. Recharge of the groundwater occurs through infiltration into streambeds and through percolation of rain on the valley floor. Well data from the California Department of Water Resources indicate that groundwater recharge in the City increases from the hilly west to the flatter eastern portions of the City, and decreases with increasing depth.

Water Quality

Menlo Park is within the San Francisquito Creek Watershed. More specifically, runoff from development within Menlo Park will eventually discharge to San Francisquito Creek, which ultimately discharges into South San Francisco Bay.

Beneficial Uses of Water Bodies in Menlo Park

The beneficial uses of the surface water bodies in Menlo Park have been designated in the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan). These potential and beneficial uses include:

Designated Beneficial Uses of Surface Water in Menlo Park

South San Francisco Bay: Commercial and sport fishing; Estuarine habitat; Industrial service supply; Fish migration; Navigation; Preservation of rare and endangered species; Water contact recreation; Non-contact water recreation; Shellfish harvesting; Fish spawning; and Wildlife habitat.

San Francisquito Creek: Cold freshwater habitat; Fish migration; Water contact recreation; Non-contact water recreation; Fish spawning; and Wildlife habitat.

Designated Beneficial Uses of Groundwater in Menlo Park

Santa Clara Valley (San Mateo Sub-Basin): Municipal and domestic water supply; Industrial process water supply; Industrial service water supply; and Agricultural water supply (potential).

Impaired Water Bodies in Menlo Park

In accordance with Section 303(d) of the Clean Water Act, the State must present USEPA with a list of impaired water bodies that do not meet water quality standards. Listed impaired water bodies within Menlo Park are shown in the table below.

List of Impaired Water Bodies in Menlo Park

Pollutant	Potential Source	Status of Total Maximum Daily Load (TDML)
San Francisquito Creek		
Diazinon	Urban runoff/storm sewers	Approved (2007)
Sedimentation/siltation	Nonpoint source	Planned (2013)
Trash	Illegal dumping; urban runoff/storm sewers	Planned (2021)
South San Franciso Bay		
Chlordane	Nonpoint source	Planned (2013)
DDT	Nonpoint source	Planned (2013)
Dieldrin	Nonpoint source	Planned (2013)
Dioxin compounds	Atmospheric deposition	Planned (2019)
Invasive species	Ballast water	Planned (2019)
Furan compounds	Atmospheric deposition	Planned (2019)
Mercury	Industrial and municipal point sources; resource extraction; atmospheric deposition; natural sources; nonpoint sources	Approved (2008)
PCBs	Unknown nonpoint sources	Approved (2010)
Selenium	Domestic use of groundwater	Planned (2019)

Source: State Water Resources Control Board. 2010 Integrated Report, Clean Water Act, Section 303(d) List, January 13, 2013; City of Menlo Park Housing Element Update, General Plan Consistency Update and Zoning Ordinance Amendments Environmental Assessment prepared April 2, 2013

Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a Total Maximum Daily Load (TMDL) to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. TMDLs have been approved by the U.S.

Environmental Protection Agency (EPA) for diazinon in San Francisquito Creek and mercury and PCBs in South San Francisco Bay.

The Basin Plan also contains water quality criteria for groundwater. Menlo Park is within the San Mateo Plain Sub-basin of the Santa Clara Valley Groundwater Basin. Groundwater in this sub-basin is generally characterized as calcium magnesium calcium carbonate water and the mineral content is very “hard,” averaging 471 mg/l of calcium carbonate. Some wells have reported concentrations of nitrate-nitrogen that exceed USEPA maximum contaminant levels (MCLs).

Groundwater contamination can result from releases of hazardous materials from underground storage tanks or historical industrial activities. There are about 20 Regional Water Quality Control Board (RWQCB) or Department of Toxic Substance Control (DTSC) hazardous waste cleanup sites within Menlo Park. If groundwater de-watering activities are required as part of the construction efforts, a more detailed assessment of the potential for contaminated groundwater to be present is warranted.

Section VI

Noise Background

A Background on Sound and Sound Measurement

The Noise Element is most closely associated with the Land Use and Circulation Elements of the Menlo Park General Plan. Specific concerns are addressed in this Element and in the Land Use and Circulation Element. Issues are: (1) establishment of noise compatible land uses; (2) regulation of new development to limit noise impacts on noise-sensitive uses; (3) minimization of traffic noise; (4) enforcement of noise standards to protect the existing quality of life; and (5) insulation of residences exposed to excessive levels of noise.

Characteristics of Sound

Noise is most often defined as unwanted sound. Whether a sound is unwanted depends on when and where it occurs, what the listener is doing when it occurs, characteristics of the sound (loudness, pitch and duration, speech or music content, irregularity) and how intrusive it is above background sound levels. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

Sound is the result of the vibration of an object, which is transmitted through the air in waves that in turn vibrate the eardrum. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time), and is measured in a logarithmic scale using units called decibels (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special A-weighted filter decibel measurement (dBA) is used to simulate human hearing.

Another measure of sound is called the Day-Night Weighted Average (Ldn), which is the average dBA sound level during a 24-hour day. Sound levels during the night are weighted over those during daylight hours, by adding 10 dB to actual sound levels during

the period from 10 p.m. to 7 a.m. to recognize the increased annoyance factor related to noise at night.

Noise Levels

The outdoor noise environment throughout the United States varies considerably. Outdoor Day-Night Average (Ldn) sound levels can be as low as 30 to 40 dBA (Ldn) in wilderness areas and as high as 85-90 dBA (Ldn) in noisy industrial urban areas. In Menlo Park, Ldn levels in residential areas are as low as 45 dBA (Ldn) in areas shielded from major roads and as high as 65-75 dBA (Ldn) along highways and major roads.

Typical Noise Levels

Common Outdoor Sound Levels	Noise Level Db (A)	Common Indoor Sound Levels
Commercial Airliner Takeoff at 1,000 feet	110	Rock Band
	100	Ambulance Siren at 100 feet
Gas Lawn Mower at 3 feet	90	Food Blender at 3 feet
Diesel Truck at 50 feet Noisy Urban Daytime	80	Garbage Disposal at 3 feet Shouting at 3 feet
	70	
Commercial Area	60	Vacuum Cleaner at 10 feet Normal Speech at 3 feet
Quiet Urban Daytime	50	Large Business Office Dishwasher Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	40	Small Theatre Large Conference Room
	30	
Quiet Rural Nighttime Rustling Leaves	20	Bedroom at Night Broadcast & Recording Studio
	10	Soft Whisper
	0	Threshold of Hearing

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary, depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions. The table below shows various construction equipment noise emission levels.

Construction Equipment Noise Emission Levels

Construction Equipment	Typical Noise Level (dBA) at 50 Feet	Construction Equipment	Typical Noise Level (dBA) at 50 Feet
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

Acceptable Noise Levels and Attitude Surveys About Noise

Acceptable levels of noise vary from land use to land use. Also, in any one location, the noise level will vary over time, from the lowest background or ambient levels to that of passing airplanes or construction equipment. Various techniques have been developed that measure the effects of noise levels over a period of time. It is difficult to specify noise levels that are generally acceptable to everyone. What is annoying to one person may be unnoticed by another. Standards may be based on documented complaint activity in response to noise levels, or based on studies on the ability of people to sleep, talk, or work under various noise conditions. All such studies, however, recognize that individual responses vary considerably. Standards usually address the needs of most of the general population.

Attitude surveys are used to measure annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it has been determined that the causes for annoyance include interference with hearing, radio and television reception, sleep and rest, and house vibrations. The Ldn as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed.

When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA Ldn. At an Ldn of about 60 dBA, approximately 2% of the population is highly annoyed. When the Ldn increases to 70 dBA, the percentage of the population highly annoyed increases to about 12% of the population. There is, therefore, an increase of about 1% per dBA from an Ldn of 60 to 70 dBA. From an Ldn of 70 to 80 dBA, each decibel increases by about 2% the percentage of people highly annoyed.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. The table below presents the subjective effect of changes in sound pressure levels.

Change in Apparent Loudness

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 2009.

Approximate Exterior-to-Interior Noise Reduction Achieved by Structures

Building Type	Window Condition	Exterior-to-Interior Noise Reduction	Maximum Exterior CNEL Value for 45 dB Interior CNEL Value
All	Open	10 dB	55 dB
Light Frame	Ordinary sash, closed	20 dB	65 dB
Masonry	Single pane, closed	25 dB	70 dB
Masonry	Sound-rated windows, closed	35 dB	80 dB

Source: Federal Highway Administration

Because community receptors are more sensitive to unwanted noise intrusion during the evening and nighttime hours, State law requires that, for planning purposes and to account for this increased receptiveness of noise, an artificial decibel increment is to be added to quiet-time noise levels to calculate a 24-hour CNEL (Community Noise Equivalent Level) noise metric. CNEL is the average sound level over a 24 hour period, with a penalty of 5 dB added for the evening hours from 7 p.m. to 10 p.m., and a penalty of 10 dB added for the nighttime hours of 10 p.m. to 7 a.m. CNEL It is very similar in nature (and in results) to the Ldn, but with the added penalty for the evening period.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system; prolonged noise exposure in excess of 75 dBA increases body tensions, thereby affecting blood pressure and functions of the heart and nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g. speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level (SPL) number means.

Noise Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration, including residential, school and open space/recreation areas where quiet environments are necessary for

enjoyment, public health, and safety. Sensitive land uses within Menlo Park include residences, schools, places of worship and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities that are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not considered noise sensitive uses and often themselves generate more noise than they receive from other uses.

B Noise Regulation

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

State of California Building Code

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, *Building Standards Administrative Code*, Part 2, *California Building Code*. These noise standards are applied to new construction in California for the purpose of interior noise compatibility from exterior noise sources. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit is 45 dBA CNEL.

State of California Land Use Compatibility Criteria

The table below is a land use compatibility chart for community noise adopted by the State of California as part of its General Plan Guidelines. It provides cities with a tool to gauge the compatibility of new land uses relative to existing and future noise levels by identifying normally acceptable, conditionally acceptable and clearly unacceptable noise levels for various land uses. A conditionally acceptable designation implies new development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements.

Menlo Park Municipal Code (Noise Ordinance)

Menlo Park addresses noise in various capacities under multiple chapters of its municipal code. Noise is primarily addressed in Chapter 8.06 (Noise); additional

chapters making brief mention of minor and/or incidental noise issues and regulations include Chapters 8.07 (Leaf Blowers), 8.12 (Business Operations after Midnight), 8.28 (Parks and Recreation), 9.26 (Poultry and Rabbits), 11.64 (Transportation Systems Management), and 13.18 (Use of Public Rights-of-Way).

Chapter 8.06 (Noise) contains the primary set of statutes through which Menlo Park regulates noise. For all noise measurements pursuant to the noise ordinance, the municipal code specifies standard procedures for conducting noise measurements, with specifications for sound-meter settings and placement. Section 8.06.030 sets maximum noise levels at any residential receiving property to a maximum of 60 dBA during the daytime hours between 7:00 a.m. to 10:00 p.m., and to 50 dBA during the nighttime hours between 10:00 p.m. and 7:00 a.m. The ordinance applies an additional 5 dBA penalty to sounds of a particularly annoying nature, such as tones, screeches, whines, and pulses, among others. The ordinance also includes a qualitative standard that prohibits noises that can be reasonably determined to be disturbing to an entire neighborhood or any considerable number of residents.

The Menlo Park noise ordinance also contains a number of qualified exceptions to the limitations stipulated in the ordinance; these include construction, powered equipment, and leaf blowers, deliveries, social gatherings, pavement sweeping, garbage collection, and animals. Additionally, the ordinance contains general exemptions for emergencies and emergency warning devices, sporting and City-permitted events, City and State projects, and the normal operation of typical motor vehicles. Of these, the most notable exceptions and exemptions for the purposes of this analysis include those for construction, motor vehicles, and deliveries.

Construction activities are exempted from the noise ordinance between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday; construction activities are only allowed on Saturday and Sunday between the hours of 9:00 a.m. and 5:00 p.m. and only if they are being personally undertaken by property owners performing maintenance or improvements. Despite these allowances for weekend residential maintenance, the ordinance still prohibits the use of any equipment that results in noise levels exceeding 85 dBA at a distance of 50 feet. Construction that is sufficiently quiet so as to be fully compliant with the basic exterior noise limitations set out by the ordinance is generally allowed at any time.

Notwithstanding specialized vehicle equipment or sound amplification systems, noise from the normal operation of motor vehicles (including cars, trucks, busses, trains, and airplanes) is exempted from the provisions of the noise ordinance. Noise from deliveries to food retailers and restaurants are generally excepted from the ordinance, while noise

from other commercial and industrial deliveries are generally excepted between 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. Saturday and Sunday. Temporally and geographically specific exceptions for street sweeping and garbage collection are also described in detail by the noise ordinance.

Other City Noise Standards

In addition to Chapter 8.06 (Noise), there are several other chapters in the Menlo Park municipal code that mention noise. In Chapter 8.07 (Leaf Blowers), the municipal code mentions that leaf blowers are a source of loud noise and stipulates that operators of these devices must wear ear protection. In Chapter 8.12 (Business Operations after Midnight), Section 8.12.040 indicates that a permit for late-night business operations may be revoked if noise from the establishment exceeds that foreseen by the permit. Chapter 8.28 (Parks and Recreation) prohibits the creation of obtrusive noise in parks. Section 9.26.080 of Chapter 9.26 (Poultry and Rabbits) prohibits the keeping of animals or fowl that cause unreasonable and disturbing noise for residents. In the goals of Chapter 11.64 (Transportation Systems Management), it is stated that noise reduction through decreased traffic is a goal of the chapter. Finally, in Chapter 13.18 (Use of Public Rights-of-Way), Section 13.18.110 (Regulations) stipulates that all regulations, including those related to noise, apply to the construction, operation, maintenance, and repair of facilities in the public rights-of-way.

C Existing and Future Noise Environment

Roadways

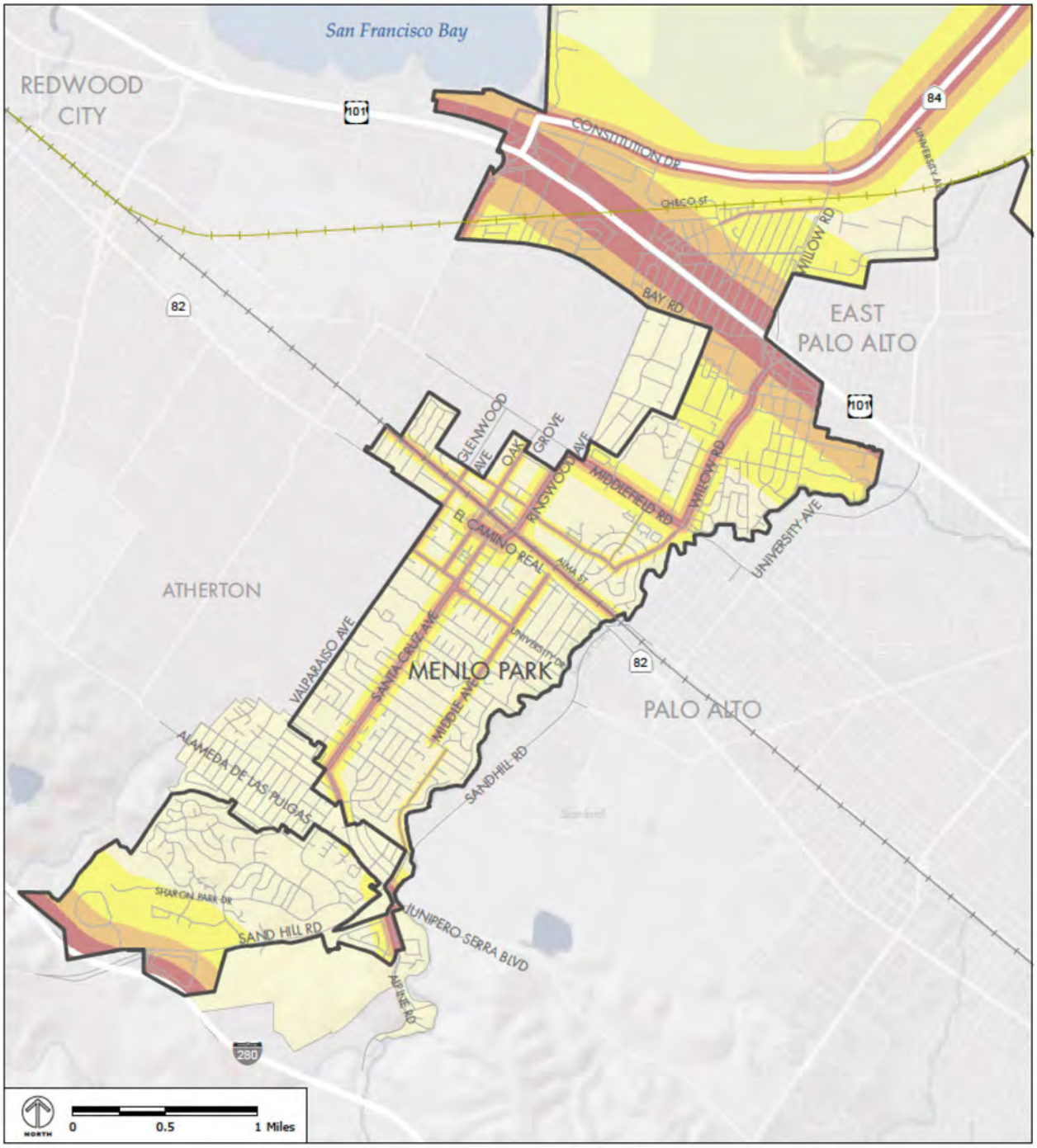
Freeways that run along the City's northeastern and southwestern boundaries are U.S. Highway 101 and Interstate 280, respectively; Highway 84, which becomes the Dumbarton bridge, also runs east to west across the northern end of the City. In addition to the previously mentioned highways, major roadways running northwest to southeast through Menlo Park include El Camino Real and Middlefield Road. Major northeast to southwest roadways include Willow Road, Ravenswood Avenue, Santa Cruz Avenue, and Sand Hill Road. Together, these highways and streets comprise the major roads in the City of Menlo Park. The table below shows existing and future roadway noise levels. Following the table is a map showing noise contours for the year 2035.

Existing and Future Noise Levels Along Major Streets in Menlo Park

CNEL at 100 Feet (dBA)

Roadway	Segment	Existing	2035	Increase
Haven Ave	City Limits-Bayfront Expwy/Marsh Rd	62.6	64.5	1.9
Marsh Rd	Bay Rd-Bohannon Dr/Florence St	70.4	72.6	2.2
Marsh Rd	Bohannon Dr/Florence St-Scott Dr	71.2	73.3	2.1
Hamilton Ave	Chilco St-Willow Rd	59.8	62	2.1
Willow Rd	Laurel St-Middlefield Rd	61.1	63.5	2.4
Willow Rd	Middlefield Rd-Gilbert Ave	68.2	70.6	2.4
Willow Rd	Gilbert Ave-Coleman Ave	68.2	70.6	2.4
Willow Rd	Coleman Ave-Durham St/Hospital Ave	68.5	70.8	2.3
Willow Rd	Durham St/Hospital Ave-Bay Rd	69.1	71.2	2.1
Middlefield Rd	Ravenswood Ave-Willow Rd	69.2	70.9	1.7
Laurel St	Glenwood Ave-Oak Grove Ave	59.9	61.6	1.7
Laurel St	Oak Grove Ave-Ravenswood Ave	60.4	61.4	1
Laurel St	Ravenswood Ave-Willow Rd	60.9	62.8	1.9
University Dr	Middle Ave-Menlo Ave	61.5	63.2	1.7
University Dr	Menlo Ave-Santa Cruz Ave	66.4	67.9	1.5
University Dr	Santa Cruz Ave-Oak Grove Ave	62.4	63.6	1.2
University Dr	Oak Grove Ave-Valparaiso Ave	61.3	62.6	1.3
Valparaiso Ave/Glenwood Ave	University Dr-El Camino Real	65.2	66.6	1.4
Valparaiso Ave/Glenwood Ave	El Camino Real-Laurel St	61.7	63	1.3
Oak Grove Ave	University Dr -El Camino Real	64	65	1.1
Oak Grove Ave	El Camino Real-Laurel St	63.8	65.2	1.4
Oak Grove Ave	Laurel St-Middlefield Rd	63.3	64.3	1
Ravenswood Ave	El Camino Real-Alma St	68.9	70.9	2
Ravenswood Ave	Alma St-Laurel St	67	68.8	1.8
Ravenswood Ave	Laurel St-Middlefield Rd	67.6	69.2	1.6
Santa Cruz Ave	Alameda de las Pulgas Ave/Orange Ave	64.7	66.3	1.6
Santa Cruz Ave	Avy Ave/Orange Ave-Olive St	67.1	68.8	1.7
Santa Cruz Ave	Olive St-University Dr	67.4	69	1.6
Santa Cruz Ave	University Dr-Crane St	63.5	65.3	1.8
Santa Cruz Ave	Crane St-El Camino Real	63.1	65.2	2.1
Middle Ave	Olive St-University Dr	63.6	65.1	1.5
Middle Ave	University Dr-El Camino Real	63.8	65.3	1.5
Alpine Rd/Santa Cruz Ave	Junipero Serra Blvd-City Limits	70.6	71.6	1
Alpine Rd/Santa Cruz Avenue	Sand Hill Rd-Junipero Serra Blvd	71.7	72.9	1.1
Linfield Drive	Middlefield Rd - Laurel St	55.9	57.2	1.3
Oak Avenue	Sand Hill Rd - Olive St	58	59.6	1.6
El Camino Real	Oak Grove - Ravenswood	71.2	72.9	1.7
US 101	N/O Marsh Rd	82.3	83.2	1
US 101	S/O Marsh Rd	81.8	82.9	1.1
US 101	S/O Willow Rd	82	83.2	1.2
US 101	S/O University	82	83.2	1.2
SR 84	Marsh Rd - Willow Rd	70.8	73	2.2
SR 84	Willow Rd - University Ave	73.4	75.2	1.8
SR 84	W/O University Ave	74.9	76.4	1.5
I-280	N/O Sand Hill	80	81.4	1.4
I-280	S/O Sand Hill	79.6	81	1.4

Source: Noise Study conducted for the Environmental Assessment (2013)



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

Dumbarton Rail Corridor

CalTrain ROW

City Limits

Sphere of Influence

60 dBA contour

65 dBA contour

70 dBA contour

2035 Noise Contours

Train Noise

One major and one minor rail line traverse Menlo Park. One rail line, which crosses the northern-most portion of the City from east to west, is a little-used segment of a former Union Pacific line, which once crossed San Francisco Bay. This railway currently consists of a single track and the rail bridge that served as the connection for this line that is no longer functional; however, this bridge is planned for reconstruction and future use as part of the Dumbarton Rail Project.

The second and more major rail line which crosses Menlo Park is the Caltrain right-of-way, which bisects a portion of Menlo Park along the City's short northwest-southeast axis. The Caltrain tracks run in the area between Camino Real and Alma Road, entering the City at Watkins Avenue and exiting to Palo Alto at San Francisquito Creek. Caltrain runs on a double track throughout its entire length through Menlo Park, and its right-of-way is owned and administered by the Peninsula Corridor Joint Powers Board. Menlo Park is served by one Caltrain station along this line, and though there are currently only 65 weekday daily stops at this station (either northbound or southbound), more than 90 trains pass either north or south through Menlo Park on a daily basis during the work week. The sheer number of passings by these diesel-powered commuter trains ensures that the activity along the Caltrain railway contributes significantly to the ambient noise environment of nearby areas of Menlo Park.

Heliports

There are no heliports within Menlo Park; however, Stanford University Hospital does operate one heliport, which is located approximately 0.4-mile to the southeast of the nearest border with Menlo Park.

Aircraft Noise

Menlo Park is located approximately 6 miles to the northwest of Moffet Federal Airfield, 14 miles to the northwest of the San Jose International Airport, 15 miles to the southeast of San Francisco International Airport, and 18 miles to the south of Oakland International Airport. Menlo Park is also located in close proximity to two smaller airports; with portions of Menlo Park as near as 2 miles from the Palo Alto Airport and other areas of Menlo Park as near as approximately 4 miles from the San Carlos Airport. Additional small airports in the vicinity include the Hayward Executive Airport, at 11 miles away, and the Half Moon Bay airport, at 16 miles away. Although Menlo Park does receive some noise from aircraft using these facilities, Menlo Park does not fall within the airport land use planning areas, runway protection zones, or the 55 dBA CNEL noise contours of any of these airports.

Stationary Source Noise

Stationary sources of noise may occur from all types of land uses. Menlo Park is mostly developed with residential, commercial and some light industrial uses. Commercial uses can generate noise from heating, ventilation, air conditioning (HVAC) systems, loading docks, trash compactors, and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and machinery required for manufacturing processes. Noise generated by commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis, or intermittently, depending on the processes and types of machinery involved.

In addition to on-site mechanical equipment, which generates stationary noise, warehousing and industrial land uses generate substantial truck traffic that results in additional sources of noise on local roadways in the vicinity of industrial operations.

The vast majority of Menlo Park's limited industrial operations are located in the far northern reaches of the city, and are usually separated from sensitive uses, such as residences, by either rail lines or by major roads. In both cases, this added distance serves to decrease the noise perceived by these receptors and, in the case of major roads, the noise from the roads was generally observed to exceed that from the industrial uses. Residential areas with the greatest potential to be impacted by noise from industrial operations include those along the previously mentioned Union Pacific rail right-of-way (Dumbarton Rail Corridor) and those along the northern end of Willow Road between Ivy Drive and the Bayfront Expressway.

Outdoor activities that occur on school campuses throughout Menlo Park also generate noticeable levels of noise in the vicinity of the campus. While it is preferable to have schools located within a residential setting to support the neighborhood, noise generated on both the weekdays (from physical education classes and sports programs) and weekends (from use of the fields and stadiums by youth organizations) can elevate community noise levels.

Section VII

Safety Background

A Geologic Hazards

Seismicity

Menlo Park, like much of the San Francisco Bay area, is vulnerable to seismic activity due to the presence of several active faults in the region. The closest and most prominent active fault near the City is the San Andreas Fault System, which is located about 2.5 miles west of Interstate 280 and the western boundary of the City. Other active earthquake faults in the region include the Monte Vista Fault, which lies roughly 3 miles to the south, the Hayward Fault, which lies roughly 13 miles to the east, and the Calaveras Fault, which is approximately 19 miles east of Menlo Park. There are no Alquist-Priolo Earthquake Fault Zones that have been mapped within Menlo Park and the potential for ground rupture is therefore considered low.

The April 1906 earthquake on the San Andreas Fault, estimated between magnitude (M) 7.7 and M 8.3, was the largest seismic event in recent history that affected Menlo Park. More recently, the M 6.9 Loma Prieta earthquake of October 1989 on the San Andreas Fault caused significant damage throughout the Bay Area, but no deaths were reported in San Mateo County.

The severity of ground shaking depends on several variables such as earthquake magnitude, hypocenter proximity, local geology including the properties of unconsolidated sediments, groundwater conditions, and topographic setting. In general, ground shaking hazards are most pronounced in areas that are underlain by loosely consolidated soil/sediment.

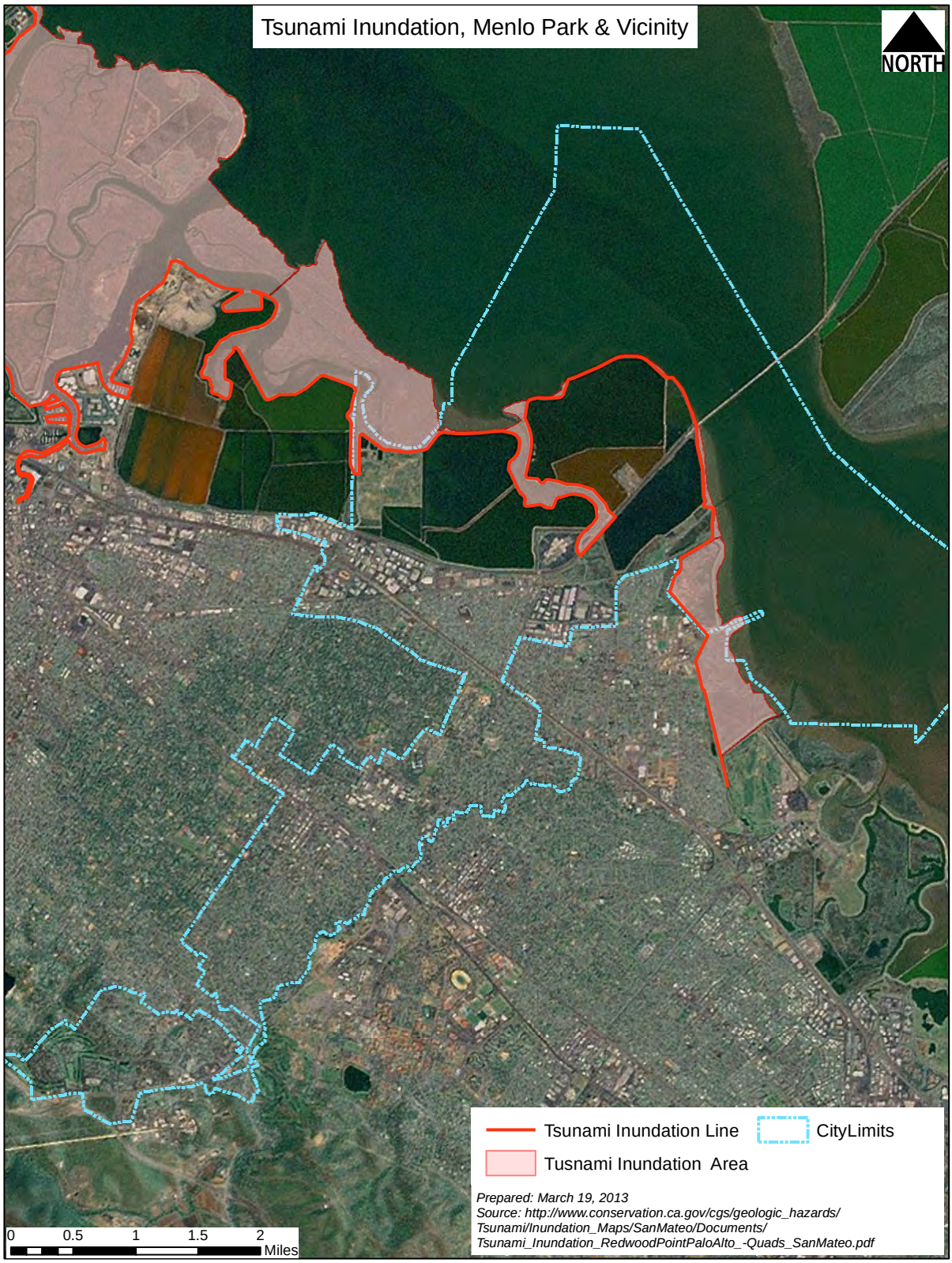
When earthquake faults within the Bay Area's nine-county area were considered, the USGS estimated that the probability of a magnitude 6.7 or greater earthquake prior to year 2032 is 62 percent, or roughly a two-thirds probability over this timeframe. Individually, the forecasted probability for each individual fault to produce an M 6.7 or greater seismic event by the year 2032 is as follows: 27 percent for the Hayward Fault,

21 percent for the San Andreas Fault, 11 percent for the Calaveras Fault, and ten percent for the San Gregorio Fault. Earthquakes of this magnitude can create ground accelerations severe enough to cause major damage to structures and foundations not designed to resist the forces generated by earthquakes. Underground utility lines are also susceptible where they lack sufficient flexibility to accommodate the seismic ground motion.

In the event of an earthquake of this magnitude, the seismic forecasts presented on the Association of Bay Area Governments' website (developed by a cooperative working group that included the USGS and the California Geological Society (CGS) suggest that most parts of Menlo Park southwest of Highway 101 are expected to experience "strong" shaking, and most areas east of Highway 101 are expected to experience "very strong" shaking, with areas located within 1 mile of the Dumbarton Bridge expected to experience "violent" shaking. Eastern parts of Menlo Park, particularly those areas underlain by Bay Muds, are judged to have a very high potential for seismically-induced liquefaction.

A tsunami is a large tidal wave generated by an earthquake, landslide, or volcanic eruption. Seiches are waves that oscillate in enclosed water bodies, such as reservoirs, lakes, ponds, or semi-enclosed bodies of water such as San Francisco Bay. Seiches may be triggered by moderate or large submarine earthquakes, or sometimes by large onshore earthquakes. The map on the next page shows that a very small portion of the Menlo Park planning area would be impacted by a seismically-induced sea wave (tsunami).

The performance of man-made structures during a major seismic event varies considerably due to a number of factors — location with respect to active fault traces or areas prone to liquefaction or seismically-induced landslides; the type of building construction (i.e. wood frame, unreinforced masonry, non-ductile concrete frame); the proximity, magnitude, and intensity of the seismic event itself; and many other factors. In general, evidence from past earthquakes shows that wood frame structures tend to perform well especially when their foundations are properly designed and anchored. Older, unreinforced masonry structures, on the other hand, do not perform as well, especially if they have not undergone appropriate seismic retrofitting. Applicable building code requirements, such as those found in the California Building Code (CBC), include seismic requirements that are designed to ensure the satisfactory performance of building materials under prescribed seismic conditions.


Tsunami Inundation, Menlo Park & Vicinity
NORTH
Tsunami Inundation Line
CityLimits
Tusnami Inundation Area
Prepared: March 19, 2013
Source: http://www.conservation.ca.gov/cgs/geologic_hazards/
Tsunami/Inundation_Maps/SanMateo/Documents/
Tsunami_Inundation_RedwoodPointPaloAlto_-Quads_SanMateo.pdf
0 0.5 1 1.5 2
Miles

Landslides, Erosion and Subsidence

Landslides are gravity-driven movements of earth materials that may include rock, soil, unconsolidated sediment, or combinations of such materials. The rate of landslide movement can vary considerably. Some move rapidly as in a soil or rock avalanche, while other landslides creep or move slowly for extended periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are well understood. The factors that influence the probability of a landslide and its relative level of risk include the following:

(1) **Slope Material:** Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils or hard bedrock.

(2) **Slope Steepness:** Most landslides occur on moderate to steep slopes.

(3) **Structure and Physical Properties of Materials:** This includes the orientation of layering and zones of weakness relative to slope direction.

(4) **Water Content:** Increased water content increases landslide hazard by decreasing friction and adding weight to the materials on a slope.

(5) **Vegetation Coverage:** Abundant vegetation with deep roots promote slope stability.

(6) **Proximity to Areas of Erosion or Man-made Cuts:** Undercutting slopes can greatly increase landslide potential.

(7) **Earthquake Ground Motions:** Strong seismic ground motions can trigger landslides in marginally stable slopes or loosen slope materials, and also increase the risk of future landslides.

Landslides have the potential to occur within Menlo Park, most notably on some of the hilly slopes that lie west of the street Alameda de las Pulgas. In general, landslides are commonly associated with bedrock outcrops of the Franciscan Formation, which frequently form steeper slopes. Shale is the most unstable of the rock types within the Franciscan Formation, whereas sandstone and conglomerate tend to be more stable with a lower landslide risk. Much of the upland areas in Menlo Park are typified by shallow soil that overlies Franciscan bedrock very close to the surface. Landslides are not an issue in parts of the City where the topography is flat.

Subsidence hazards are known to be present in the diked baylands due to the highly compressible nature of the underlying fill as well as historical groundwater overdraft. Areas susceptible to earthquake-induced subsidence include those areas underlain by thick layers of colluvial material or poorly engineered fill. This fill was reported to have

settled historically with hydro-compaction being an element of the settlement as well. Land subsidence occurred within the low-lying areas, mainly along the Bay margins.

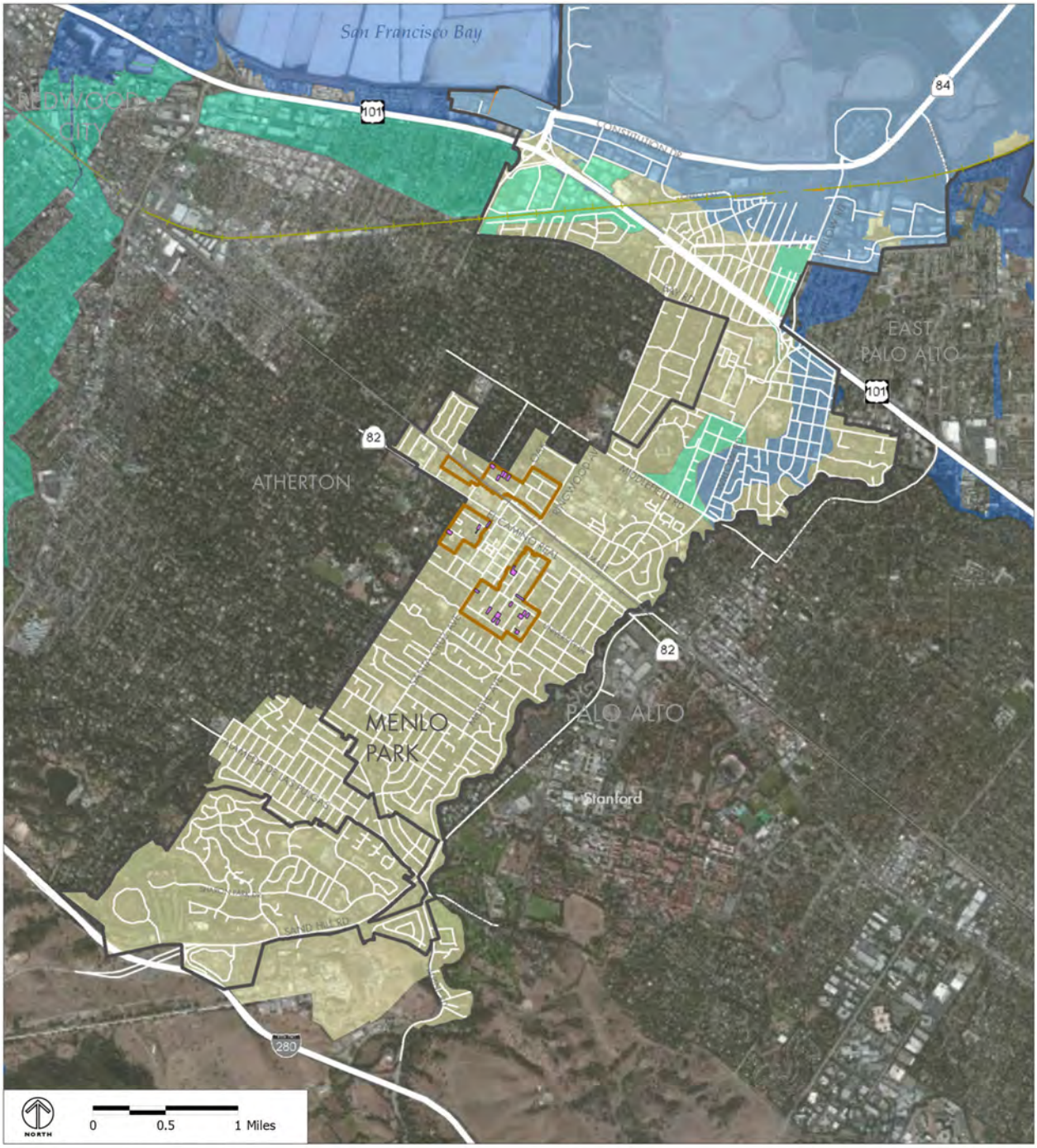
Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon can include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can exhibit wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils. Shrink-swell potential ranges from high along the marshlands of San Francisco Bay, to moderate in the center of the City, and to low in the western foothills.

B Hydrology (Flooding and Rise in Sea Level)

The Federal Emergency Management Agency (FEMA) prepares maps of the 100-year flood hazard area of U.S. communities. Areas within the 100-year flood hazard area are subject to 100-year flood, which means that in any given year, the risk of flooding in the designated area is 1 percent. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent.

In some locations, FEMA also provides a measurement of base flood elevation for the 100-year flood, which is the minimum height of the flood waters during a 100-year event; base flood elevation is reported in feet above sea level. Depth of flooding is determined by subtracting the land's height above sea level from the base flood elevation. Areas within the 100-year flood hazard area that are financed by Federally backed mortgages are subject to mandatory Federal insurance requirements and building standards to reduce flood damage.

The northernmost portion of Menlo Park, including much of the area between State Route 84 and Highway 101, is within the 100-year floodplain subject to tidal flooding from San Francisco Bay. In addition, portions of Menlo Park between Middlefield Road and Highway 101 are within the 100-year floodplain due to overflow from San Francisquito Creek. Several reservoirs in the area present the remote risk of downstream inundation in the event of a dam failure as the result of an earthquake or other catastrophic event. According to the ABAG online dam failure inundation maps, portions of Menlo Park are within the Searsville and Searsville/Felt dam inundation zones. Flooding and dam inundation areas are shown on the maps on the following two pages.

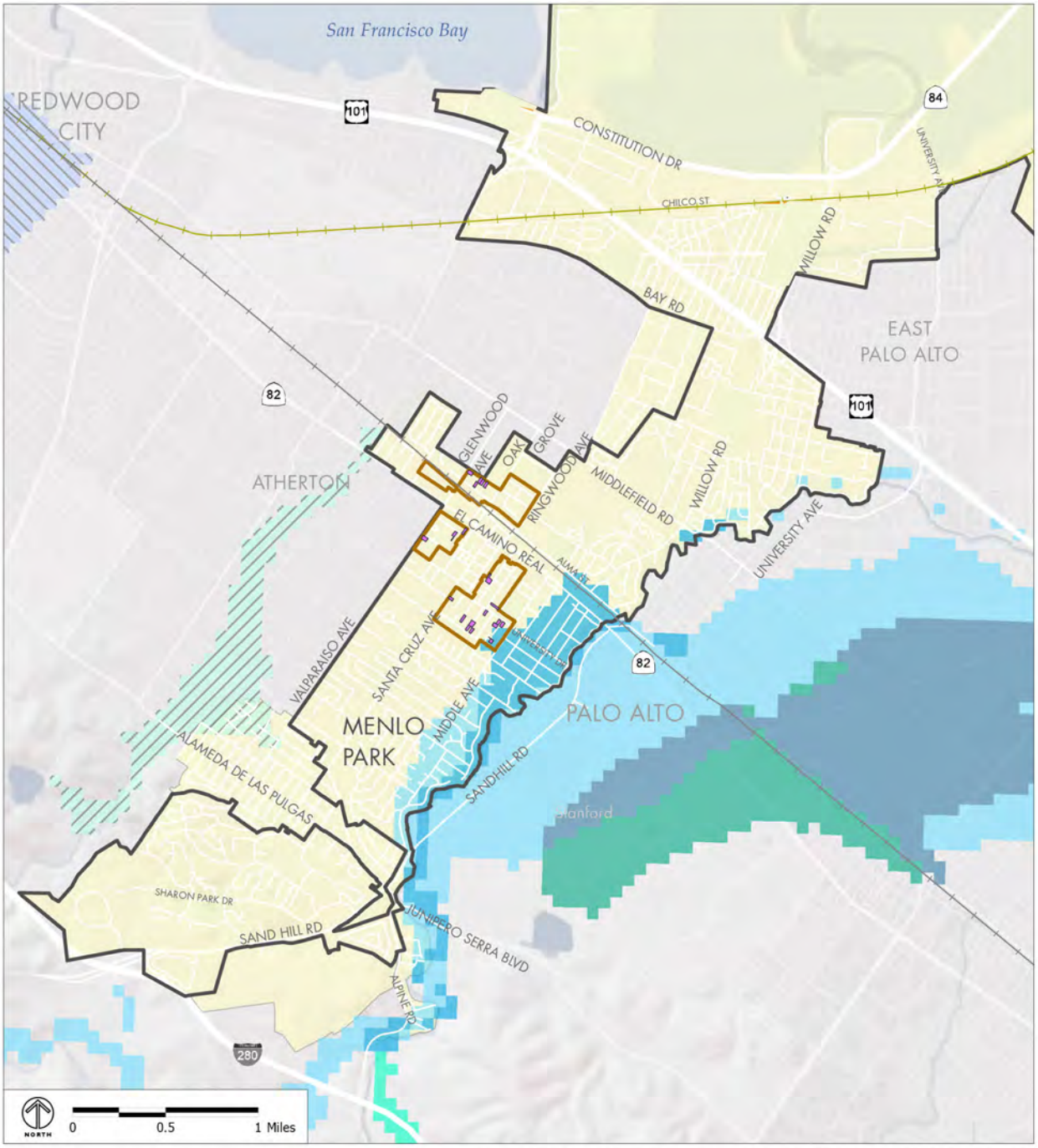


Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; ABAG 1995.

FEMA Special Flood Hazard Areas

- 100 Year Floodplain
- 500 Year Floodplain
- City Limits
- Sphere of Influence

FEMA Special Flood Hazard Areas



Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; ABAG 1995.

Dam Failure Inundation Areas

- BEAR GULCH
- FELT
- LAGUNITA
- LOWER EMERALD
- SEARSVILLE
- SEARSVILLE / FELT
- SEARSVILLE / LAGUNIT

- City Limits
- Sphere of Influence

Dam Failure Inundation Zones

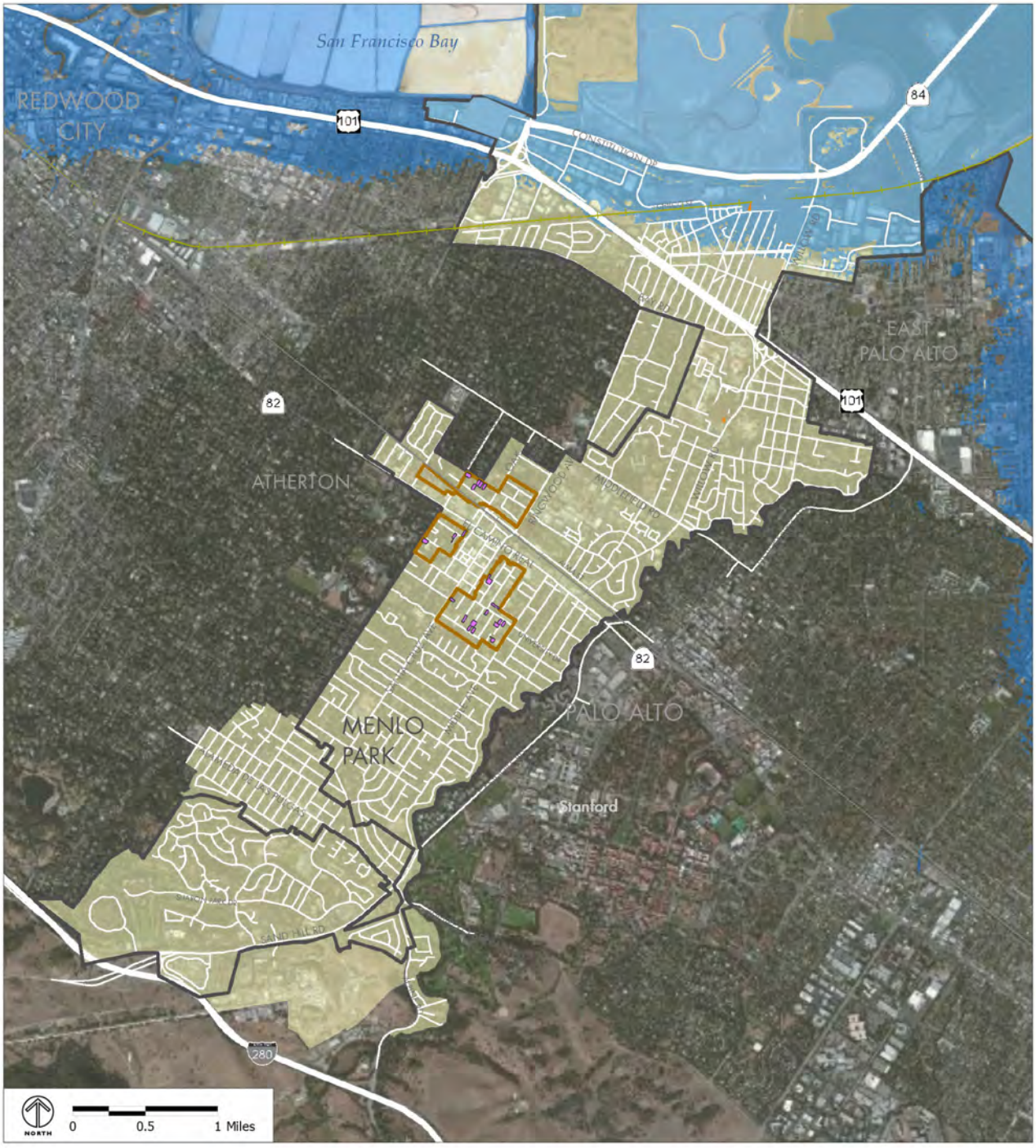
The San Francisquito Creek Joint Powers Authority (SFCJPA) in conjunction with the U.S. Army Corps of Engineers and the Santa Clara Valley Water District, are implementing improvements to provide 100-year flood protection for flood-prone reaches of San Francisquito Creek both upstream and downstream from Highway 101. The goal is to eliminate the need for more than 5,400 properties to contribute to the National Flood Insurance Program because of overflows from San Francisquito Creek and San Francisco Bay tides. The SFCJPA is also working with CalTrans to replace the Highway 101 crossing over the creek to improve traffic flow and also increase the creek's capacity to accommodate the 100-year storm event. The construction of this project is scheduled to begin in 2014.

Sea Level Rise

California Executive Order S-13-2008 states that all State agencies planning construction projects in areas vulnerable to sea level rise must consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and to the extent feasible, reduce expected risks to sea level rise. The Governor of California's Delta Vision Blue Ribbon Task Force adopted a sea level rise of 55 inches by 2100 for planning purposes. However, the San Francisco Bay Area Conservation and Development Commission (BCDC), in the latest amendment to the Bay Plan (October, 2011), added new climate change findings and policies and has revised the 2100 sea level rise from 55 inches to up to 69 inches. The BCDC has jurisdiction to regulate new development within 100 feet inland from the Bay shoreline. The existing BCDC policy is to require all projects within their jurisdiction to be built above the highest estimated tide and wave run up levels for the life of the project.

Different scenarios and models used to predict sea level rise result in different estimates in the magnitude of sea level rise. Most shoreline damage from flooding will occur as a result of storm activity in combination with higher sea levels. The key factors that contribute to coastal flooding include high tides, storm surge, high waves, and high runoff rates from rivers and creeks.

The Association of Bay Area Governments (ABAG) has produced a sea level rise scenario map for long range planning. The map on the following page shows the projected sea level rise for the City of Menlo Park. The impacted area extends just south of Ivy Drive.



Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; Knowles, Noah, USGS 2010.

Area Potentially Exposed to an Approximate 55-inch Sea Level Rise

City Limits

Sphere of Influence

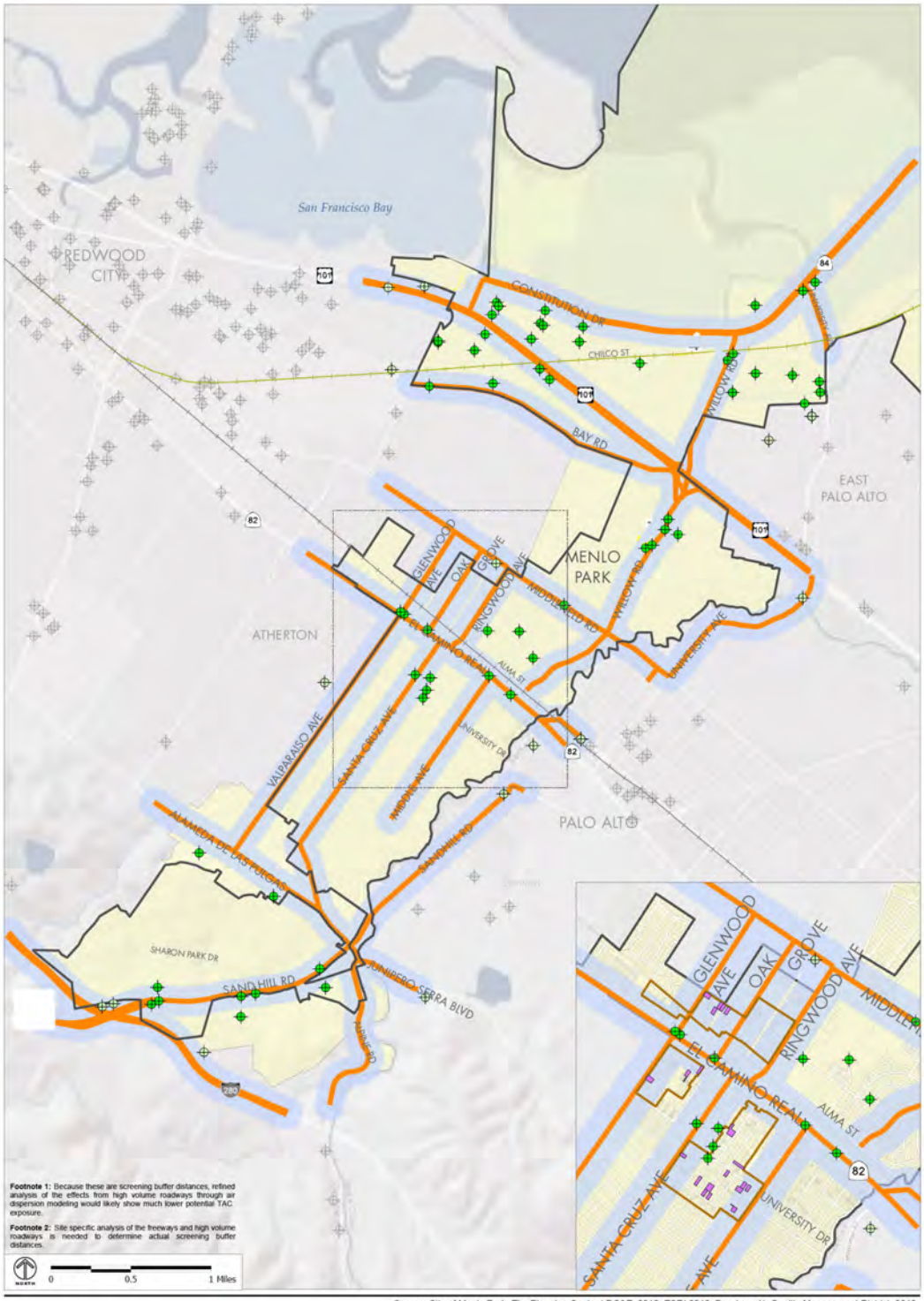
Sea Level Rise

C Hazardous Materials

The term “hazardous material” is defined in different ways for different regulatory programs. The California Health and Safety Code Section 25501 definition of a hazardous material is — “any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.”

Once a hazardous material is released, it moves from the source to a point of contact with the community or environment through an exposure pathway. To reach that point of contact, the exposure pathway must have: (1) a contamination source or point of release; (2) a transport mechanism from the source to the air, surface water, groundwater, or soil; (3) contact point where people are exposed to contaminated air, surface water, groundwater or soil; and (4) a route of entry into the body. Routes of entry include ingestion (eating or drinking), inhalation (breathing), and absorption (skin contact). If any of these requirements for an exposure pathway are not present, the pathway is incomplete and no exposure or risk is possible. In some cases, although a pathway is complete, the likelihood that exposure will occur is very small.

The California Department of Toxic Substances Control (DTSC) divides hazardous material sites into three categories: clean-up sites, permitted sites, and other sites. Sites listed within these three categories can be at various stages of evaluation or clean up, from the beginning to the end of the process. Maps on the next two pages show sources of toxic air contaminants and hazardous materials locations in Menlo Park where the DTSC has identified locations sites in Menlo Park that have been known or suspected to contain hazardous materials. The table following the hazardous materials map lists the sites along with their current status of evaluation or remediation.



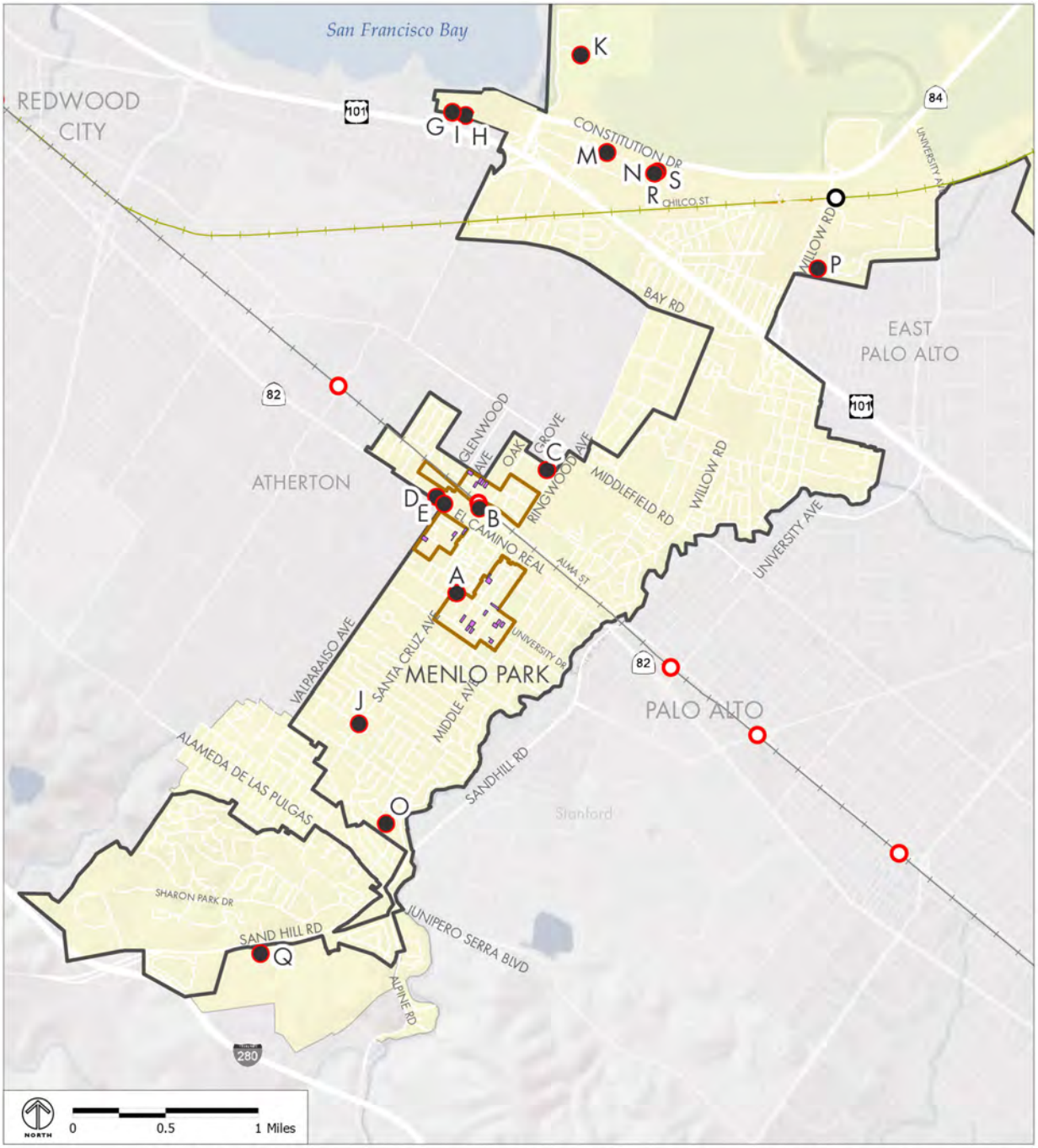
Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; Bay Area Air Quality Management District, 2012.

Stationary Air Emission Sources

- Contained by SOI
- Within 1000ft of SOI Boundary
- Beyond 1000ft of of SOI Boundary

- High Volume Roadways
- 500ft High Volume Roadway Screening Buffer
- City Limits
- Sphere of Influence
- Infill Areas around Downtown

Sources of Toxic Air Contaminants



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 2002; Department of Toxic Substances Control, EnviroStor.

Hazardous Materials Locations

CalTrain Stations

Dumbarton Rail Corridor

City Limits

Sphere of Influence

Hazardous Materials Locations

A total of 20 sites are listed under the Cleanup Sites category. Of these, approximately half are under Corrective Action, State Response, or Voluntary Cleanup. Voluntary cleanup is overseen by the Statewide Cleanup Operation Division. Of the remaining sites, three are under evaluation, and another three are under Tiered Permits. The list includes one inactive military site that is listed as needing evaluation. The list also includes two school sites, overseen by the Schools Division, listed as "certified" or "no action required." Finally, two sites are listed as non-operating. There are no listed Federal Superfund sites in Menlo Park. A single site is listed under the category of Permitted, non-operating sites.

Hazardous Materials Locations

Site	Site Name	Address	Type	Status
	No Name	1258 El Camino Real	Voluntary Cleanup	No Further Action
A	Camp Fremont	No Street Address	State Response	Inactive; Needs Evaluation
B	Derry Lane Mixed Use Development	Derry Lane	State Response	Inactive; Needs Evaluation
C	Dibble General Hospital/Stanford Research Institute	333 Ravenswood Avenue	Military Evaluation	Inactive; Needs Evaluation
D	Former Menlo Park Pet Hospital	1450 El Camino Real	Evaluation	Active
E	Former Atherton Village Cleaners	1438 El Camino Real	Evaluation	Active
F	Former Peninsula Sportsmen's Club	East of University Avenue	Voluntary Cleanup	Referred to SWRCB
G	General Circuits Inc.	3585 Haven Avenue	Corrective Action	Inactive; Needs Evaluation
H	General Circuits	3549 Haven Avenue	Corrective Action	RCRA
I	General Circuits Inc.	3549 Haven Avenue	Non-Operating	Referred to EPA
J	Hillview Middle School	1100 Elder Avenue	School Cleanup	Certified
K	Menlo Park Sanitation/Bedwell Bayfront Park	1700 Marsh Road Extension	Evaluation	No Further Action
L	Menlo Park West Campus	312-314 Construction Drive	Voluntary Cleanup	Active
M	Menlo Tech	188 Constitution Drive	Voluntary Cleanup	Inactive; Needs Evaluation
N	Menlo Tech, Inc.	188 Constitution Drive	Tiered Permit	Inactive; Needs Evaluation
O	Oak Knoll Elementary School	1895 Oak Knoll Lane	School Investigation	No Action Required
P	Sanford Metal Processing Company	980 O'Brien Drive	Tiered Permit	Refer; Other Agency
Q	Stanford Linear Accelerator CTR	2575 Sand Hill Road	Tiered Permit	Refer; Other Agency
R	Tyco Electronics Corporation	300 Constitution Drive	Corrective Action	Certified
S	Tyco Electronics Corporation	300 Constitution Drive	Non-Operating	None Listed

Note: The Beltramo Property at 1452 and 1460 El Camino Real is currently listed with the DTSC as being "Inactive; Needs Evaluation;" however, the City has identified that this site is currently undergoing corrective action to clean up the site and the site is being developed.
Source: Department of Toxic Substances Control, EnviroStor website at http://www.envirostor.dtsc.ca.gov, accessed February 5, 2013. City of Menlo Park Staff, February 05, 2013.

In addition, several Leaking Underground Fuel Tanks (LUFTs) are scattered throughout the city, concentrated along El Camino Real and in downtown Menlo Park. LUFTs are a common source of soil and groundwater contamination. A wide variety of industries have historically used underground storage tanks for gasoline, diesel, waste oils, solvents, and other chemicals. Prior to regulation in the 1980s, these underground tanks were typically not monitored or provided with secondary containment. If a tank leaked, the contents could migrate to the soil and groundwater.

Several locations that are listed under the Spills, Leaks, Investigation, and Cleanups (SLIC) Program — a program that investigates and regulates non-permitted discharges — also have been identified within Menlo Park. These are found mostly in the downtown area and the northeastern portion of the City.

D Fire Hazards

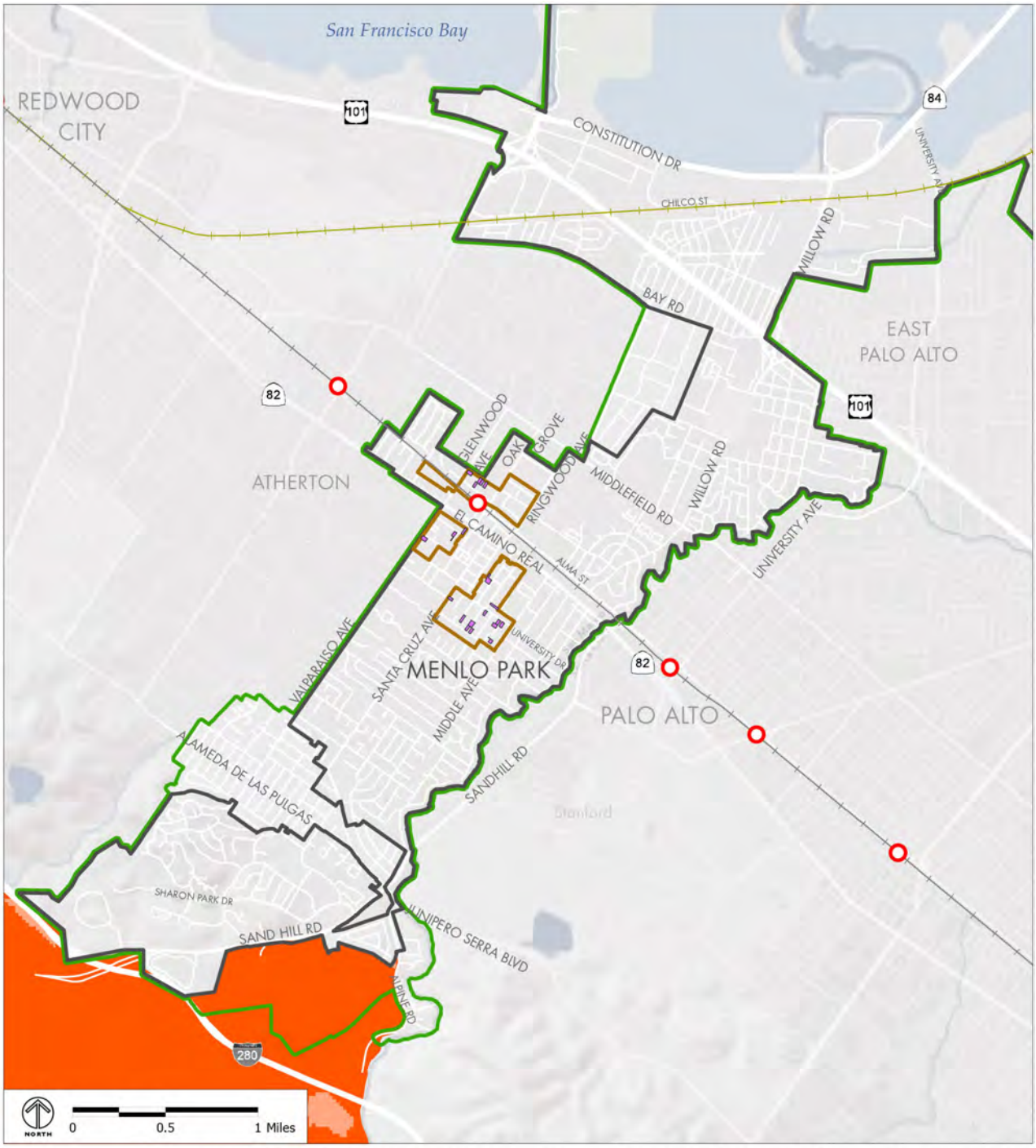
The severity of the wildfire hazard is determined by the relationship between three factors — (1) fuel classification, (2) topography, and (3) critical fire weather frequency. The California Department of Forestry and Fire Protection (CAL FIRE) defines Fire Hazard Severity Zones for areas within the state. A fire hazard is defined as a "measure of the likelihood of an area burning and how it burns," with a zone being an area characterized by a particular level of fire hazard. CAL FIRE Fire Hazard Severity Zone maps indicate areas for which the State of California has fiscal responsibility for wildland fire protection services as the State Responsibility Area, and areas for which local jurisdictions have fiscal responsibility as the Local Responsibility Area.

As shown on the map on the next page, areas in the western portion of Menlo Park contain areas of high Fire Hazard Severity and are designated as State Responsibility Areas.

E Emergency Preparedness

In September 2011 the City of Menlo Park adopted the Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation Plan — Taming Natural Disasters and an update to the City's Emergency Operation Plan (EOP). Both of these documents have been coordinated with the City's General Plan and the City's Capital Improvement Plan (CIP). The Hazard Mitigation Plan assesses a full range of natural disasters and the City's response through disaster planning. The City developed the EOP to better prepare for responses to emergency situations that could result from natural disasters and technological incidents. To better prepare for these emergencies, the City estimated the potential risks associated with earthquakes, flooding, wild-land fire, and other disasters. Based on this evaluation, various preparation strategies were developed. These strategies are addressed in Volume 2 of the EOP as follows:

(1) Chapter 1 introduces the City's Emergency Management System and four emergency management phases, as well as required activities and responsible parties for each phase;



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 2002; CA Department of Forestry and Fire Protection, 2007

Fire Hazard Severity Zones (State Responsibility Area)

- Moderate
- High
- Very High

- City Limits
- Sphere of Influence

Wildland Fire Hazards

(2) Chapter 2 describes regulatory frameworks and relevant legal authorities;

(3) Chapter 3 provides a threat assessment including estimated potential risks associated with various natural and man-made disasters; and,

(4) Chapter 4 provides a recovery plan, including damage assessments and disaster assistance programs.

The Police Department is the primary agency for establishing emergency evacuation routes. Evacuation routes are generally the City's major arterial streets. However, the appropriate evacuation routes depend upon the type of incident (whether it is a flood, fire, earthquake, etc.) and then which routes have the least hazards, traffic stress and the most residential accessibility. Neighborhood disaster programs provide information and help to coordinate resident and business responses during the first 72-hours of an emergency event.