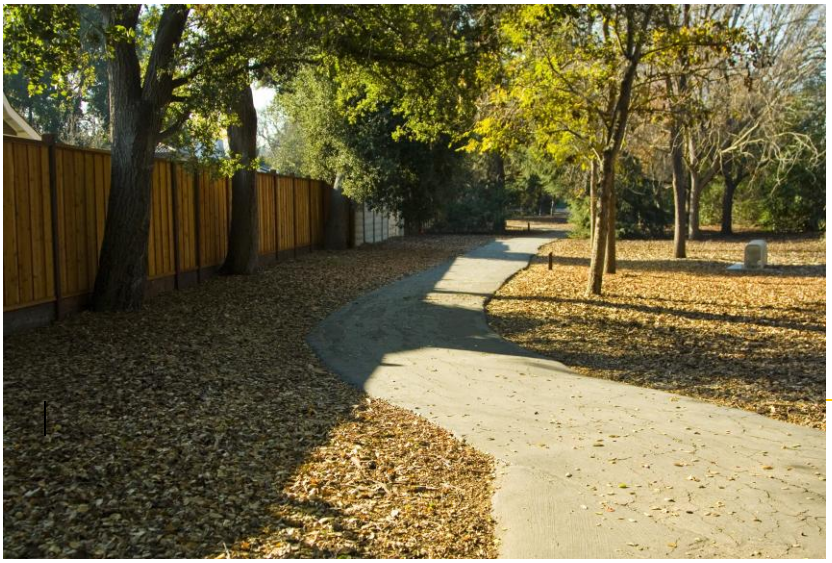
Town of Atherton General Plan ~~2019~~ 2025



TOWN OF ATHERTON
INCORPORATED SEPTEMBER 12, 1923
CALIFORNIA

COMMUNITY SAFETY ELEMENT

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COMMUNITY SAFETY ELEMENT

I. Purpose and Relation to Other Elements

The Safety Element is intended to describe natural and human-~~made~~ caused ~~disasters~~ hazards ~~which~~ that may pose a ~~hazard~~ threat to the residents of Atherton. It sets forth policies for addressing the risks posed by these hazards~~responding to threats~~ to public safety. It includes identification of ~~unreasonable~~ potential risks~~,~~ and policies for the protection of the community from such risks. The ~~goal~~ purpose of the S~~s~~afety E~~e~~lement is to reduce the potential short- and long-term risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, droughts, earthquakes, landslides, climate change, and other hazards.

The Safety Element is closely related to the Circulation, Land Use, and Open Space and Conservation Elements as proposed developments ~~plans~~ must adequately account for public safety considerations related to these topics. ~~, and open space for public health often incorporates area of increased hazard (for example, increase hazard associated with dam safety within the Bear Gulch Reservoir open space).~~

In addition to the other General Plan elements, the Town also relies on ~~their~~its Local Hazard Mitigation Plan (LHMP) to assist with addressing natural hazards. As a participant in the San Mateo County Multi-Jurisdictional Hazard Mitigation Plan, the Town adopted an Annex to this plan that covers the specific hazards relevant to Atherton. In compliance with California Government Code Section 8685.9 (also known as Assembly Bill 2140), the current LHMP has been incorporated into the Safety Element, ensuring the Town has access to additional funding opportunities under the California Disaster Assistance Act. The integration of the LHMP into the Safety Element allows Atherton to use the LHMP to satisfy State requirements and creates a stronger mechanism for implementing the LHMP. The LHMP is available online at https://www.smcgov.org/dem/multijurisdictional-local-hazard-mitigation-plan.

II. Background Information

The information contained in this element is supported by a Safety Element Background Report that includes additional detail regarding the issues identified in this element, which include discussions of the existing conditions, historical incidents, existing programs, and regulations affecting each hazard of concern~~,~~ and potential future conditions. This background report is available as Appendix A~~at https://prepsmc.com/wp-content/uploads/2025/05/Atherton-Background-Report_public-draft.pdf~~.

In addition, this section ~~also~~ includes discussions regarding how climate change may exacerbate hazards within the Town, based on the Town of Atherton Vulnerability Assessment. This information has been incorporated into hazard discussions as well as a new section pertaining to climate adaptation (for hazards not previously addressed in the element). The Vulnerability Assessment is available as Appendix B ~~at https://prepsmc.com/wp-content/uploads/2025/05/Atherton-Vulnerability-Assessment-report_public-draft.pdf~~.

Seismic Hazards

The primary seismic threat to the Town of Atherton is represented by the San Andreas fault zone, ~~and its attendant rift valley~~ which lies approximately five miles ~~to the~~ west of the Town. This fault has a long history of earthquake activity. While there are no known active or potentially active faults within ~~the Town of~~ Atherton, it is subject to periodic~~,~~ ~~very~~ strong earthquakes ~~which~~ that originate either on the San Andreas or from the Hayward and Calaveras Faults, approximately 13 miles and 19 miles away, respectively, in the East Bay. Most geologists agree that an earthquake of comparable magnitude to that which occurred in 1906 may well be experienced by the current generation of Bay Area residents.

Alquist-Priolo Earthquake Fault Zones

Alquist-Priolo Earthquake Fault Zones are regulatory zones, delineated by the State Geologist, within which site-specific geologic studies are required to identify and avoid fault rupture hazards prior to subdivision of land and/or construction of most structures for human occupancy. There are no Alquist-Priolo Earthquake Fault Zones within the Atherton Town ~~l~~Limits. The closest such zone is along~~,~~ the San Andreas Fault Zone, ~~is located~~ in Woodside, approximately one-half mile southwest of Interstate (I-) 280. Other such zones are ~~located~~ in the East Bay and include the Hayward Fault Zone and the Calaveras Fault Zone.

Seismic hazards associated with earthquakes include the following:

Surface Rupture

Seismically induced surface rupture refers to a break in the ground's surface and associated deformation resulting from the movement of a fault. Surface rupture is usually limited to a narrow zone along the fault.

Since there are no known active or potentially active faults within the Town of Atherton, it is unlikely that significant seismically induced surface rupturing will occur within the Town.

Ground Shaking

Seismically induced ground shaking poses a serious potential hazard to Atherton. In the future, the major source of earthquake damage is likely to ~~come from~~be the San Andreas Fault system, including the Hayward Fault and the Calaveras Fault branches in the East Bay ~~area~~. The principal effect of such an earthquake in most of the Town will be a sudden, unexpected initiation of a strong shaking motion of the ground, which could last approximately one minute or more. This ground shaking can be expected to be hazardous to people during an~~the~~ earthquake.

Ground Failure

Seismically induced ground failure refers to mudslides, landslides, liquefaction, or soil compaction caused by a seismic event. The California Department of Conservation has mapped areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation would be

required. Mitigation in this context means those measures that comply with the California Building Code, are consistent with established practice, and that will reduce seismic risk to acceptable levels.

Tsunami

A **tsunami** refers to a series of waves generated in a body of water by a rapid disturbance that vertically displaces the water. These changes can be caused by an underwater fault rupture that generates an earthquake, a volcanic eruption, or underwater landslides typically triggered by earthquakes. The California ~~Emergency Management Agency~~Office of Emergency Services has prepared a series of maps plotting the potential inundation line for a tsunami runup, or maximum height, along the San Francisco Bay shoreline. The inundation line represents the maximum ~~considered~~ potential tsunami runup from a number of extreme, yet realistic, tsunami sources. In the Atherton vicinity, the potential inundation line follows the southwesterly shoreline of the Westpoint Slough and the Ravenswood Slough located in the salt evaporators within the margins of San Francisco Bay. ~~A runup of approximately 4 feet at Ravenswood Point (East Palo Alto) could occur, as estimated by the US Geological Survey.~~ Potential inundation occurs adjacent to the Bayfront Expressway, which is approximately 0.75~~¾~~ to 1 mile from the Atherton town limits. ~~The inundation line runs approximately ½ to 1-mile northeast of the dike protecting the east Menlo Park and Redwood City industrial area. As the inundation line is located approximately 1 to 1 ½ miles northeast of the Atherton City Limit along Bay Road,~~Based on this, there is a very low probability of the Town being affected by a tsunami. ~~there appears to be little chance that a tsunami would affect land within the Town. Further since the inundation line is located approximately ½ to 1-mile northeast of~~However, a tsunami may inundate small portions of US 101 north and south of Atherton, and evacuation planners should take this potential flooding into consideration. ~~there appears to be little chance that a tsunami would affect that major evacuation route.~~

Seiche

Seismic **seiches** (sloshing) are standing waves that set up on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. A seiche can overflow or even erode an embankment, potentially releasing significant volumes of water that could flood and damage developed areas downstream. Bear Gulch Reservoir is the only body of water within Atherton large enough to be subject to a seiche. A potentially damaging seiche at this location could adversely impact properties and development downstream.

Dam Failure

Dam failure is often addressed as a flooding hazard for most communities;~~.~~ ~~H~~however, since the only dam in Atherton (~~The~~ Bear Gulch Reservoir Dam) is within the San Andreas Fault Zone, it is highly susceptible to seismic hazards. ~~is the only dam in Atherton and is large enough to endanger lives and property in the event of a failure.~~ A seismic event could cause the dam to fail and endanger an estimated population of approximately 1,000 people, according to the Atherton Emergency Operations Plan (2022), which is available on the Town's website. The flood-plain that would result from catastrophic failure of this dam has been mapped in Figure CS-1. ~~by California Water Service Company (Cal Water), the dam owner; the map is on file with the Office of Emergency Services.~~

The California Division of Safety of Dams (DSOD~~;), (~~a division of the Department of Water Resources [DWR]) routinely and periodically inspects the dam for performance and problem identification. Should a problem be identified that could lead to ~~failure potential~~potential failure, the dam owner (or as directed by the DSOD) takes mitigating actions such as reducing the water level to avoid catastrophic loss of water or other actions specified in its Emergency Action Plan.

~~The Atherton neighborhood most seriously threatened by dam failure and wildfire hazard is the Walsh Road neighborhood. This neighborhood has only one primary evacuation route; Walsh Road, which is a narrow, two lane residential street that intersects with Alameda de las Pulgas. Two other evacuation routes have been identified:~~

- ~~The main secondary automobile evacuation route is the road at the end of Reservoir Road through the Cal Water property adjacent to Bear Gulch Reservoir connecting to Moore Road. Cal Water must open the gate at the entrance of the road for this to be passable. Cal Water maintains a 24/7 presence at the Bear Gulch site. Calling 1-855-CAL-WATER, then selecting "1" for emergency will provide access to a Cal Water employee who will notify an on-site employee to unlock the gate.~~
- ~~There is a pedestrian only exit using the horse tunnel from Valley Court under highway 280.~~

~~In the event of a fire or flood, a warning siren has been installed at the Cal Water facility on Reservoir Road. The siren can be activated by the Fire or Police Department to advise residents that an evacuation should take place.~~

~~An all-volunteer group of concerned Atherton residents formed the Atherton Disaster and Preparedness Team (A.D.A.P.T.) to collaborate with town officials, Menlo Park Fire, Atherton Police and other professional emergency responders and the California State "Get Ready" and FEMA's/US Citizens' Corps programs to help organize, train, educate, communicate with and aid fellow Athertonians in preparing for major emergencies and natural disasters. A.D.A.P.T is sponsored by the Atherton Police Department and is linked to the Menlo Park Fire Protection District's Community Crisis Management (CCM)/Community Emergency Response Team (CERT) Program.~~

Slope Instability

Landslides include all movements of soil, rock, or debris as a result of falling, sliding, or flowing. Most landslides are a combination of two or more types of motion and/or material. Landslides are categorized according to the types of motion and material involved. They can be directly caused by earthquakes or be completely independent of them.

- Falls describe the sudden movement of material from vertical or near-vertical slopes and are generally labeled by the type of material displaced (e.g., soilfall, rockfall).

- Slides refer to movements in which the material moves more or less as a unit along recognizable shear surface. If the shear surface is concave, the slide movement will be rotational and is denoted by the term "slump." If the shear surface is planar, transnational movement occurs, and the term "slide" is used alone. Both slides and slumps are further classified according to the type of material

involved (e.g., earth slump, rockslide, debris slide where "debris" refers to combinations of soil, weathered bedrock, and/or organic material).

- Flows describe the movement of material in which a myriad of small-scale movements rather than massive sliding is the dominant mechanism of transport. This category is further broken down by the type of material involved and the rate at which it moves (e.g., debris flow, mudflow). ~~The modifier "avalanche" is used to describe exceptionally fast flows.~~

Much of the land surface in Atherton is relatively flat and not subject to slope instability. ~~Land~~The southern, more hilly neighborhoods of Atherton, as well as most of the land southwest of Alameda de Las Pulgas (including the land around Bear Gulch Reservoir) ~~west of Alameda de las Pulgas however,~~ is steeper and therefore subject to slope instability. Figure CS-2 identifies the areas susceptible to landslides within Atherton. ~~A map prepared by San Mateo County which shows the general location of existing landslides, characterizes the area west of Alameda de las Pulgas as having "few landslides". Another map produced by the Association of Bay Area Governments (ABAG) identifies "earthquake induced landslide study zones" and "rainfall induce study zones" each contain a few acres on the south side of Walsh Road and near Bear Gulch Reservoir.~~

Land Subsidence

Land subsidence is defined as the lowering of the land surface. Many different factors can cause the land surface to subside. Subsidence can occur rapidly due to a sinkhole or underground mine collapse, or during a major earthquake. It may happen slowly in the case of groundwater withdrawal or oil/natural gas extraction. In Atherton, the subsurface composition is such that sinkholes have rarely occurred. There are ~~there~~ no known mines or natural gas fields in Atherton. There has been groundwater withdrawal, however, the withdrawal has not resulted in significant land subsidence. A program to monitor surface elevation measurements ~~of landsurface elevations~~ and future subsidence is on-going and described in the Open Space and Conservation Element. While there could be seismically induced land subsidence in Town during a major earthquake, such an effect has not been known to have occurred in the past.

Liquefaction

Loose sand and silt that is saturated with water can behave like a liquid when shaken by an earthquake. This phenomenon is called **liquefaction**. During an earthquake the soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface, usually in uneven patterns that damage buildings, roads, and pipelines.

Figure CS-3 ~~A map produced by ABAG~~ identifies liquefaction susceptibility hazards in Atherton. In general, the area of Town northeast of a line formed by Euclid Avenue/Monte Vista Avenue/Camino por los Arboles is characterized as having a "moderate susceptibility." ~~.~~ The narrow band of land adjacent to the Atherton Channel is characterized ~~h~~as having a "very high susceptibility." ~~.~~ The balance of the Town is characterized as having a "very low to low susceptibility." ~~.~~

Climate Change Concerns

Landslides and Debris Flows: Climate change is expected to exacerbate landslide hazards by increasing frequency of wildfires and severe storms that can likely elevate the risk of landslides, particularly fast-moving debris flows. Areas most prone to this hazard in the Town include most of the land south of Alameda de Las Pulgas, including the land around Bear Gulch Reservoir. While this hazard already exists in the Town, staff and decision makers should begin monitoring changes in these areas, especially after major wildfire and storm events.

Emergent Groundwater: Emergent groundwater is a consequence of sea level rise. It occurs when groundwater is pushed upward by denser saline water that travels further inland, raising the water level and in some places causing the groundwater to emerge to the surface.~~,~~ Groundwater levels are expected to rise at the same rate as sea level rise in areas within half a mile from the shoreline. In the case of Atherton, the~~ir~~ distance from the shoreline as well as the~~ir~~ topographic relief ensures that emergent groundwater is not a significant concern for the Town.

Flooding

Flooding presents a significant hazard throughout California. While ~~over the Town's history~~ flooding has not historically presented a significant, extensive hazard, over the past 10 years, flooding associated with winter storms has impacted Atherton. ~~in Atherton in the past. There have been numerous recurring localized areas of flooding. During the 2001 Town-wide~~ Drainage Studies dating back to 2001~~y~~ have identified and evaluated~~,~~ ~~97~~ more than 90 localized flooding complaints ~~were identified and evaluated~~. These events were classified by type of problem such as building floods, saturated or clogged drywell, channel or ditch overflow, driveway and intersection floods, and storm system overflow or clog. Many of these problem areas were addressed with improvement projects implemented since 2001 or with maintenance activities.

~~In 2015 the~~ The 2015 Town-wide Drainage Study ~~was updated. During that process,~~identified 17 localized flooding complaints ~~were identified,~~~~;~~ three of which coincided with 2001 Drainage Study flooding complaints ~~from the 2001 Drainage Study~~. The report includes general and specific recommendations for mitigating these hazards. In addition to these recommended drainage projects, the Town actively collaborates with OneShoreline and neighboring jurisdictions to address flood hazards and supports mitigation projects that benefit downstream communities.

There are no Federal Emergency Management Agency (FEMA) identified flood prone or hazard areas in Atherton. The Town has chosen not to participate in the National Flood Insurance Program.

There are areas within the Town, due to their proximity to the Atherton Channel or in portions of ~~lowerlying~~lower~~-~~lying Lindenwood, which require raised finished floor elevations (typically by approximately 1 foot) during new construction. Finished floor elevations in these areas are recommended by the project engineer based on studies required by the Town during the grading and drainage plan review process.

Flooding resulting from the failure of the Bear Gulch Reservoir dam is also a concern for the Town, as discussed in greater detail in the Seismic Hazards section. Approximately 1,000 residents live downstream

of this facility in the potential inundation zone. For the inundation to occur as mapped, the reservoir at the dam would have to be at full capacity at the time of sudden release. ~~hazard that is addressed under the topic of Dam Failure in this Element.~~

To address flooding and sea level rise, San Mateo County created OneShoreline (the San Mateo County Flood and Sea Level Rise Resiliency District), which works across the various jurisdictions throughout the county. The mission of OneShoreline is to plan and build mitigation solutions in response to the impacts of sea level rise, flooding, and coastal erosion. Through this government agency, they are looking to enhance the environment, recreational opportunities, and quality of life within San Mateo County. Recently, Atherton ~~has entered into a partnership~~ partnered with ~~the jurisdictions of~~ Redwood City, Menlo Park, and San Mateo County (through OneShoreline) to complete the ~~planning for the proposed~~ **Bayfront Canal/Atherton Channel Flood Protection and Restoration Project**. This project reduces flooding that has historically occurred along the ~~e~~ Atherton Channel and Bayfront Canal ~~watersheds have experienced decades of repetitive flooding in the lower reaches of the channels in~~ in Redwood City. This project is further discussed in the Open Space and Conservation Element.

The proposed Atherton **Water Capture Project**, a runoff diversion, storage and filtration system is discussed in the Open Space and Conservation Element.

The use of green infrastructure design, techniques, and systems can help to reduce the impacts of localized flooding associated with stormwater runoff, the Atherton Channel, and Bayfront Canal while also assisting the Town in satisfying the provisions of the San Francisco Bay Regional Water Quality Control Board's Municipal Regional Permit (MRP).[i] [1]

Urban and Wildland Fires

Menlo Park Fire District

Fire protection for Atherton is provided by the Menlo Park Fire District (Fire District), ~~;~~ a special district that serves the cities of Menlo Park, Atherton, East Palo Alto, and portions of San Mateo County. Backup assistance for the Fire District is available through mutual aid agreements. All fire agencies in San Mateo County have signed the California Master Mutual Aid Agreement and participate in mutual aid operations as required. The ~~Menlo Park~~ Fire District also has specific ~~M~~mutual ~~A~~aid agreements with the cities of Palo Alto and Redwood City.

The Fire District actively works to prevent structural fires and wildfires through its regulations, education activities, and training programs, ~~;~~ some of which include residential and commercial fire sprinkler requirements, plan review of new construction, periodic inspection of commercial buildings, weed abatement, defensible spaces, home ignition zones, disaster and emergency preparedness. In addition to these priorities, the Fire District also works closely with the Town during the development review process to ensure adequate infrastructure is available to support new development. A key concern regarding fire response and suppression is the ability to meet peak ~~-~~load water supply requirements. For Atherton, average daily demand is approximately five million gallons per day during summer months. According to

[1] ~~Source: CD+A~~

the 2020 Urban Water Management Plan for Cal Water, water demand is expected to be met by available water supplies through 2045.

Wildland Fire

Wildland fire is a hazard that exists throughout ~~the~~ San Mateo County. ~~Town of Atherton.~~ The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire hazard severity zones throughout the state in both State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). For Atherton, CAL FIRE has not recognized any fire hazard severity zones within the Town; however, to the south of the Town, areas of the unincorporated county are mapped as moderate fire hazard severity zones. Although no areas of the Town have been mapped in a fire hazard severity zone, the risk associated with fire spreading from wildland areas along the Town's western boundary does exist. Areas of natural vegetation or landscaped areas that have not been cleared or thinned in conformance with brush clearance requirements pose the greatest threat to structures within Atherton. ~~threatened communities in the State. The entire Town of Atherton has been identified as a "Community At Risk".~~

~~**Wildfire hazard in the Walsh Road neighborhood is a topic that is addressed in the Dam Failure section of this Element.**~~

Wildfire Impacts on Flooding and Erosion

While wildfires may not ~~cause~~pose significant risks to Atherton, there are secondary impacts like contamination of reservoirs, destruction of infrastructure (pipelines, powerlines), and can contribute to flooding and erosion. Major landslides can occur several years after a wildfire. Most wildfires burn hot and for long durations that can bake soils, especially those high in clay content, thus increasing the imperviousness of the ground. This increases the runoff generated by storm events, thus increasing the chance of flooding.

Urban Fire

Structural fires occur in built-up environments, destroying buildings and other human-made structures. These disasters are often due to faulty wiring or mechanical equipment, or combustible construction materials. Structural fires are largely human caused, with arson as the cause of some events. Communities with older building stock may lack modern fire safety features;~~,~~ however, if remodeling of older structures occurs regularly, many of these buildings may meet current codes and standards. The Atherton Fire Code coupled with the policies in this element, set~~s~~ standards for building and construction and are used to manage urban fire risk. The greatest concern~~s~~ associated with urban fires in Atherton is the potential for ember cast generated from a wildfire miles away igniting a structure within the Town.

Climate Change Concerns

Climate change is expected to make wildfires worse throughout California by raising temperatures, increasing the frequency and severity of drought events that can dry out vegetation and make it more likely to burn, and increasing pest and disease activity that can kill vegetation that acts as fuel for fires. For

Atherton, areas along the wildland-urban interface (land south of Alameda de Las Pulgas and Bear Gulch Reservoir) have the greatest vulnerability to wildfire hazards due to proximity to wildfire-prone areas.

III. Emergency Management and Preparedness

Emergency Operations Plan

The Town of Atherton Police Department and the Menlo Park Fire Protection District have jointly prepared the Town of Atherton **Emergency Operations Plan** (EOP), which describes how the jurisdictions will manage and coordinate resources and personnel responding to emergency situations. The Atherton EOP, along with a companion document, the Town of Atherton's annex to the current Multi-Jurisdictional Local Hazard Mitigation Plan, ~~**Hazard Mitigation Strategies** (HMS)~~ provides the Town with compliance under ~~is the Town's Local Hazard Mitigation Plan specified in~~ the federal Disaster Mitigation Act of 2000 (P.L. 106-390). The plan ~~HMS~~ contains policies designed to mitigate hazards identified in the Community Safety Element and EOP.

~~The Atherton Town website currently has a section entitled "Evacuation Plan & Emergency Siren" that provides information about~~In the event of a fire or flood in the Walsh Road area, the Town can activate an emergency siren to help facilitate ~~and~~ evacuation of this area. ~~routes in the event of a fire or flood. The same website section provides general information about the **Atherton Disaster and Preparedness Team (A.D.A.P.T)** a Police Department sponsored emergency preparedness and action program as well as other preparedness resources for the community.~~

The Town of Atherton EOP is designed to be consistent with Homeland Security Presidential Directive (HSPD)-5, National Incident Management System (NIMS) and the California Standardized Emergency Management System (SEMS) requirements. The plan:

- Conforms to the National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS)
- Provides Emergency Operations Center (EOC) responders with procedures, documentation, and user-friendly checklists to effectively manage emergencies
- Provides detailed information of supplemental requirements such as Public Information, Damage Assessment, and Recovery Operations.

The Town of Atherton E~~mergency~~ O~~perations~~ P~~lan~~ is a document that is continually evolving. The EOP provides a comprehensive emergency response document that includes detailed information covering Emergency Operations Center procedures, documentation and reference and support information. Pursuant to California Government Code Section 65302.6, the Atherton Emergency Operations Plan together with the Atherton Hazard Mitigation Strategies (HMS) are hereby adopted by reference and included in this Community Safety Element. Further, any future amendments to the EOP and HMS are adopted by reference and included in this Element.

Emergency Alerts

SMC Alert is the primary alerting system available to the Town of Atherton. Through this platform, Atherton, working closely with San Mateo County, can issue alerts regarding a variety of incident types (flood, fire, severe weather), as well as notify the community about critical information (shelters, evacuation routes) during an emergency. SMC Alert is also used for larger regional emergency notifications.

The Town also relies on the Atherton Newsflash Alert System, where community members opt ~~in~~ to receive SMC Alert messages and can receive alerts via email, cell phones, and voice messages to landline phones. Alerts are available in a wide variety of languages spoken in San Mateo County. More information on SMC Alert is available on San Mateo County's website: ~~sign up at~~ https://www.smcgov.org/dem/smc-alert.

Evacuation

Emergency evacuation routes are shown on the Community Safety Diagram, Figure CS-~~4~~3. These routes are generally ~~located~~ along minor arterials that provide access from all Atherton neighborhoods to El Camino Real, and~~,~~ ultimately U.S. 101 and I-280. The streets included are El Camino Real, Middlefield Road, Marsh Road, Alameda de las Pulgas, Atherton Avenue/Fair Oaks Lane, Valparaiso Avenue, Stockbridge Avenue, Glenwood Avenue, Encinal Avenue, Watkins Avenue, and Ringwood Avenue. These routes would be used for general emergencies (e.g., earthquake, wildfire) and dam failure at Bear Gulch Reservoir.

There are some major routes in Town that could be designated as these evacuation routes, including Alameda de las Pulgas, Middlefield Road, Bay Road, and State Route (SR-) 82 as the major east/west routes, while Atherton Avenue, Valparaiso Avenue, Selby Lane, and Stockbridge Avenue are major north/south routes that intersect with SR-82. The Town is also located near SR-84, and in between the major highways of I-280 and U.S. 101.

The area of greatest concern regarding evacuation is the Walsh Road neighborhood. This neighborhood has only one primary evacuation route, Walsh Road, which is a narrow, two-lane residential street that intersects with Alameda de las Pulgas. Two secondary evacuation routes out of this neighborhood have also been identified:

- The main secondary automobile evacuation route is the road at the end of Reservoir Road through the Cal Water property adjacent to Bear Gulch Reservoir connecting to Moore Road. This is a roadway with gate-controlled access that requires Cal Water staff to open it.
- There is a pedestrian-only exit using the horse tunnel from Valley Court under I-280.

In the event of a fire or flood, a warning siren has been installed at the Cal Water facility on Reservoir Road. The siren can be activated by the Fire District or Police Department to advise residents that an evacuation should take place.

Atherton and other San Mateo County public safety agencies participate in Genasys (formerly known as Zonehaven) to communicate areas that are being evacuated due to fire or other emergencies. Genasys isn't an alert and warning system but acts as a source of additional information that can help provide direction in times of emergency. The program is available for desktop or mobile app (https://protect.genasys.com/).

Atherton Disaster and Preparedness Team

Atherton Disaster and Preparedness Team (A.D.A.P.T.) is a volunteer group of residents formed to collaborate with Town officials, Menlo Park Fire, Atherton Police, other professional emergency responders, Sstate, and federal emergency preparedness programs to help organize, train, educate, communicate with, and aid residents in preparing for major emergencies and natural disasters. -A.D.A.P.T is sponsored by the Atherton Police Department and is linked to the Menlo Park Fire Protection District's Community Crisis Management (CCM)/Community Emergency Response Team (CERT) Program.

~~The Town also participates with a coalition of San Mateo County cities and special districts in updating and adopting the San Mateo County Hazard Mitigation Plan.[2] This plan includes an assessment of the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising the strategy.~~

~~III.~~IV. Climate Change and Climate Adaptation

Atherton's proposals and policies related to climate change are contained in its adopted[3] **Climate Action Plan** (CAP) that was updated in 2023.[ii] The Town's C~~limate Action Plan~~AP serves as a guiding document to identify methods that the Town ~~and community~~ can implement to significantly reduce greenhouse gas (GHG) emissions. The ~~Plan~~ CAP provides a comprehensive roadmap of programs that can be implemented to reduce emissions and increase sustainability. Transportation aspects of the C~~limate Action Plan~~AP are addressed in the Circulation Element. -Energy, water and solid waste programs and policies are addressed in the Open Space and Conservation Element.

Atherton has adopted a target of reducing GHG emissions to 15 percent below 2005 levels by 2020.

In addition to the ~~Climate Action Plan~~CAP, the Town also developed a Climate Adaptation Vulnerability Assessment in 2025 that summarizes climate--related hazards and their effects on populations and assets ~~with~~in the community. The assessment identifies key climate-related hazards (summarized above and below), as well as priority vulnerabilities. Priority vulnerabilities include people, buildings, infrastructure, economic drivers, ecosystems and natural resources, and key services that should be considered as the Town's priorities in adaptation and resilience planning. Based on the analysis provided in the assessment, eight climate hazards are of concern to Atherton, which can impact people and assets to some degree.

In addition to the discussions provided above, the following hazards are anticipated to occur or become exacerbated by climate change:

Air Quality and Smoke: Climate change directly impacts and exacerbates air quality through increased temperatures, severe weather, wildfires, changes in precipitation patterns, and other mechanisms. When air quality is poor, Atherton community members' health and quality of life ~~is~~are affected. Poor air quality can be particularly severe for children, older adults, and individuals with pre-existing respiratory or

~~[2] Adopted October 19, 2016~~

~~[3] Atherton Climate Action Plan Update. https://climateaction.ci.atherton.ca.us/climate-action-plan Adopted October 19, 2016~~

cardiovascular conditions. While everyday air quality in Atherton is generally good, during extreme events (heat waves, severe wind events, wildfire within the region), air quality can deteriorate rapidly and become very unhealthy. During the wildfires that occurred through the Bay Area in 2020, air quality levels were considered "very unhealthy" due to smoke and particulate matter released from the fires. In addition, it is expected that the increased frequency and intensity of wildfires in northern California will continue to exacerbate these hazards.

Drought: A drought is when conditions are drier than normal for an extended period, making less water available for people and ecosystems. While droughts occur regularly in California, it is projected that climate change will likely increase the frequency and severity of droughts. When droughts occur, they can cause soil to dry out and become hard, reducing the soil's ability to absorb moisture and retain water. When rainfall does return, more water runs off the surface than is absorbed into the ground, which can increase flooding downstream. While local drought conditions can be harmful in the Town, ~~more important~~of greater conern for Atherton's water supplies are drought conditions in the Sierra Nevada. The Sierra Nevada snowpack ~~is~~ is the primary water source for the Hetch Hetchy system that supplies the Town with water. A decline of up to 60 percent of this water source is projected by Cal Adapt (California's climate change data and visualization platform that provides localized data from global climate models) in the second half of the century, which would significantly impact the Town's water supply. While the physical effects of a drought are not anticipated to affect Atherton's residents and infrastructure, there may be secondary effects like increases in water rates, reduction of water consumption, and identification of new water sources. These types of impacts may have a negative economic impact (increasing the cost of living) and negatively affect the aesthetics of the community (affecting landscaping and recreational spaces).

Extreme Heat and Warm Nights: Extreme heat is one of the deadliest climate-related hazards nationwide. Extreme heat days are becoming more frequent and intense due to climate change.~~,~~ They pose significant health risks, can result in loss of power and high energy bills, and can ~~help~~contribute to the increased ~~the~~ risk of wildfires. For Atherton, an extreme heat day occurs when the temperature exceeds 95.2 degrees Fahrenheit. For Atherton, extreme heat days are projected to increase from 5 to 13 by mid-century (2050) and then to 23 by end of the century (2100). This trend suggests that by the end of the century, the Town could experience a nearly five-fold increase in the number of days that exceed 100 degrees Fahrenheit. In addition, warm nighttime temperatures can compound the effects of extreme heat days, as populations impacted do not get relief from increased temperatures overnight. These conditions can stress individuals (especially those that have heat-related illnesses), as well as infrastructure ~~like~~ such as electrical systems that are relied upon by residents to power air conditioners and other vital equipment.

Human Health Hazards: Rising temperatures and changing precipitation patterns due to climate change promote the proliferation of disease-carrying vectors ~~like~~such as rats, mice, ticks, and mosquitos. As conditions get warmer and wetter, ~~part~~parts of the Bay Area may experience increased populations of mosquitoes and ticks. These insects may extend their geographic range due to more favorable conditions, and spread diseases like West Nile virus, dengue fever, and Lyme disease. Heatwaves can also increase heat-related illnesses and deaths and potentially worsen respiratory conditions due to increased air pollution. Ultimately, the combination of these types of hazards could strain not only individuals but health care systems and burden local economies. Direct human health impacts from extreme heat events often result in heat-related illnesses and deaths, while also worsening respiratory conditions due to increased air pollution (either from the heat event or smoke and ash from wildfires that often occur during these events).

Severe Weather: Severe weather, such as high winds and thunderstorms, poses a threat to Atherton. The most common severe weather events that have historically impacted Atherton are heavy rains (usually a result of atmospheric rivers), thunderstorms, and windstorms. While Atherton may experience a small increase in average rainfall, heavy rain events may increase in intensity because of climate change, which could impact drainages and infrastructure. The types of dangers posed by severe weather include injuries or deaths, damage to buildings and structures, fallen trees and roads blocked by debris, and fires sparked by lightning. Severe weather often produces high winds and lightning that can damage structures and cause power outages. There is also always the possibility of unscheduled power outages ~~from~~caused by severe weather. Loss of power, for any reason, can disrupt communication networks in the Town, harm people dependent on medical devices, and result in economic losses (due to closure or loss of goods and materials). While severe weather impacts are uncertain, the effects of these events are well known and understood, which can help Atherton residents, businesses, and staff prepare for future events.

All ~~eight~~the climate hazards are of concern to Atherton, although severe weather creates the most priority vulnerabilities, followed by wildfire and extreme heat.

~~Evacuation Routes and Peak Load Water Supply Requirements~~

~~Pursuant to the State Planning Guidelines, evacuation routes have been designated in the Policies below. State Planning Guidelines require the Safety Element to include a statement specifying the peak load water supply requirements of the Town. Peak load water supply requirements currently average just under five million gallons per day during the months of August and September.~~

~~Emergency evacuation routes are shown on the Community Safety Diagram, Figure CS-1. These routes are generally located along minor arterials that provide access from all Atherton neighborhoods to El Camino Real, and, ultimately U. S. 101 and I-280. The streets included are El Camino Real, Middlefield Road, Marsh Road, Alameda de las Pulgas, Atherton Avenue/Fair Oaks Lane, Valparaiso Avenue, Stockbridge Avenue, Glenwood Avenue, Encinal Avenue, Watkins Avenue and Ringwood Avenue. These routes would be used for general emergencies (e.g. earthquake, wildfire) and dam failure at Bear Gulch Reservoir.~~

~~IV.~~V. Goals, Objectives, Policies, and Actions

Goal ~~CS-~~1:	~~The Town recognizes~~ A community that recognizes the potential danger to public safety that may result from natural or human-caused hazards.~~made causes and seeks to minimize the public risks in such hazards.~~

Policy 1.1:	Incorporate the current San Mateo Multi-jurisdictional Local Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency, into this Community Safety Element by reference, as permitted by California Government Code Section 65302.6.
Policy 1.2:	Ensure critical facilities are outside of identified hazard areas. If critical facilities must be located in identified hazard areas, incorporate design solutions to better protect against hazards and include multiple access routes, if located within these areas.

Policy 1.3: Require newly constructed or retrofitted critical facilities to include emergency power and to ensure their design, building and structural materials, and operations account for changes in the frequency and intensity of hazard events.

Policy 1.4: Work with neighboring jurisdictions, districts, and agencies to establish and maintain equitably located community resilience centers throughout the community and in the wider region, ensuring that resilience centers are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and poor air quality due to regional wildfire smoke, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and available to all residents.

Policy 1.5: Design new and retrofitted community facilities to allow flexible use and to support multiple community purposes, including use as community resilience centers.

Policy 1.6: Incorporate on-site renewable energy generation systems, battery energy storage systems, and energy-efficient design and features in existing and future community facilities, as feasible.

Policy 1.7: Encourage the installation of emergency power supplies, including solar panels and battery energy storage systems, for residential and nonresidential properties.

Policy 1.8: Ensure developments in hazard-prone areas have access to at least two emergency evacuation routes, where feasible.

Policy 1.9: Coordinate with Caltrans to increase traffic signal resilience through installation of back-up power systems along evacuation routes and development/enhancement of traffic signal timing plans, prioritizing outbound traffic flow while maintaining access for emergency vehicles through traffic signal pre-emption.

Policy 1.10: Maintain ~~an~~the Emergency Operations Plan ~~that~~and ensure it continues to meet~~s~~ current and anticipated community needs in the event of a major disaster or hazardous event and conforms with the California Standardized Emergency Management System (SEMS).

Policy 1.11: Support and encourage Community Emergency Response Team (CERT) training to residents and members of the business community to increase disaster awareness and emergency response capability.

Policy 1.12: Prepare a post-disaster recovery strategy that focuses on community resilience, sustainability, and an assessment of redevelopment potential following a major disaster.

Policy 1.13: Coordinate with emergency responders, Caltrans, the County, and regional transit agencies to maintain potential evacuation routes to ensure adequate capacity, safety, and viability of those routes in the event of an emergency, to support safe evacuations as needed.

Policy 1.14: Ensure emergency alert systems provide community members with alerts about upcoming or current emergency events in languages and formats accessible to the entire community.

Policy 1.15: Ensure public education campaigns increase awareness of and preparation for hazards in the community.

Policy 1.16: Conduct educational campaigns in multiple languages and offer residents information on ways to protect their property and preserve personal health and safety from various hazards, and on available incentives and other financial resources.

Policy 1.17: Conduct regular emergency training exercises and participate in regional training exercises to ensure that Town employees are adequately trained in emergency response and recovery operations.

Policy 1.18: Publicize areas at risk of local hazards, emergency preparedness programs, evacuation planning resources, and other efforts to promote resident awareness and caution regarding hazards, including soil instability, earthquakes, flooding, and fire.

Policy 1.19: Collaborate with other jurisdictions and local community-based organizations to evaluate opportunities to preserve and improve the cost and quality of property insurance for community members.

Implementation Actions

Action 1.1: Conduct outreach to educate and inform the community about resilience hubs.

Action 1.2: Implement and update the Local Hazard Mitigation Plan every five years to maintain eligibility for FEMA grant opportunities.

Action 1.3: Periodically update the Town's Emergency Operations Plan to meet changing state requirements.

Action 1.4: Collaborate with the County, neighboring cities, and other partners in the preparation of a countywide evacuation study.

Goal ~~-~~2: A community that understands the risks associated with seismic hazards~~Reduce the risk of injury, structure and property damage from exposure to seismic activity~~.

~~Policy CS-2.1: Support the Goals, Objectives and Policies contained in adopted Atherton local hazard mitigation plans and Emergency Operations Plans.~~

~~Policy CS-2.2: Public education, research and information dissemination on seismic hazards and emergency response shall be encouraged.~~

Policy ~~CS~~ 2.~~3~~1: ~~The Town shall seek to improve interjurisdictional cooperation~~Coordinate with the State, County, surrounding cities, and ~~with~~ other agencies ~~for~~ regarding geotechnical safety in land use planning, hazard prevention, and emergency response.

Policy 2.2: Identify and require site-specific geologic/geotechnical reports for development and redevelopment projects to be reviewed and approved by ~~the Town~~a qualified geotechnical consultant ~~geologist~~ that address the following concerns:

- Areas adjacent to locally significant faults.
- Areas mapped by others as having significant liquefaction or landslide hazards.
- Areas believed to have subsurface geologic conditions that could impact existing or future developments.
- Areas where grading activities would create or exacerbate unstable slope conditions, requiring corrective actions.
- Areas where hillside development constraints (existing landslides, steep slopes) require slope stabilization and additional mitigation to achieve adequate factors of safety.
- Areas where conditions of project approval require specific site remediation, structure and foundation design, and/or avoidance strategies.

Policy 2.3: Collaborate with the California Geological Survey, the Association of Bay Area Governments, and San Mateo County to update and improve mapping and analysis of earthquake-induced landslide and liquefaction ~~for~~in the Bay Area.

Policy 2.4: Require that new developments be built to the latest siting, design, and construction standards that promote structural integrity and functionality after a seismic event.

Policy 2.5: Ensure building code updates include local amendments specific to Atherton that address local geologic, topographic, or climatic conditions.

Policy 2.6: Restrict development projects that will cause hazardous geologic conditions or expose existing developments to unacceptable levels of risk, unless effective mitigation can be incorporated.

Policy 2.7: Encourage development in stable geologic areas that require minimal engineered solutions and promote nature-based solutions, wherever feasible.

Policy 2.8: Projects involving G~~g~~eneral P~~p~~lan amendments, zoning code amendments, use permits, variances, building site approvals, and subject to the requirements of the California Environmental Quality Act will be reviewed by the Town Geologist or a qualified geotechnical consultant for hazardous geologic and seismic conditions (i.e., depth of bedrock, soil stability, location of rift zones, and other localized geotechnical problems) using the most current data.

Policy 2.9: Prohibit structures proposed for involuntary occupancy (i.e., schools) or for high voluntary occupancy (i.e., library) in areas of high geologic or seismic hazard, as identified by the Town Geologist or a qualified geotechnical consultant.

Policy 2.10: Subdivisions shall be designed to concentrate homesites, minimize placement of roads and other improvements on unstable lands, and shall demonstrate suitable and stable building sites approved by the Town Geologist or qQualified gGeotechnical cConsultant.

Policy 2.11: No new building site shall be approved on a hazardous fault trace, active landslide, or other geologic or seismic hazard area that poses a significant risk.

Implementation Actions

Action 2.1: Require that all new developments/projects west of Alameda de las Pulgas must prepare and comply with a Design-Level Geotechnical Investigation Report prepared by a Certified Engineering Geologist, Geotechnical Engineer, or qualified Civil Engineer and with Structural Design Plans as prepared by a Registered Structural Engineer.

Action 2.2: Periodically review methods to enhance current siting, design, and construction standards for ensuring post-seismic event structural integrity and functionality.

Action 2.3: Periodically assess critical facilities for structural integrity and identify the necessary mitigation strategies to retrofit them to meet the latest seismic requirements.

Goal -3: A community where impacts from flooding and dam inundation are minimized. ~~Reduce hazards related to natural flooding and potential inundation from failure of the Bear Gulch Reservoir Dam.~~

Policy 3.1: Require new development to effectively manage peak stormwater runoff flows and impacts from increased runoff volumes.

Policy 3.2: Maintain and update the Storm Drain Master Plan to incorporate updated information and verify assumptions based on changing climatic conditions.

Policy 3.3: Ensure codes, policies, and plans incorporate the latest climate change-related data and projections.

Policy 3.4: Appropriately harden new and existing developments in flood-prone areas against flooding.

Policy 3.5: Ensure dams throughout the Town are properly maintained and retrofitted to meet current requirements and are easily adaptable to future conditions.

Policy 3.6: Regularly review local floodplain management regulations to ensure alignment with FEMA's minimum criteria to reduce or avoid future flood damage.

Policy 3.7: Coordinate with the owners/operators of Bear Gulch Reservoir Dam on the latest inundation mapping and emergency response procedures in the event of a failure.

Implementation Actions

Action 3.1: Monitor flood-prone areas for changes and determine if areas of potential flood inundation are increasing as a result of climate change.

Goal ~~CS~~ 4: ~~Support any Town Green Infrastructure programs that~~ A community focused on creating healthier urban environments through green infrastructure~~address stormwater infrastructure that may use natural processes to manage water and create healthier urban environments~~.

Policy 4.1: Restore and maintain the natural functions of riparian corridors and water channels throughout the Town to reduce flooding and convey stormwater flows.

Policy 4.2: Establish a minimum ~~3~~5-foot buffer zone from top of creek bank to accommodate and maintain built and natural infrastructure for flood protection, habitat restoration, and public access.

Policy 4.3: Increase the amount of landscaped areas and other permeable surfaces in public and private projects to improve drainage.

Goal ~~CS~~ 5: ~~Prevent and reduce risks to property and protect residents from~~A community that manages the risks associated with urban and wildland fire hazards.

Policy 5.1: Review new development proposals to ensure that they incorporate required and appropriate State and local fire mitigation measures, including adequate provisions for occupant evacuation and access by emergency response personnel and equipment.

Policy 5.2: Coordinate State and local regulations and priorities to better manage the wildland-urban ~~-~~interface consistent with Firew~~-W~~ise and sustainable community principles.

Policy 5.3: Minimum road widths and clearances around structures shall be in accordance with the California Fire Code.

Policy 5.4: Coordinate with water providers to maintain and enhance water supply infrastructure to ensure adequate supplies for existing and future daily demands and firefighting suppression requirements.

Policy 5.5: Reduce fire risk for non-conforming properties through renovations and improvements that meet updated fire standards and best practices.

Policy 5.6: Support fire prevention, public education, early detection programs, and property inspections to identify and avoid fire hazards.

Policy 5.7: Promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response.

Implementation Actions

Action 5.1: Develop retrofit guidelines for existing non-conforming properties to understand what improvements may be necessary to comply with the California Fire Code, local ordinances, and best management practices.

Goal ~~CS-~~6: ~~Support the Town's ability to respond effectively to natural and human-caused emergencies~~A community ready to adapt to changing risks exacerbated by climate change.

Policy ~~CS-~~6.1: Maintain and expand the urban tree canopy to reduce the risk of downed trees during severe weather and to lessen the impacts of extreme heat. ~~Support the preparation, implementation and regular update of local preparedness and evacuation plans, training and education; and multijurisdictional cooperation and communication for emergency situations.~~

Policy 6.2: Ensure hedgerows are properly maintained and used throughout the community to reduce urban heat island effects, provide wind breaks, and support native habitat and species, where feasible.

Policy ~~CS-~~6.~~2~~3: Encourage new developments and existing property owners to incorporate sustainable, energy-efficient, and environmentally regenerative features into their facilities, landscapes, and structures to reduce energy demands and improve on-site resilience~~.~~. ~~Continue to participate in regional emergency planning efforts.~~

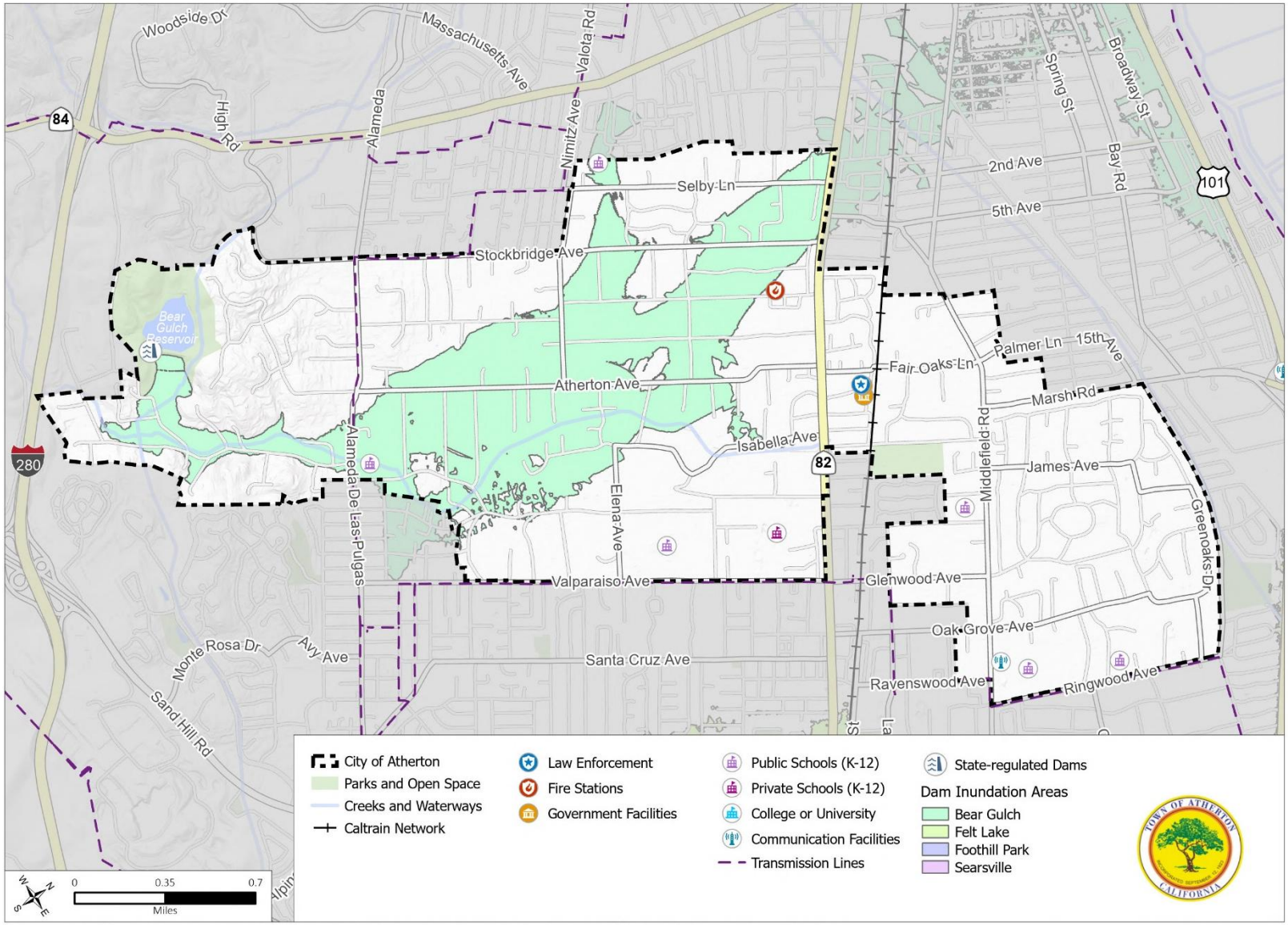
Policy ~~CS-~~6.~~3~~4: Encourage new and existing development to incorporate building and site design features that reduce the effects of extreme heat, improve indoor air quality, and reduce energy demand. These features could include air conditioning, air filtration, energy-efficient duct work, energy-efficient windows and doors, improved awnings and shading, and shade trees and other green infrastructure. Help residents connect with contractors to implement these improvements. ~~The emergency evacuation routes established in this General Plan Element are El Camino Real, Middlefield Road, Marsh Road, Alameda de las Pulgas, Atherton Avenue/Fair Oaks Lane, Stockbridge Avenue, Valparaiso Avenue, Glenwood Avenue, Encinal Avenue, Watkins Avenue and Ringwood Avenue.~~

Policy 6.5: For new development, encourage design and construction techniques that reduce energy use and increase resilience to heat and severe weather.

Policy 6.6: Promote water conservation measures in all public and private development.

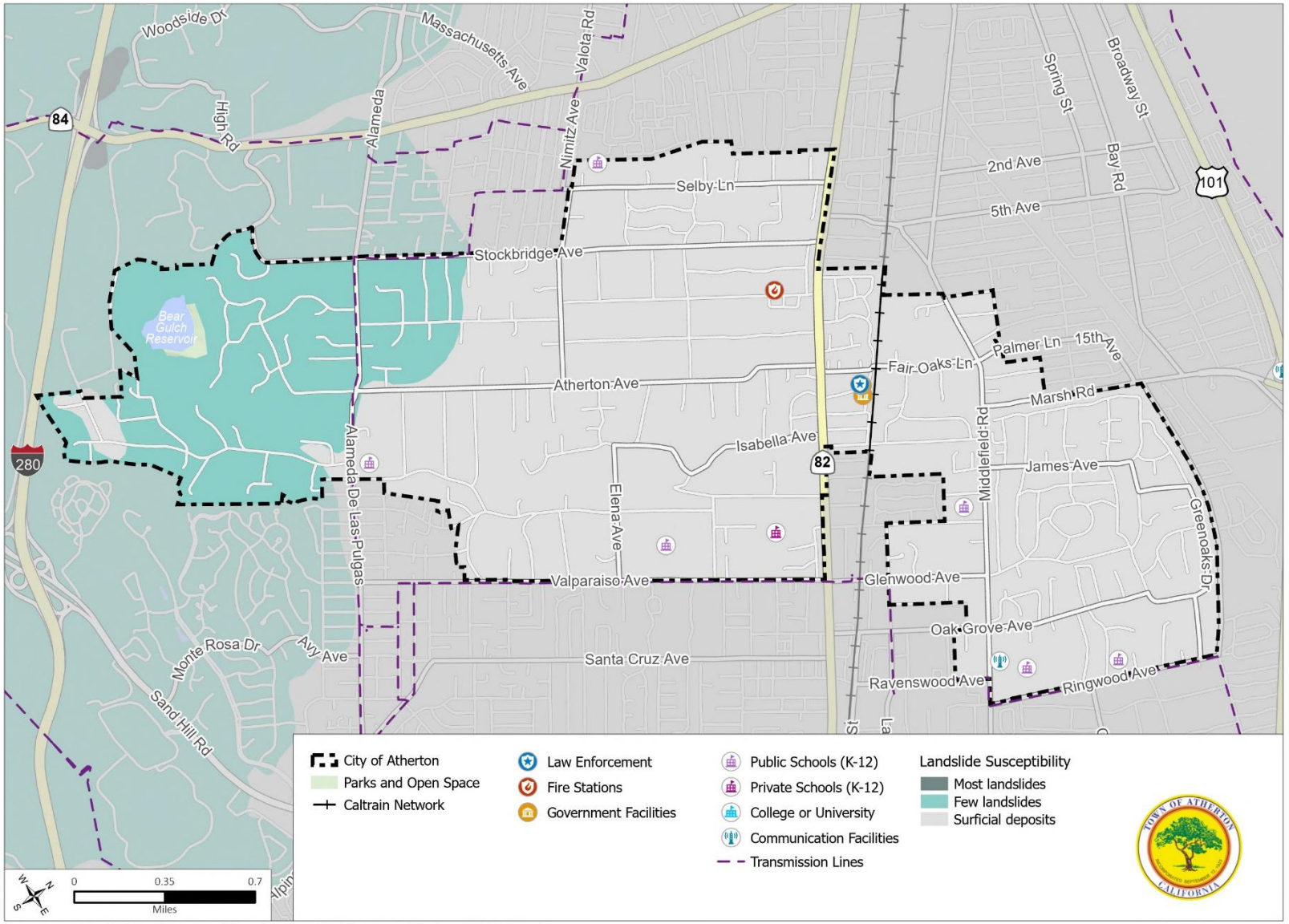
Policy 6.7: Encourage water-efficient practices in site and building design for private and public projects.

Figure CS-1: Dam Inundation Areas



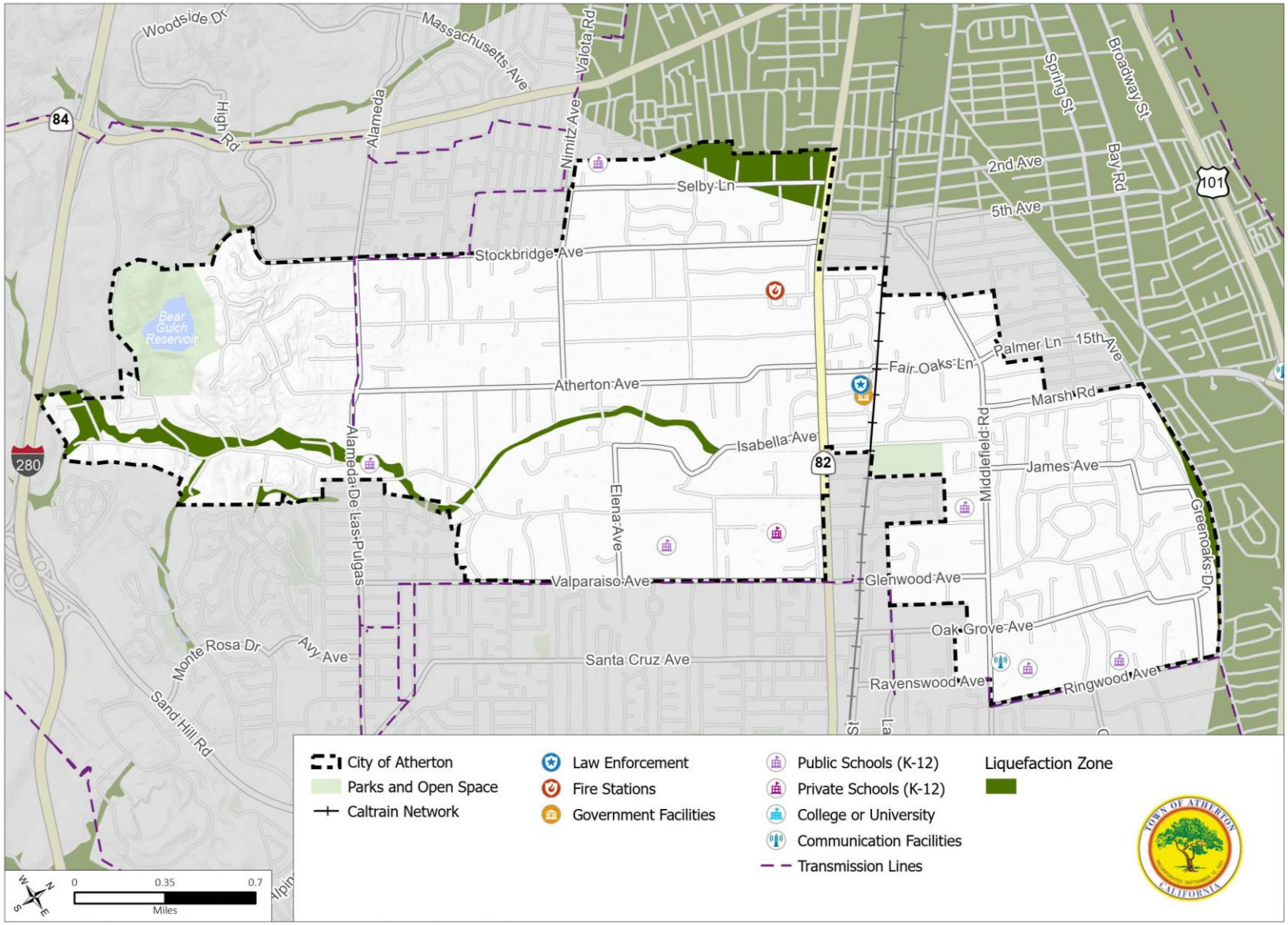
Source: ESRI, 2023; County of San Mateo, 2023; PlaceWorks, 2023; California Division of Safety of Dams, 2023

Figure CS-2: Landslide Hazard Zones



Source: ESRI, 2023; County of San Mateo, 2023; PlaceWorks, 2023; USGS

Figure CS-3: Liquefaction Hazard Zone



Source: ESRI, 2023; County of San Mateo, 2023; PlaceWorks, 2023; **CGS, 2021**

Figure CS-4: Community Safety Diagram (Evacuation Routes)

VI. Endnotes

[i] ~~CD+A~~

[ii] Town of Atherton. 2023. *Atherton Climate Action Plan Update*. https://climateaction.ci.atherton.ca.us/climate-action-plan.