# Environmental Quality Commission

## SPECIAL MEETING AGENDA

**Date:** 12/11/2019
**Time:** 6:00 p.m.
**City Hall - Downtown Conference Room**
**701 Laurel St., Menlo Park, CA 94025**

**A. Call To Order**

**B. Roll Call**

**C. Regular Business**

C1. Approve the October 16, 2019 Environmental Quality Commission meeting minutes (Attachment)

C2. Issue determination on appeal of staff's approval of one heritage tree removal permit at 614 Laurel Avenue (19-012-EQC)

C3. Review and advise on design concepts for Willow Road and U.S. 101 interchange landscape project to the City Council (19-013-EQC)

C4. Review and discuss climate action plan memorandum from the Climate action plan Subcommittee (Attachment)

**D. Reports and Announcements**

D1. Commission reports and announcements

D2. Staff update and announcements- implementation of recently approved policies and cancellation of January meeting

D3. Future agenda Items

**E. Adjournment**

At every Regular Meeting of the Commission, in addition to the Public Comment period where the public shall have the right to address the Commission on any matters of public interest not listed on the agenda, members of the public have the right to directly address the Commission on any item listed on the agenda at a time designated by the Chair, either before or during the Commission's consideration of the item.

At every Special Meeting of the Commission, members of the public have the right to directly address the Commission on any item listed on the agenda at a time designated by the Chair, either before or during consideration of the item.

For appeal hearings, appellant and applicant shall each have 10 minutes for presentations.

If you challenge any of the items listed on this agenda in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Menlo Park at, or prior to, the public hearing.

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# Environmental Quality Commission

## REGULAR MEETING MINUTES – DRAFT

**Date:** 10/16/2019
**Time:** 6:00 p.m.
**City Hall – "Downtown" Conference Room**
**701 Laurel St., Menlo Park, CA 94025**

### A. Call To Order

Vice Chair Payne called the meeting to order at 6:11 p.m.

### B. Roll Call

Present: Gaillard, Kabat, London, Martin (excused at 7:45 p.m.), Payne, Price (arrived at 6:18 p.m.), Turley
Absent: None
Staff: Sustainability Manager Rebecca Lucky and Sustainability Specialist Joanna Chen

### C. Public Comment

None.

### D. Regular Business

D1. Review and discuss subcommittee's climate action plan memorandum and consider a recommendation to City Council for developing a climate action plan 2.0 (Attachment)

Commissioner Gaillard, Kabat and Payne made a presentation (Attachment).

- Lynne Bramlett expressed support for developing a climate action plan 2.0 (Attachment).
- David Sowerwine expressed support of developing a climate action plan 2.0 and made some suggestions on how to achieve the strategies.
- Peter Edmonds expressed concerns on grid resiliency and requested clarification on the production of greenhouse gas emission from electricity.
- Diane Bailey expressed support of developing a climate action plan 2.0 and invited the Commissioners to join MenloTogether subcommittee to strategize on how to reduce vehicle miles traveled.

**ACTION**: Motion and second (Gaillard/ Price) to recommend updating the climate action plan with the proposed strategies and targets in the report and presentation to the City Council, with the following modifications for the prosed strategies, passed (6-0-1, Martin absent):

- Reword No. 4 to be "electrify vehicles (EV), reduce gasoline sales and increase EV infrastructure" and change the wording from "eliminate" to "reduce"
- Move No. 8 "Prepare the City for climate change through adaptation measures" to the last item
- Switch No.9 "Sequester residual carbon emission through direct carbon sinks" and No.10 "Avoid installing new appliances/structures that will be abandoned due to climate change" around
- Remove No. 11 "Establish robust and frequent reporting on GHG emissions"

D2. Approve the September 18, 2019 Environmental Quality Commission meetings minutes

Chair Price introduced the item.

**ACTION**: Motion and second (Gaillard/ London) to approve September 18, 2019 Environmental Quality Commission meetings minutes, passed (6-0-1, Martin absent).

## E. Reports and Announcements

E1. Commission reports and announcements

Commissioner Kabat provided a reach code update from other Bay Area cities.

E2. Staff update and announcements

Sustainability Manager Rebecca Lucky discussed sustainability's progress on the first reading of the heritage tree ordinance and the electric vehicle fleet grand jury report.

Sustainability Specialist Joanna Chen announced the cancellation of the November and December Environmental Quality Commission meetings and tentatively scheduled a special meeting on December 11.

E3. Future agenda items

Chair Ryann Price would like to explore options to ban pesticide use in Menlo Park.

## F. Adjournment

Chair Price adjourned the meeting at 9:11 p.m.

Minutes prepared by Joanna Chen, Sustainability Specialist

CITY OF MENLO PARK

## STAFF REPORT

**Environmental Quality Commission**
**Meeting Date:** **12/11/2019**
**Staff Report Number:** **19-012-EQC**

**Regular Business:** **Issue Determination on appeal of staff's approval of one heritage tree removal permit at 614 Laurel Ave.**

### Recommendation

Staff recommends the Environmental Quality Commission (EQC) deny the appeal and uphold staff's decision to approve the permit application to remove a blue gum eucalyptus at 614 Laurel Ave.

### Policy Issues

Under the heritage tree ordinance in the Menlo Park Municipal Code, any resident or property owner may appeal a heritage tree permit decision to the EQC. In addition, any resident or property owner may appeal the decision of the EQC to the City Council within 15 days after commission's decision. Tree removal decisions made by staff, the EQC, or City Council must be related to the decision-making criteria in section 13.24.040 of the heritage tree ordinance.

### Background

The City adopted its heritage tree ordinance in 1979 to ensure the large population of healthy trees are protected for a long term. The purpose of the ordinance is to:

- Protect numerous oak, bay and other trees in the City
- Preserve the trees for the health and welfare of the community
- Prevent erosion of topsoil and sedimentation in waterways
- Provide shade and wildlife habitat
- Reduce air pollutants
- Decrease wind velocities and noise

The ordinance was created to protect and preserve heritage trees on private property by requiring a permit for removal, and only allowing removals if there is a good cause. Heritage trees are defined as any tree or groups of trees specially designated by the council and as outlined in the following table:

**Table 1: Definition of a heritage tree**

| Tree Type | Circumference | Diameter |
|---|---|---|
| Any oak tree native to California | 31.4 inches | 10 inches |
| Any other tree species | 47.1 inches | 15 inches |
| Any tree with more than one trunk | 47.1 inches | 15 inches |

Implementation of the ordinance involves the permit applicant hiring an arboricultural professional to prepare a report detailing the rationale for requesting the removal using the criteria in the heritage tree ordinance. The city arborist reviews the permit application and arborist report, conducts a site visit, and makes a determination on whether to approve or deny the heritage tree removal.

The new heritage tree ordinance was approved by City Council on November 19, 2019, but will be effective on July 1, 2020. In the meantime, the current ordinance is still in effect, and the permit applicant or any community member may appeal the decision of the City Arborist to EQC at the Commission's earliest convenience to make a determination.

On September 3, 2019 the property owner, Fe Mancuso, submitted a heritage tree removal permit application (Attachment A) for the removal of one blue gum eucalyptus *(eucalyptus globulus).* The project arborist report submitted with the permit application, completed by Juan Larios on August 13, 2019, identified the eucalyptus to be 85 to 90 feet tall with a trunk diameter of 57.1 inches. The tree recently had a limb fail, which was approximately eight inches in diameter and fell on the neighbor's property damaging their wood fence. Removal was requested by the applicant on the basis of the following conditions:

1. To prevent additional limb failures
2. To minimize risk of damaging neighbors' properties
3. To preserve the health and welfare of the community

The city arborist reviewed the application and visited the site on October 3, 2019 to inspect the tree and conduct a Level 2, basic inspection and tree risk assessment. In summary, the city arborist determined the eucalyptus to be in fair health with poor structure and a high risk rating within a time frame of 6 months.

The city arborist approved the permit application based on the following conditions:

1. Tree is in fair health with confirmed brown rot infection.
2. Tree structure is poor with previous topping cuts resulting in weakly attached suckers and sprouts throughout canopy; no less than three major lateral limbs have weak attachments to the tree trunk.
3. Risk rating is high; Alternatives to removal which would be necessary to reduce residual risk to low, would require aggressive pruning inconsistent with industry best management practices.

On October 22, a Menlo Park resident submitted an appeal letter to EQC (Attachment B) and met with City staff on November 12 to understand more about the tree's condition. Two public comments were submitted to staff (Attachment C).

## Analysis

### Decision making criteria

Section 13.24.040 of heritage tree ordinance requires staff and the EQC to consider the following eight factors when determining whether or not there is good cause for the removal of a heritage tree

1. The condition of the tree or trees with respect to disease, danger of falling, proximity to existing or proposed structures and interference with utility services;
2. The necessity to remove the tree or trees in order to construct proposed improvements to the property;
3. The topography of the land and the effect of the removal of the tree on erosion, soil retention and diversion or increased flow of surface waters;
4. The long-term value of the species under consideration, particularly lifespan and growth rate;
5. The ecological value of the tree or group of trees, such as food, nesting, habitat, protection and shade for wildlife or other plant species;
6. The number, size, species, age distribution and location of existing trees in the area and the effect the removal would have upon shade, privacy impact and scenic beauty;

7. The number of trees the particular parcel can adequately support according to good arboricultural practices;
8. The availability of reasonable and feasible alternatives that would allow for the preservation of the tree(s).

Staff's approval of the removal permit was based on the following heritage tree ordinance conditions:

*1. The condition of the tree or trees with respect to disease, danger of falling, proximity to existing or proposed structures and interference with utility services;*
*4. The long-term value of the species under consideration, particularly lifespan and growth rate;*
*8. The availability of reasonable and feasible alternatives that would allow for the preservation of the tree(s).*

**With respect to criteria one and four**, the following criteria were assessed related to disease, danger of falling, proximity to existing or proposed structures, and long term value of the species.

- The subject tree is a blue gum eucalyptus (*Eucalyptus* globulus) in fair is health and poor structure. The tree is growing at the north east corner of the subject address next to an accessory dwelling unit (ADU) in the rear of the property (Attachment D) and is approximately 90 feet in height with a trunk diameter of 57 inches.
- The base of the tree trunk is infected with the western sulphur fungus (*Laetiporus* sp.), which is a type of brown rot known to cause significant rapid wood strength loss (Attachment E and F).
- The tree had been previously topped resulting in numerous large water-sprouts arising from large pruning cuts on most of the main lateral limbs, which are crowded and weakly attached (Attachment G). The recent failure of a limb approximately nine inches in diameter damaged the wood fence to the north of the tree (Attachment H). Several of the main lateral limbs have weak attachments at their union to the trunk of the tree.
- The tree was assessed as being a high risk due to the condition of the tree based on 1) the likelihood of limb failure, 2) the likelihood of impacts to targets nearby (the primary one being the ADU) and 3) the severity of consequences if failure and impact was to occur (Attachment I).

**With respect to criteria eight**, reasonable and feasible alternatives were considered for mitigation measures to decrease the residential risk to low may include the following strategies:

- Aggressive pruning to reduce crown, limb end weight, and thin suckers and sprouts would be in excess of the industry best practice of limiting the pruning of more than 25% of the living foliage in one growing season.
- Removing a greater percentage of foliage can starve the tree of food, decrease vigor, increase likelihood of pest and disease infection, and increase the rate of disease spread. Trees in less than good health are predisposed to accelerated rate of decline with excessive pruning.

Staff recommends the Environmental Quality Commission (EQC) to deny the appeal and uphold staff's decision to approve the heritage tree removal permit application based on these findings.

## Impact on City Resources

There are no additional City resources required for this item.

## Environmental Review

This action is not a project within the meaning of the California Environmental Quality Act (CEQA) Guidelines §§ 15378 and 15061(b)(3) as it is a minor change that will not result in any direct or indirect physical change in the environment.

## Public Notice

The city arborist posted a notice on or near the tree stating the reasons for approving the heritage tree removal and staff mailed notices to neighbors who live within 100 yards of the applicant's property on October 8, 2019. Public Notification of the EQC meeting was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

## Attachments

A. Heritage tree removal permit application
B. Appellant's appeal letter
C. Public comment
D. Tree location
E. Fungus - images
F. Fungus - management
G. Topping
H. Downed Limb
I. City Arborist tree risk assessment

Report prepared by:
Christian Bonner, City Arborist
Joanna Chen, Sustainability Specialist

Reviewed by:
Rebecca Lucky, Sustainability Manager
Justin Murphy, Deputy City Manager

ATTACHMENT A

# Heritage Tree Removal Permit Application

**This application must be submitted with the Arborist Report Form**
**Please submit completed forms to:**
**701 Laurel St., Menlo Park, CA 94025**

**Application No.** HTR2019-00166

**Purpose of application: Removal** ☒ **Pruning of more than 25%** ☐

**Permit Fee: $210.00 (each tree, up to 3 trees); $174 each additional tree (separate forms required for each tree)**

**PLEASE PRINT CLEARLY**

Site Address: 614 Laurel Ave

Name of Applicant: Fe B Mancuso Phone [redacted] FAX

Mailing Address: 614 Laurel Ave Email: [redacted]

Type of Tree: Eucalyptus Location on property: in alley behind house (alley between Central & Laurel)

Reasons for Request:
The tree keeps dropping limbs, afraid of damage to structure (mine + neighbors) as well as physical damage. This is an ongoing problem despite repeated pruning

**IF TREE IS DEAD or DAMAGING STRUCTURE PLEASE ATTACH PHOTOS DEMONSTRATING CONDITION.**

**ARE YOU CONSIDERING ANY CONSTRUCTION ON YOUR PROPERTY IN THE NEXT 12 MONTHS?**
Yes ☐ No ☐
If yes, please submit additional information describing what type of construction is planned and a site plan.

- Tree may not be removed (or pruned over 25%) unless and until the applicant has received final permission from the City as indicated below.
- The signed permit approval form must be on site and available for inspection while the tree work is being performed.
- A suitable replacement tree, 15 gallon size or larger with a mature height of 40 feet or more, is to be installed in the time frame indicated below.

**I (we) hereby agree to hold the City harmless from all costs and expenses, including attorney's fees, incurred by the City, including but not limited to, all cost in the City's defense of its actions in any proceeding brought in any State or Federal Court challenging the City's actions with respect to the proposed tree removal.**

PAID
SEP 03 2019
CITY OF MENLO PARK

**Incomplete applications will not be processed.**

Signature of property owner authorizing access and inspection of tree in his/her absence.

Fe B Mancuso Date: 9/3/19

---PLEASE DO NOT WRITE BELOW THIS LINE---

**PERMIT APPROVED** ☑ **PERMIT DENIED** ☐

**TIMING OF REMOVAL**
☑ Upon receipt of this approved permit
☐ After applying for a Building Permit for associated construction

**TIMING OF REPLANTING**
☑ Within 30 days of Heritage Tree removal
☐ Prior to final building inspection of associated construction

**Staff Signature:** Christy R. Bonner Date: 10/3/19

**Print name and title:** Chrisitan Bonner, City Arborist

# Arborist Form

**Please complete one form for each tree. Mark each tree with colored ribbon or tape prior to our inspection.**

**Site Address:** 614 Laurel AVE Menlo Park Ca 94025

**ARBORIST INFORMATION:**

Name of Certified Arborist Juan M Juarez

ISA or ASCA number: WE-3152A Menlo Park Business License number# 651341

Company: S.P. Mc Clenahan Co. Inc

Address: 1 Arastradero rd portola Valley Ca 94028

Phone: 650 326-8781 FAX 650-854-1267 Email: Juan@spmcclenahan.com

**TREE INFORMATION:**

Date of Inspection: 8/13/19

Common Name: Blue Gum Euc. Botanical Name: Euc Globulus

Location of Tree: Rear property AT Alley Height of Tree: 85 To 90 Feet

Diameter of tree at 54 inches above natural grade: 57.1

Circumference of tree at 54 inches above natural grade -

**Condition of Tree:**

( Fair ) Recent Limb Failure 8" Diameter on neighbors Fence / property / Weak Limb Attachments Throughout crown structures below canopy.

**If recommending removal or pruning, please list all reasons:**

Recent Limb failure Inspected Neighbors property, Removal Recommended TO Eliminate Risk of Additional Limb failure> Damaging Houses & Neighboring properties, Harming Persons?

**Suggested Replacement Tree:** Quercus Lobata

**Signature of Arborist:** Juan M Juarez **Date:** 8/29/19

ATTACHMENT B

RECEIVED

OCT 22 2019

City Clerk's Office
City of Menlo Park

610 Laurel Avenue
Menlo Park CA 94025
[redacted]

October 22, 2019

[redacted]

Environmental Department
City of Menlo Park
701 Laurel Street
Menlo Park CA 94025

Re: Heritage Tree at 614 Laurel Avenue

To the Environmental Department:

We appeal the City Arborist's decision to remove this heritage eucalyptus tree. Enclosed is a $200 check for the appeal fee. Please advise us of the appeal hearing date with the Environmental Quality Commission.

Sincerely,

Eloise Maki Rick Zwicker

Eloise Maki & Rick Zwicker

cc: Scott Briggs, 214 Walnut Street

# Re: Tues Nov 12, 3 pm meeting re heritage tree at 614 Laurel Ave

Inbox x

**Janet Goy** Nov 10, 2019, 4:27 PM (2 days ago)

to me, Monte

Hi Eloise,

Monte and I are taking a class Tuesday afternoon at OLLI at Santa Clara University so will not be able to join you.

We both support all of you in meeting with city staff to further explore the city arborist's approval to remove Fe's Eucalyptus Tree. If the tree can be safely preserved with less radical measures i.e. trimming, etc., this is preferable. We especially need to protect our trees as they play an even more vital part today than ever before, as we face the devastating effects of global warming.

Janet Goy and Monte Hoskins

**From:** Bonner, Christian R
**To:** Chen, Joanna P; Lucky, Rebecca L
**Subject:** FW: Hazardous Eucalyptus Tree -614 Laurel
**Date:** Tuesday, November 26, 2019 6:49:01 AM
**Attachments:** image001.png
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Letter in support of HTR at 614 Laurel St. below.

Joanna – typically these types of letters from the community (both in support and in opposition of removal) are compiled and provided to EQC members prior to hearing.

Regards,


**Christian R. Bonner**
Public Works Supervisor | City Arborist
City Corporation Yard
333 Burgess Dr.
tel 650-330-6793
menlopark.org


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**From:** Ken Bayne <bayne.ken@gmail.com>
**Sent:** Monday, November 18, 2019 11:01 AM
**To:** Bonner, Christian R <crbonner@menlopark.org>
**Subject:** Hazardous Eucalyptus Tree



Hello Mr. Bonner,

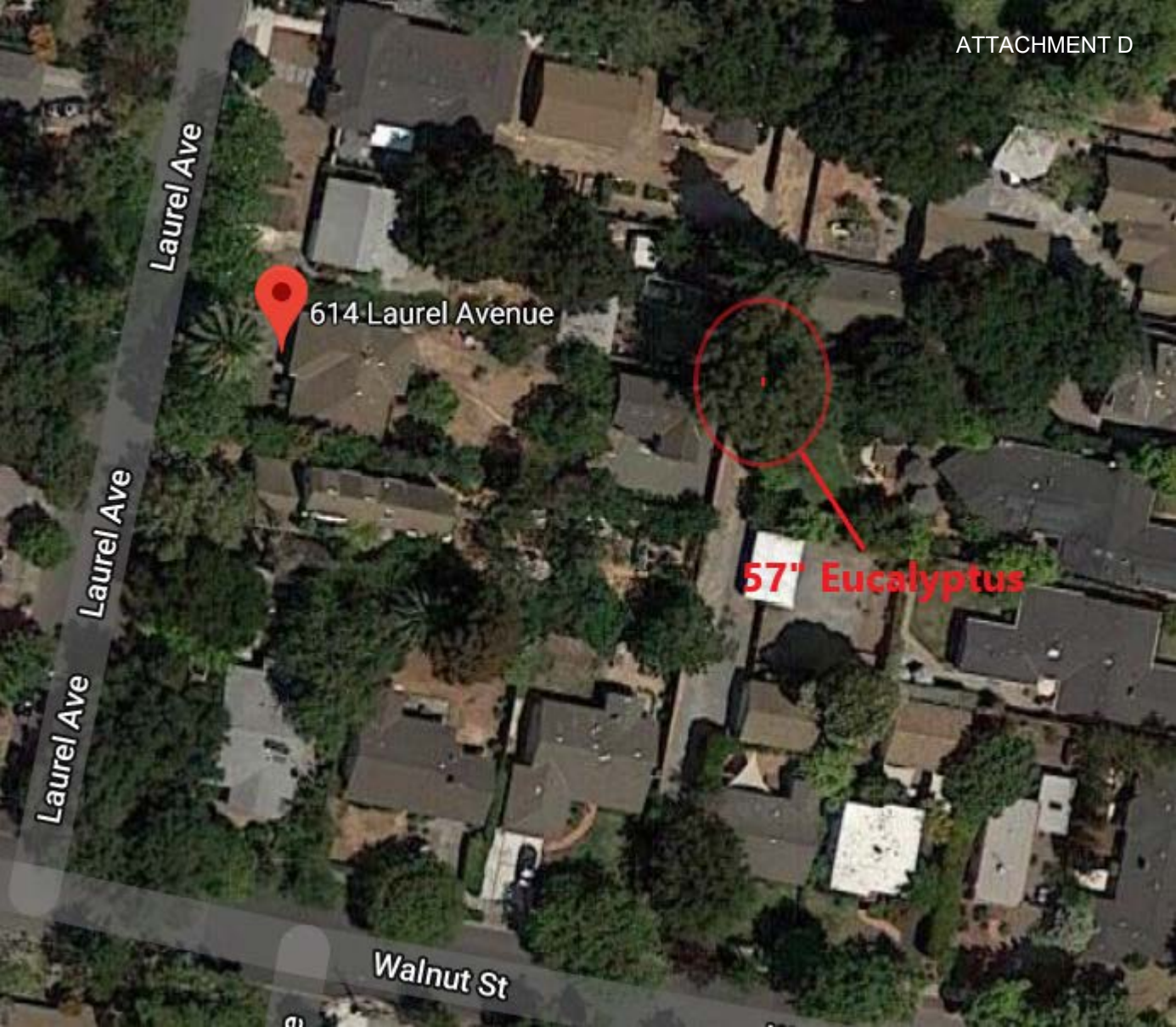
I am the owner at 637 Central Ave. I was trilled to learn of the planned removal of the large Eucalyptus tree in the ally behind my house, however I understand there is now an appeal of the permit to do so. I am writing to you to inform you that in my opinion while the tree is beautiful to look at it is a significant hazard. I've been in the home since 1990, and over the years that tree has damaged multiple vehicles with falling debris. I am unable to use my parking pad off the ally for its intended purpose and recently moved my RV out of that pad to prevent damage. Unfortunately I have no choice but to park my small EV back there as my charger is located in the garage. My 2018 EV now has multiple small dents due to the falling debris.

While the damage to my property so far has been cosmetic, I am concerned of the possibility of something much more serious. Recently I have noticed significant fungus growing at the base of the tree (which I routinely kick off). Also recently the tree dropped a major branch, crushing the fence behind my property (the branch is still there as it will require a chain saw to cut it up and remove). Had that branch fallen onto my parking pad it would have caused serious damage and potential injury to me had I been back there coming in or out in my car, or

working in my garage.  I come in and out every day as do others.  I do not feel safe with that tree back there, particularly with the high winds we routinely experience.  I am also concerned for the safety of those who live in the small house directly under that tree.

I understand you will be looking at the tree and advising a recommended path forward.  I wanted to make you aware of my experience over the years and my concern that the tree is not safe.

Thank you,
Ken Bayne
(650) 521-7016


Laurel Ave
614 Laurel Avenue
Laurel Ave
Laurel Ave
57" Eucalyptus
Walnut St

# Wood Decay Fungi in Landscape Trees

Revised 8/19

Download PDF

In this Guideline:



Several fungal diseases, sometimes called heart rots, sap rots, or canker rots, decay wood in tree trunks and limbs. Under conditions favoring growth of specific rot fungi, extensive portions of the wood of living trees can decay in a relatively short time (i.e., months to years). Decay fungi reduce wood strength and may kill storage and conductive tissues in the sapwood. While most species of woody plants are subject to trunk and limb decay, older and weaker trees are most susceptible.

White rot of oak.

## DAMAGE

Decay fungi destroy cell wall components; including cellulose, hemicellulose, and lignin, that make up the woody portion of a tree. Depending on the organism, decay fungi can destroy the living (sapwood) or the central core (heartwood) part of the tree. Decay isn't always visible on the outside of the tree, except where the bark has been cut or injured, when a cavity is present, or when rot fungi produce reproductive structures.

Heart brown rot in a conifer trunk.

Wood decay can make trees hazardous, as infected trunks and limbs become unable to support their own weight and fall, especially when stressed by wind, heavy rain, or other conditions. Decay can also be hidden, affecting wood strength without any outward sign of its presence. Decay fungi typically reduce the weight of wood by growing through the vascular tissues and degrading some or all major cell wall components and absorbing breakdown products of cellulose or hemicellulose. A 10% loss of wood weight can result in 70 to 90% loss in wood strength. Many branches that fall from trees appear sound, but upon analysis, they were colonized by wood decay organisms.

Table 1 lists several wood decay fungi found on California trees and symptoms and signs commonly associated with each organism.

Fruiting bodies of turkey tail fungus.

## IDENTIFICATION AND BIOLOGY

Many wood decay fungi can be identified by the distinctive shape, color, and texture of the fruiting bodies they form on trees. These fruiting bodies take several forms, depending upon the fungus that produces them, but most of them fit into categories commonly referred to as mushrooms, brackets or conks. They often grow near wounds in bark, including old pruning wounds, at branch scars, in proximity to the root crown, or near surface anchor roots. Some decay fungi, such as *Armillaria mellea*, produce fleshy mushrooms at the base of infected trees or along their roots, often after rain in fall or winter. All mushrooms and some bracket fungi are annual (i.e., appearing and disappearing seasonally), but many conks are perennial and grow by adding a new spore-bearing layer (hymenium) each year.

Decay fungi are divided into those that attack heartwood (causing heart rots) and those that attack sapwood (causing sap rots and canker rots). Further subdivision is based on the appearance of the decayed wood (i.e., white rots, brown rots, and soft rots) or location in the tree (the decay is called a butt rot if it is at the base of the trunk). Canker rots

usually appear on branches or the trunk. When a fruiting body is visible on a tree, it is usually associated with advanced decay; the extent of decay may be far above or below the location of the fruiting body. Trees with extensive sap rot may show symptoms of decline, including increased deadwood and a thinning canopy with reduced density of foliage.

Wounds where large avocado limbs were pruned have been colonized by a heart rot decay fungus.

### White rots

White rots break down lignin *and* cellulose, and commonly cause rotted wood to feel moist, soft, spongy, or stringy and appear white or yellow. Mycelia colonize much of the woody tissues. White rots usually form in flowering trees (angiosperms) and less often in conifers (gymnosperms). Fungi that cause white rots also cause the production of zone lines in wood, sometimes called *spalted* wood. This partially rotted wood is sometimes desirable for woodworking.

### Brown Rots

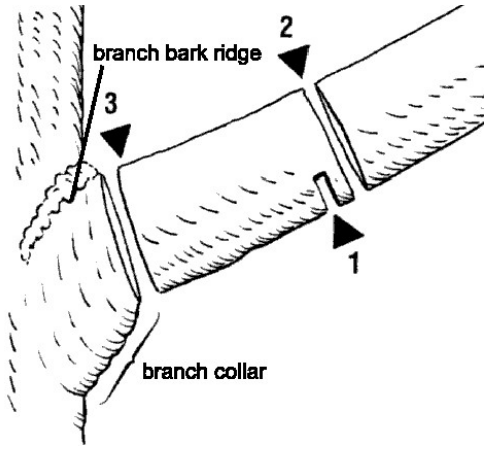
Brown rots primarily decay the cellulose and hemicellulose (carbohydrates) in wood, leaving behind the brownish lignin. Wood affected by brown rot usually is dry, fragile, and readily crumbles into cubes because of longitudinal and transverse cracks occurring which follow cellular lines, or across cells, respectively. The decay commonly forms columns of rot in wood. Brown rots generally occur in conifers as heart rots. Hardwood trees are more resistant to decay by brown rot than to white rot fungi.

### Soft Rots

Soft rots are caused by both bacteria and fungi. These organisms break down cellulose, hemicellulose, and lignin, but only in areas directly adjacent to their growth. Soft rot organisms grow slower than brown or white rot organisms, and therefore damage occurs to the host tree more gradually. Given enough time, however, any rot can cause extensive structural damage.

## INFECTION

Most wood decay in limbs and trunks is the result of infection by airborne fungal spores and by spores and mycelial fragments carried by insects to wood exposed by injury. Injuries include natural branch thinning and loss due to shading, pruning wounds, vandalism, and damage from machinery or construction. Other causes of wounds include sunburn, fire, ice, lightning, snow, or insects that bore into the trunk or branches. Some decay organisms can enter through natural openings in the stem such as lenticels or at branch unions. *Armillaria mellea* and *Ganoderma* spp. commonly infect woody roots and can spread to nearby trees through root grafting.




### How to remove a branch or limb

Remove a branch by making the pruning cut just outside the branch bark ridge and branch collar, as indicated by number 3. When removing a limb larger than about 2 inches in diameter, make three cuts in the order indicated. Make the first cut from below, about one-third of the way through the limb and 1 or 2 feet from the trunk. Make the second cut about 2 inches beyond the first cut, cutting from above until the limb drops. Make the final cut at number 3.

## MANAGEMENT

Wood decay is usually a disease of old trees. While difficult to manage, several factors can reduce its impact. Protect trees from injuries and provide proper cultural care to keep them vigorous. Prune young trees properly to promote sound structure and minimize the need to remove large limbs from older trees, which creates large wounds. Large wounds provide greater surface area and exposure to heartwood for potential colonization by decay organisms.

Remove dead or diseased limbs. Make pruning cuts properly. Prune just outside the branch bark ridge, leaving a uniform collar of cambial tissue around cuts on the trunk to facilitate wound closure. Avoid leaving stubs (branch protrusions that will eventually die) that provide an infection opportunity due to wound closure failure. Proper pruning cuts are circular, not oval, and not flush to the main stem (which damages the branch bark collar or ridge). Wound dressings are not recommended as they do not hasten wound closure or prevent decay and, in some cases, may hasten the development of decay behind the dressing.

Tree failures can cause personal injury, property damage, or both. Trees near structures or other high-value potential targets should be regularly inspected by a qualified expert for signs of wood decay and other structural weakness. Hazardous trees should be assessed by a qualified arborist who can recommend mitigation, including appropriate pruning or cultural practices. Depending on the extent of decay and the structural weakness, tree removal may be necessary.

**Table 1. Wood Decay Fungi on California Landscape Trees.**

| Fungus | Common hosts | Symptoms |
|---|---|---|
| ***Armillaria mellea***<br>oak root fungus<br>  | Many coniferous and broadleaved woody species; peach, fig (*F. carica)* and Peruvian pepper are highly susceptible hosts. | One of the most widespread plant pathogens in California. Causes a white butt and root rot. When bark is removed, white or cream-colored mycelial plaques—the vegetative part of fungi—are present between the bark and wood of roots and trunk near or slightly above the soil line. Mushrooms can form at the base of affected trees following fall and winter rains. Fungi enter susceptible plants by means of dark, rootlike structures called rhizomorphs found on the surface of affected roots. Fungal growth is most rapid under warm and wet conditions; decay has been slowed or stopped in some instances by removing soil from around the base of the tree and allowing areas to dry. |
| ***Ganoderma applanatum***<br>artist's conk<br>  | Wide variety of landscape and forest trees including acacia, alder, ash, birch, carob, citrus, elm, eucalyptus, fir, magnolia, maple, mulberry, oak, Peruvian pepper tree, pine, poplar, sweet gum, sycamore, tulip tree, and willow. | The fungus invades trees through wounds, kills the sapwood of some species, and causes white rot of the sapwood and heartwood in roots and trunks. Forms semicircular conks that are 2–30 inches wide and 1–8 inches thick. Upper surface of conk is brown, and the lower surface is white, but turns dark when scratched, hence the common name "artist's conk." Stalks are absent. Fungus can spread through natural root grafting. Conks usually are found near ground level. Columns of decaying wood can extend as far as 15 feet above and below the conk. |
| ***Ganoderma polychromum (formerly G. lucidum)***<br>varnish fungus<br>  | Acacia, apple, ash, birch, boxwood, cherry, citrus, elm, hackberry, sweet gum, black locust, honey locust, magnolia, maple, oak, olive, peach, Peruvian pepper tree, pine, poplar, redbud, spruce, and willow. | The fungus causes a white rot and can attack living trees, causing extensive decay of roots and the trunk. Can kill the host during a period of 3–5 years. On some trees, such as oaks and maples, the rate of decay is rapid. The red-brown, annual conks are up to 14 inches wide and coated on top with a distinctive reddish varnish-like crust; they generally appear at base of the trunk during summer. Causes decline in hardwood trees. Environmental stress, such as drought and wounding, can predispose trees to infection from this fungus. |
| ***Laetiporus gilbertsonii L. conifericola***<br>sulfur fungus<br>  | Acacia, ash, beech, birch, cherry, chestnut, elm, eucalyptus, fir, hackberry, black locust, honey locust, maple, oak, pepper tree, pine, poplar, spruce, tulip tree, walnut, and yew. | The fungus causes a brown heart rot of living trees but also will decay dead trees. It is one of the few brown rot fungi of hardwood trees. It can enter trees through bark wounds and dead branch stubs. This fungus is one of the most serious causes of decay in oaks and eucalyptus, and one of the few fungi that cause decay in yew. The soft, fleshy, moist conks range from 2 inches to over 20 inches wide and are bright orange yellow above and red yellow below. Conks are produced annually and appear singly or in clusters, usually in fall; they become hard, brittle, and white with age. Conks do not appear until many years after the onset of decay and indicate extensive internal damage. |
| ***Pleurotus ostreatus***<br>oyster mushroom | Acacia, alder, ash, beech, birch, chestnut, elm, eucalyptus, fir, hackberry, holly, horse chestnut, linden, magnolia, maple, oak, olive, | This fungus decays heartwood and sapwood, causing a white, flaky rot. Infections occur through open wounds, and decay is most extreme when wounds are large. A cluster of shelf-like mushrooms, each 2–8 inches wide, is produced annually and can indicate localized decay or heart rot that extends 10 feet in either direction. The mushrooms are smooth on the upper surface with gills that |

| | | |
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|  | pecan, persimmon, poplar, spruce, tulip tree, walnut, and willow. | characteristically extend down along the stalk on the lower surface. |
| ***Schizophyllum commune*** common split gill fungus  | More than 75 species of landscape trees including acacia, ash, birch, camphor, elm, eucalyptus, fir, juniper, laurel, locust, magnolia, oak, oleander, pepper tree, pine, plane tree, poplar, sequoia, spruce, sweet gum, tulip tree, walnut, and willow. | This fungus causes a white rot of sapwood and produces annual fruiting bodies that are hairy and white to pale brown when young but darken with age. The stalkless brackets are tough, leathery, about 1–4 inches wide, and usually found in clusters. The pale gills on the underside have the appearance of being longitudinally split, hence the common name. The fungus colonizes trees stressed by heat, sunburn, drought, or major wounds. It generally fruits on cut and fallen wood and dead parts of living trees. |
| ***Stereum* species** parchment fungus  | Acacia, alder, birch, catalpa, cherry, chestnut, elm, eucalyptus, fir, juniper, magnolia, maple, oak, pine, sequoia, spruce, sweet gum, tulip tree, and willow. | This group of fungi are commonly found on dead trees, branches, and stumps but rarely cause serious decay in living trees. They can cause heart rot on trees wounded by pruning or bark injury. The annual fruiting bodies are thin, leathery, and bracket-like, lack stalks, and are 1 inch or more across. The upper surface is gray brown, and the lower side is buff to brown and smooth, lacking tubes or pores. |
| ***Trametes hirsuta*** hairy turkey tail fungus  | Alder, ash, birch, catalpa, cherry, chestnut, citrus, elm, eucalyptus, fir, ginkgo, holly, juniper, locust, magnolia, maple, oak, pine, poplar, redbud, spruce, sweet gum, sycamore, tulip tree, walnut, and willow. | This fungus, which causes white rot, can enter a tree through dead wood exposed by fire scarring; decay begins as a sap rot and can continue as a heart rot on some woody species. It often produces fruiting bodies on the dead portions of live hardwoods; fruiting bodies are tough, leathery, usually stalkless, shelf-like, and 1–10 inches wide. The outer surface is dry, velvety, and has concentric zones. The under surface is poroid. |
| ***Trametes versicolor*** turkey tail fungus  | Alder, apple, ash, beech, birch, catalpa, cherry, chestnut, crape myrtle, elm, eucalyptus, fir, gingko, hackberry, holly, juniper, laurel, lilac, linden, locust, London plane tree, maple, nectarine, oak, pepper tree, poplar, redbud, sweet gum, tulip tree, walnut, and willow. | This fungus commonly is found on cut and fallen wood and on wounded areas of living trees; it also is capable of colonizing sapwood of trees and shrubs stressed by water shortage, sunburn, freeze damage, or wounding. The fungus, which causes a white, spongy rot of wood, can actively invade and rapidly kill the cambium (the tissue between the bark and wood), causing cankers with papery bark and dieback. The annual conks are thin, leathery, stalkless, bracketlike, 1–4 inches across, and often found in groups. The upper surface is velvety with concentric zones of various colors, and the lower surface is cream colored and minutely poroid. |
| ***Phellinus igniarius* and other *Phellinus* spp.** | American sweetgum, apple, bay tree, birch, elm, cottonwood, locust, lilac, poplar, | *Phellinus* produce perennial conks with a "hoof" like appearance—dark and cracked above and tan or ochre below, with small pores. A new hymenium or spore bearing layer is added each year. These are white rotting fungi that |

| | | |
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|  | pear, walnut, oak, sycamore, willow. | are common on various species of hardwoods and softwoods. These cause heart rots on intact trunks. |
| ***Biscogniauxia mediterranea, B. atropunctata***  | Sycamore, oaks, maple, pecan, golden raintree, ash, walnut. | *Biscogniauxia* is an Ascomycete fungus that resides in trees as a latent infection not causing symptoms. When trees are stressed by drought, the fungus invades the sapwood, decaying it extensively and cutting water supplies to the canopy. Fruiting bodies are long sheets of charcoal-like stroma that emerge through and from under the bark of affected hardwoods. Conidia proceed the dark charcoal sexual fruiting bodies. |
| ***Annulohypoxylon* spp.**  | Coast live oak, maple, alder, birch, apple, cottonwood, willow, elm, persimmon, mountain lilac. | *Annulohypoxylon* spp. are in the same group as *Biscogniauxia* but fruiting bodies form on the surface of bark in a concentric- or globe-shaped stroma. They only form on dead wood and indicate that the sap rot fungus has killed that portion of the standing tree. The young fruiting bodies are cream-colored and covered in asexual spores called conidia in early summer or late spring. These later darken into structures that contain the sexual ascospores. |
| ***Oxyporus latemarginatus***  | Victorian box, coast live oak, maples, albizia, citrus, ash, locust, walnut, American sweetgum, magnolia, apple, cottonwood, peach, plum, apricot, willow, and elm. | This fungus produces its white poroid fruiting body covering the lower portions of trees sometimes spreading over soil around the root collar. It is annual and disappears a few weeks after its occurrence. It is a potent sap rot fungus that leads to extensive white rot, sometimes colonizing the entire trunk. |

WARNING ON THE USE OF PESTICIDES

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## PUBLICATION INFORMATION

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# Bulletin #8: Don't Top Trees!

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The sight of topped trees is all too common in the communities and along the roadways of America – trunks with stubby limbs standing naked in the landscape, trees stripped of all dignity and grace.

Trees are often topped because they grow into utility wires, interfere with views or solar collectors, or simply grow so large that they worry the landowner. But, as one arborist has said, "Topping is the absolute worst thing you can do for the health of your tree."

## Why NOT to "Top:" 8 Good Reasons

1. **Starvation:** Topping removes so much of the tree's leafy crown that it dangerously reduces the tree's food-making ability.
2. **Shock:** By removing the protective cover of the tree's canopy, bark tissue is exposed to the direct rays of the sun. The resultant scalding can cause the tree's death.
3. **Insects and Disease:** The exposed ends of topped limbs are highly vulnerable to insect invasion or decay fungi spores.

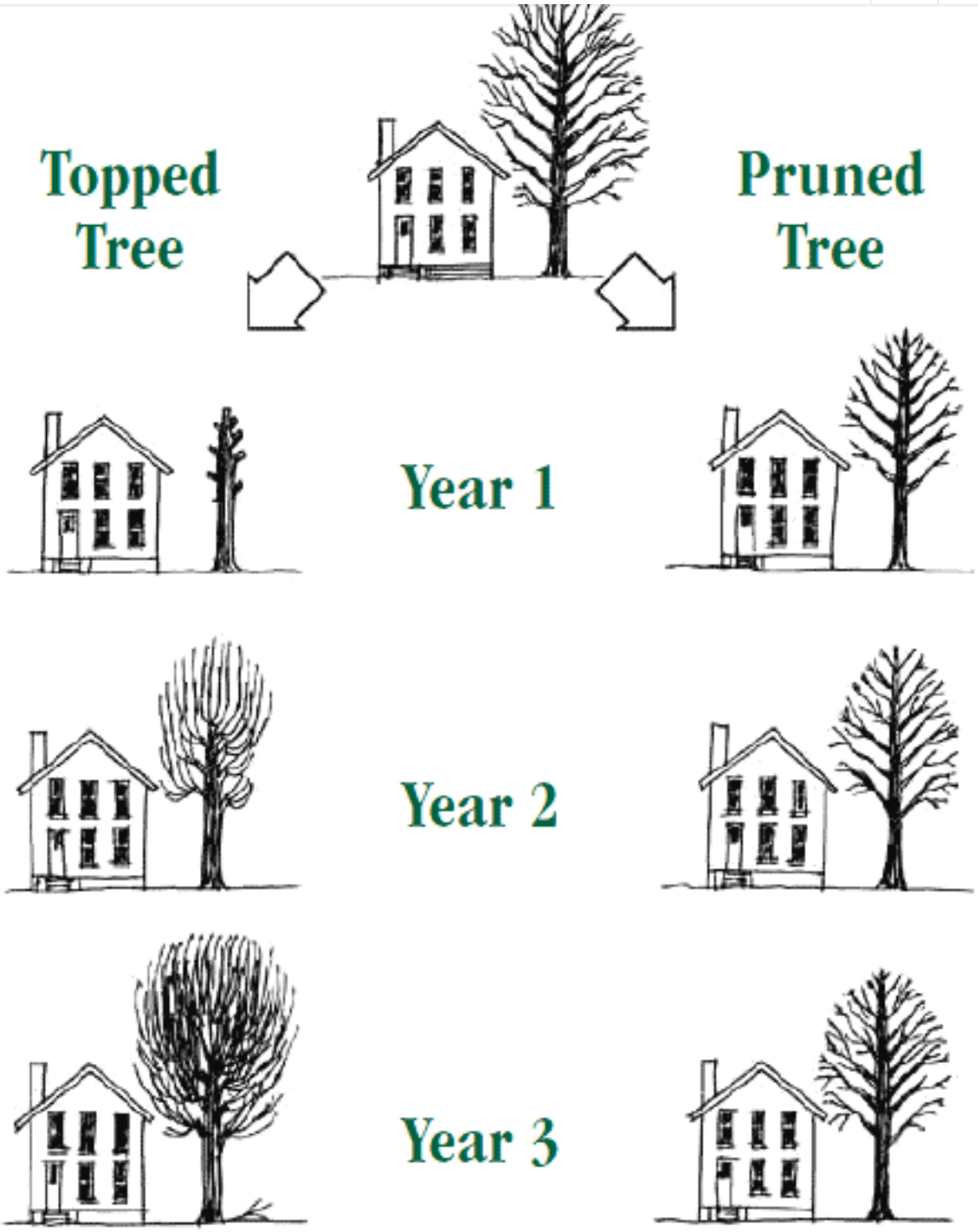
and more liable to break from snow or ice weight.

5. **Rapid New Growth:** Instead of controlling the height and spread of the tree, topping has the opposite effect. New branches are more numerous and often grow higher than before.
6. **Tree Death:** Some tree species can't tolerate major branch loss and still survive. At best, they remain weak and disease-prone.
7. **Ugliness:** A topped tree is a disfigured tree. Even with new growth it never regains the grace and character of its species.

8. **Cost:** The true cost of topping is often hidden – lower property values, expense of removal and replacement if the tree dies.

## Proper Pruning—The Alternative to Topping

When a decision is made to reduce the size of an older tree, it can be topped, or it can be pruned properly. Although the speed and nature of re-growth will depend on species and local factors, any comparison between irresponsible topping and competent pruning will be dramatic. Qualified arborists use 'crown reduction' to control height when necessary. Selected limbs are removed at their junction with the trunk or a limb at least 1/3 the diameter of the removed limb.




**Year 1:** The topped tree is an ugly stub and a remnant of a once lovely tree. If pruned properly, the tree's size is reduced but form and beauty are retained.

**Year 3:** Vigorous sprouts have sprung out of the topped tree in large numbers and are growing with abnormal rapidity. The pruned tree adds growth, but it does so more slowly and distributes

**Year 6:** In a relatively short time, the topped tree is as tall – and far bushier and more dangerous – than it was to begin with. The properly pruned tree is safer, more beautiful, and its size is better controlled.

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ATTACHMENT H

CITY OF MENLO PARK

## MEMORANDUM

**Date:** 12/5/2019
**To:** Environmental Quality Commissioners
**From:** Christian Bonner, City Arborist
**Re:** City Arborist tree risk assessment

In response to an application for a permit to remove one blue gum Eucalyptus tree located at 614 Laurel Avenue in the City of Menlo Park, I visited the site and inspected the tree on October 3, 2019 and again on November 12, 2019. Based on a Level 2 visual inspection, my findings were the following:

### Site assessment

- The subject tree is located at the north east corner of the residential lot at subject address. The trunk of the tree is abutting a wood fence and growing into the gravel and dirt alley way, which is in the rear of property accessible from Walnut Street (Attachment D).
- There was no visible evidence of damage to adjacent structures at time of inspection. No evidence documenting structural property damage was submitted by applicant.
- There was no visible evidence of site changes that had recently occurred at the time of inspection and the grade is level. However, City building permit records show that a previously existing garage and cottage was demolished and rebuild at an accessory dwelling unit (ADU) in 2014.
- The prevailing wind is from the northwest with no adjacent trees or structures providing significant protection to the tree crown from wind loading.

### Tree health and species profile

- The subject tree is a blue gum eucalyptus (*Eucalyptus* globulus) is in fair condition with an estimated 75 percent of its foliage being healthy at the time of inspection.
- Dried fungal fruiting bodies, or conks, from the western sulphur fungus (*Laetiporus* sp.) were observed and documented on the base of the trunk on the south side of the tree (Attachment E). Sulphur fungus is a type of brown rot, which is known to cause significant wood strength loss. The presence of conks is a positive indicator of internal decay at the base of the trunk, likely indicating widespread infection and wood strength loss (Attachment F).
- Tree vigor (growth rate) is normal for the age and species at the time of inspection. Eucalyptus are typically one of the fastest growing trees in cultivation.
- The estimated age of the tree is approximately 70 to 80 years old based on the age of the home located on the property and the neighborhood was developed in the 1940s. Eucalyptus commonly grow over 150 years in age. However, in cultivation their lifespan can be greatly diminished.

**Tree defects and conditions affecting the likelihood of failure**

- There are at least three main lateral limbs with narrow unions of attachment to the main trunk. All of the main unions have evidence of included bark, which is where bark becomes embedded at the point of a narrow attachment of two or more stems. Included bark typically does not have the same amount of holding tissue as a union and is considered to be a type of structural defect. This can lead to the likelihood of failure due to weak and under-supported branch angles (Harris, 1999).
- Most of the main lateral limbs had been previously topped. Topping is a term used to describe the arbitrary cutting of main lateral limbs along the branch beyond the attachment to the main trunk or parent stem. This method is known to cause the following negative impacts to tree health and structure: increase in sun scald (similar to a sunburn), reduce the ability to recovery from infections and decay, and increases vigorous regrowth of watersprouts or suckers. These new growth from the topping are weakly attached to the original parent stem and are therefore more likely to fail (Attachment G).
- The canopy of the tree was dense due to the numerous suckers and watersprouts growth from previous topping cuts and are heavily weighted from the main lateral stems.
- The recent failure of a lateral limb (approximately eight to nine inches in diameter) occurred on the north side of the crown, resulting to damaging a wooden fence (Attachment H).
- There is positive indication of internal brown rot decay at the base of the tree trunk exhibited by the presence of conks at the time of inspection. The base of the trunk is often subject to the most significant forces of loading from gravity and wind. Brown rots are known to significantly decrease wood strength early on in the decay process. They have a more significant impact on degrading cellulose and hemicellulos components of wood. These structures provide the strength and flexibility which make wood more resilient to the lateral, torsional, and sheer forces associated with wind loading. When degraded in this way, wood is made more brittle with an increased likelihood of failure in wind loading events.

**Load factors**

- The height of the eucalyptus is approximately 85 to 90 feet with a crown spread of approximately 50 to 60 feet wide making the crown size large relative to other trees in the area.
- Heavy end weight on main lateral stems creates a disproportion load on the limbs and point of attachment where they are approximately fifteen to twenty-five inches in diameter.
- Seasonal rains with high winds are common in the area from October to April with an average annual rainfall of 16 inches (NOAA).
- The overall crown of the tree is relatively symmetrical with a live crown ratio (LCR) estimated to be approximately 76 percent. LCR is the ratio of the total length of the living foliage and limbs in the crown to total tree height. A higher LCR is believed to dampen the force of wind as the lateral branches and foliage intercept and

dissipate the wind force throughout a larger area of the crown and thereby reduce loading on trunk, main lateral limbs, and their unions.

- Typically a LCR of less than one third is considered to have an increased likelihood of failure.
- The prevailing wind is from the northwest. There are no adjacent trees or structures on the windward side of the tree providing significant protection to the tree crown from wind loading.

**Likelihood of failure**

The likelihood of failure is the potential for a tree or limb to fail within a specified time frame based on the species, defect, anticipated loads and response growth is. The time frame for this report is six months. The ISA risk categorization system rates likelihood of failure as improbable, possible, probable, or imminent.

- The likelihood of failure of the main stems with bark inclusions and heavy end weight was determined to be **Probable.** Probable is defined as a failure is expected under normal weather conditions within a given time frame (Dunster, 2013).
- The likelihood of the tree trunk failure due to brown rot infection is **Possible**. Possible is defined as a failure could occur, but is unlikely during normal weather conditions within a given time frame (Dunster, 2013).
- The likelihood of failure of the weakly attached suckers and sprouts is **Probable**.

**Target assessment**

Targets are people and property that have the potential to be impacted in the event of tree or limb failure within the target zone. The target zone in this case is a 90 feet radius area around the tree, which approximately equivalent to the tree height. The targets identified have the potential to have greater than minor damage occur if one or more of the tree parts (hazards) were to fail include the following:

- There is a one story accessory dwelling unit (ADU), which is approximately five feet to the northwest of the trunk and a one story garage at 637 Central Avenue is approximately 20 feet the northeast on the far side of the alley way.
- There are vehicles parked outside the garage in the backyard of 637 Central approximately 30 to 35 feet to the northwest of the tree.
- There are two frangible storage sheds located on the neighboring property to the north at 618 Laurel Avenue, which are located approximately 30 to 40 feet from the tree.
- There is infrequent pedestrian and vehicular traffic in alley way.

**Occupancy Rates**

- The duration of time that a target is located within a target zone is the occupancy rate. Rates are classified by the International Society of Arboriculture (ISA) as constant, frequent, occasional, or rare. The occupancy rates and descriptions for specified targets shown in Table 1.

| Table 1: Occupancy rates | | |
|---|---|---|
| **Target** | **Description** | **Occupancy rate** |
| ADU | Target present at all times day and night. | Constant |
| Occupants inside ADU | Target present for most of the day | Frequent |
| 367 Central Ave. garage | Target present at all times day and night | Constant |
| Occupants inside garage | Target is present infrequently or irregularly | Occasional |
| Vehicular traffic alley way and occupants | Target is present infrequently or irregularly | Occasional |
| Vehicular parking in adjacent yards | Target present for most of the day | Frequent |
| Pedestrians and occupants of yard at subject address, neighboring yards and alley way | Target is present infrequently or irregularly | Occasional |

**Target protection, size of defect part, and distance of fall**

The size of the tree part at the point of target impact, the distance of fall and any target protections are considered when determining the consequences of failure (see below). Target protection is anything that would protect the target from impact. For instance, pliable live lateral limbs and foliage provide some protection to a target as they dampen the force of impact from a falling tree trunk. The following target protections were identified to exist for each specified target:

- ADU - live lateral limbs and foliage.
- Occupants inside ADU: **structure**.
- 367 Central Avenue garage: **live lateral limbs and foliage**.
- Occupants inside garage: **structure**
- Vehicular traffic in alley way: **live lateral limbs and foliage**
- Vehicle occupants: **vehicle**
- Vehicular parking in adjacent yards: **live lateral limbs and foliage**
- Pedestrians and occupants of yard at subject address, neighboring yards and alley way: **none**

The size of the defective part was considered as it effects the force of impact. The location of the size of part is evaluated where the likely impact would occur, which is not necessarily where the location of the defect part is in all cases. The following are the estimated sizes of tree parts for each specified target:

- Main lateral stems with bark inclusions and heavy end weight over the ADU, garage, alley way and adjacent yards: approximately fifteen to twenty five inches in diameter
- Tree trunk with brown rot decay over ADU: approximately fifteen inches in diameter
- Tree trunk with brown rot decay over, garage, alley way and adjacent yards: approximately forty five to thirty five inches in diameter.
- Weakly attached suckers and sprouts over ADU, garage, alley way and adjacent

yards: approximately  eight to ten inches in diameter

A falling tree or part will increase in speed and force of impact as it falls. The shorter the distance of fall, the lesser the force of impact. “If the distance from a tree trunk to a well-built, multi-story house is short, a tree that falls may simply lean against the house, causing minor damage.” (Dunster, 2013). The following are the estimated distance of fall for each tree part to specified target:

- Main lateral stems with bark inclusions and heavy end weight over the ADU, garage, alley way and adjacent yards: approximately thirty to thirty five feet distance.
- Tree trunk with brown rot decay over ADU: approximately five to twenty feet distance
- Tree trunk with brown rot decay over, garage, alley way and adjacent yards: approximately five to twenty five feet distance.
- Weakly attached suckers and sprouts over ADU, garage, alley way and adjacent yards: approximately 30 to 60 feet in height

**Likelihood of failure and impact**

Considering both the likelihood of failure and the likelihood of impact, which is effected by the location of the target, direction of fall, target protections (see above), and the occupancy rate. ISA categorizes likelihood of failure and impact as Unlikely, Somewhat likely, Likely, Very Likely. The following matrix is used to consider these factors and determine likelihood of failure and impact. (Dunster, 2013).

**Table 2**

| Likelihood of failure | Likelihood of Impacting Target | | | |
|---|---|---|---|---|
| | Very low | Low | Medium | High |
| Imminent | Unlikely | Somewhat likely | Likely | Very likely |
| Probable | Unlikely | Unlikely | Somewhat likely | Likely |
| Possible | Unlikely | Unlikely | Unlikely | Somewhat likely |
| Improbable | Unlikely | Unlikely | Unlikely | Unlikely |

The following likelihood of failure impacting each specified target was determined using the matrix above:

- Main lateral stems with bark inclusions and heavy end weight over the ADU garage, alley way and adjacent yards: approximately thirty to thirty five feet distance: **Likely**
- Tree trunk with brown rot decay over ADU: approximately five to twenty feet: **Somewhat Likely**
- Tree trunk with brown rot decay over, garage, alley way and adjacent yards: **Unlikely**.
- Weakly attached suckers and sprouts over ADU, garage, alley way and adjacent

yards: **Likely**
- Main lateral stems with bark inclusions and heavy end weight, tree trunk, and weakly attached suckers over occupants of ADU, Garage, vehicles, yard and alley: **Unlikely**

**Consequences of Failure**
The consequences of failure are ranked by the ISA as Negligible, Minor, Significant, and Severe. They are defined as follows:
- Negligible – consequences that involve low-value property damage or disruption that can be replaced or repaired; they do not involve personal injury.
- Minor – consequences that involve low to moderate property damage, small disruptions to traffic, or a communication utility or a very minor injury.
- Significant - consequences are that involve property damage of moderate to high value, considerable disruption, or personal injury.
- Severe – consequences are those that could involve serious personal injury or death, damage to high value property, or disruption of important activities. (Dunster, 2013)

Using these descriptions, the following are the consequences of failure and description for each of the specified targets are estimated taking into account target protections, part size and distance of fall:
- ADU subject address: **Significant**.
- Occupants inside ADU: **Significant**.
- 367 Central Avenue garage: **Significant**.
- Occupants inside garage: **Significant**
- Vehicular traffic in alley way: **Significant**
- Vehicle occupants: **Significant**
- Vehicular parking in alley way and adjacent yards: **Significant**
- Occupants of yard at subject address, neighboring yards and alley way: **Severe**

**Risk Rating**
The risk rating is the combination of the likelihood of the tree or part falling and impacting a target and the severity of the consequences. Using the matrix below the following Risk Ratings were estimated for all parts and target was found to be Moderate. (Dunster, 2013).

| Table 3 | | | | |
|---|---|---|---|---|
| **Likelihood of Failure & Impact** | **Consequences of Failure** | | | |
| | **Negligible** | **Minor** | **Significant** | **Severe** |
| Very likely | Low | Moderate | High | Extreme |
| Likely | Low | Moderate | High | High |
| Somewhat likely | Low | Low | Moderate | Moderate |
| Unlikely | Low | Low | Low | Low |

**Overall Risk Rating**
The overall risk rating is taken from the highest risk rating of any tree part and target. In this case, the overall risk rating for the subject tree is **High**.

**Mitigation Measures**
An alternative mitigation measure to decrease the residual risk to low could include the following:

- Aggressive pruning to reduce crown, limb end weight, and thin suckers and sprouts would be in excess of the industry best practice of limiting the pruning of more than 25% of the living foliage in one growing season. Removing a greater percentage of foliage can starve the tree of food, decrease vigor, increase likelihood of pest and disease infection, and increase the rate of disease spread. Trees in less than good health are predisposed to accelerated rate of decline with excessive pruning.

**Recommendation**
My recommendation is to approve the heritage tree removal permit application to authorize the property owner to remove the subject tree, which is determined to be a high risk.

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CITY OF MENLO PARK

## STAFF REPORT

**Environmental Quality Commission**
**Meeting Date:** **12/11/2019**
**Staff Report Number:** **19-013-EQC**

**Regular Business:** **Review and advise on design concepts for the Willow Road and U.S. 101 interchange landscape project to the City Council**

### Recommendation

Staff recommends the Environmental Quality Commission (EQC) review and advise to the City Council a proposed conceptual landscape design for the Willow Road and U.S. 101 interchange.

### Policy Issues

The Willow Road and U.S. 101 interchange project was included in the fiscal year 2012-13 Capital improvement plan and the 2019 City Council work plan. While not a City project, this Caltrans project has significant impacts on Menlo Park. The interchange project has recently completed construction. This report is intended to seek input from the EQC on the proposed landscape design and concepts.

### Background

Caltrans recently completed modification of the interchange at Willow Road and U.S. 101 from its former "full cloverleaf" style to a "partial cloverleaf" style similar to the Marsh Road and U.S. 101 interchange. This eliminated the short merge weaves both on Willow Road and the freeway. The project replaced the existing interchange with a new, wider bridge; adding sidewalks, striped bicycle lanes and separated bicycle lanes on both sides of Willow Road; and adding two signalized intersections. Caltrans began construction in May 2017 and was completed in June 2019.

The recently completed construction project did not include installation of landscaping, which typically occurs as a follow-up project. Therefore, the City has initiated efforts on this follow-up landscaping project that will include a public outreach process and opportunities for community input.

On March 12, the City Council created an ad hoc subcommittee for the Willow Road and U.S. 101 interchange project comprised of Mayor Pro Tem Taylor and Councilmember Carlton. This subcommittee was formed to guide efforts on all aspects of this project and to help keep the community and Council informed on the project's status and explore potential funding sources and options to finance landscaping installation and long-term maintenance. Staff indicated that the EQC would review the concept landscape design at a previous City Council update.

### Analysis

As is typical with a Caltrans construction process, the recently completed construction efforts included only the infrastructure portion of the project. This is typically a more cost effective approach, since designing the landscaping is specialized work and requires the infrastructure (such as irrigation lines, electrical

connections, etc.) to be in place. Therefore, the landscaping design and landscaping construction phases will be performed as a separate follow-up project. Since the landscaping is especially important given the mature trees that were removed as part of the infrastructure construction, City staff has begun working with a landscape architect to move the landscaping project forward to immediately follow construction of the interchange. The area of work proposed is shown in Attachment A.

Staff has been coordinating with Callander Associates, a landscape architectural consultant firm that is experienced with the City of Menlo Park's standards as well as with Caltrans' standards and processes, to prepare several conceptual plans for community and City Council feedback. When the construction of the interchange project began in 2017, City staff received extensive feedback from the community regarding landscaping preferences. As the landscape project began, City staff has utilized the feedback to help form these draft conceptual plans. The range of concepts developed include one plan graphic illustrating a Caltrans standard design (considered the base case) and two plan graphics illustrating enhanced options, with planning-level cost estimates to understand the additional costs required to provide an enhanced design (Attachment B.) The enhanced options provide a range of aesthetic styles (e.g., linear and formal versus curvilinear and naturalized) and density of plantings for consideration. Both enhanced options meet the Caltrans required tree setback of forty-feet from the edge of traveled way and site distance clearances. In addition, the options locate proposed trees outside of zones with degraded soils. Both enhanced options would require financial commitments from the cities of Menlo Park and East Palo Alto to install and maintain the landscaping.

On September 26, City staff and the consultant team presented the conceptual plans to the community at an informational meeting to receive feedback. The community was asked to provide input on the plan options, on potential thematic motifs that could inspire the planting design, and on expected initial tree sizes. The two enhanced concepts presented included a forest inspired concept (Concept A) and a lower height shrub concept (Concept B.) In general, the community supported a "forest"-inspired concept like that shown as Concept Plan A (in Attachment B,) though they wanted to maximize the number of trees in the landscape, even if it meant using smaller-sized trees initially. Redwood trees were strongly preferred. Use of dense plantings and native plants to help screen traffic noise and light were desired. The mini-park, if developed, should have 'usable' amenities such as pathways and seating, in lieu of providing just aesthetic benefits. A few community members suggested working with nonprofit organizations to help the City offset and/or minimize cost. The input and recommendation from EQC will be presented to the City Council for approval of a conceptual landscape design.

**Table 1**

| Phase | Approximate timeline | Anticipated milestone completed |
|---|---|---|
| Interchange construction completed | | June 2019 |
| Identify conceptual design | 4-6 months | Fall 2019 |
| Identify funding sources | 10-12 months | Fall 2020 |
| Prepare detailed design | 10-12 months | Fall 2020 |
| Award contract & construction | 12 months | Fall 2021 |

Based on the feedback received from the community, City staff recommends proceeding with concept plan A, the "forest"-inspired option with a focus on maximizing the number of trees planted within the interchange.

## Impact on City Resources

Depending on the selected design concept, the landscape construction would approximately cost an initial $4 million to $5 million. In addition, ongoing maintenance for the interchange landscaping would cost approximately $120,000 annually. As part of the next design phase of the project staff will be evaluating various sources to fund not only initial construction of the project, but also the ongoing annual maintenance efforts. These sources must include contributions from Caltrans, San Mateo County Transportation Authority, as well as the cities of Menlo Park and East Palo Alto. Additionally, portions of the project fall within the cities of Menlo Park and East Palo Alto right of way, and outside of the State jurisdiction. Funds to install and provide long-term maintenance of landscaping within these areas will directly impact resources from both Menlo Park and East Palo Alto.

## Environmental Review

Environmental clearance for the Willow Road-US 101 Interchange project was obtained by Caltrans November 25, 2013. Landscaping was a part of the overall project, and in fact a required mitigation for environmental clearance.

## Public Notice

Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

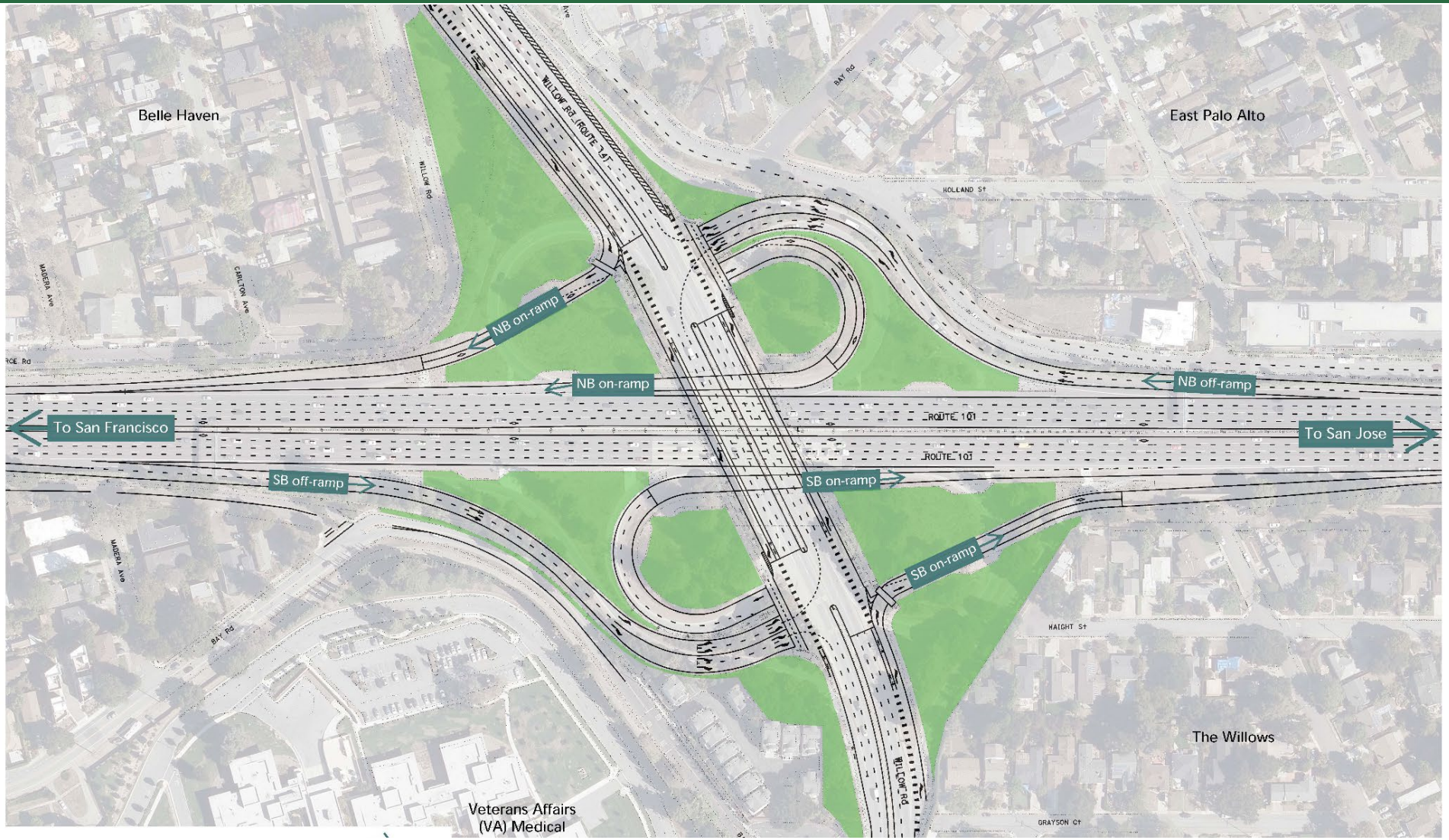
## Attachments

A. Proposed landscape project limits
B. Proposed concept landscape plans

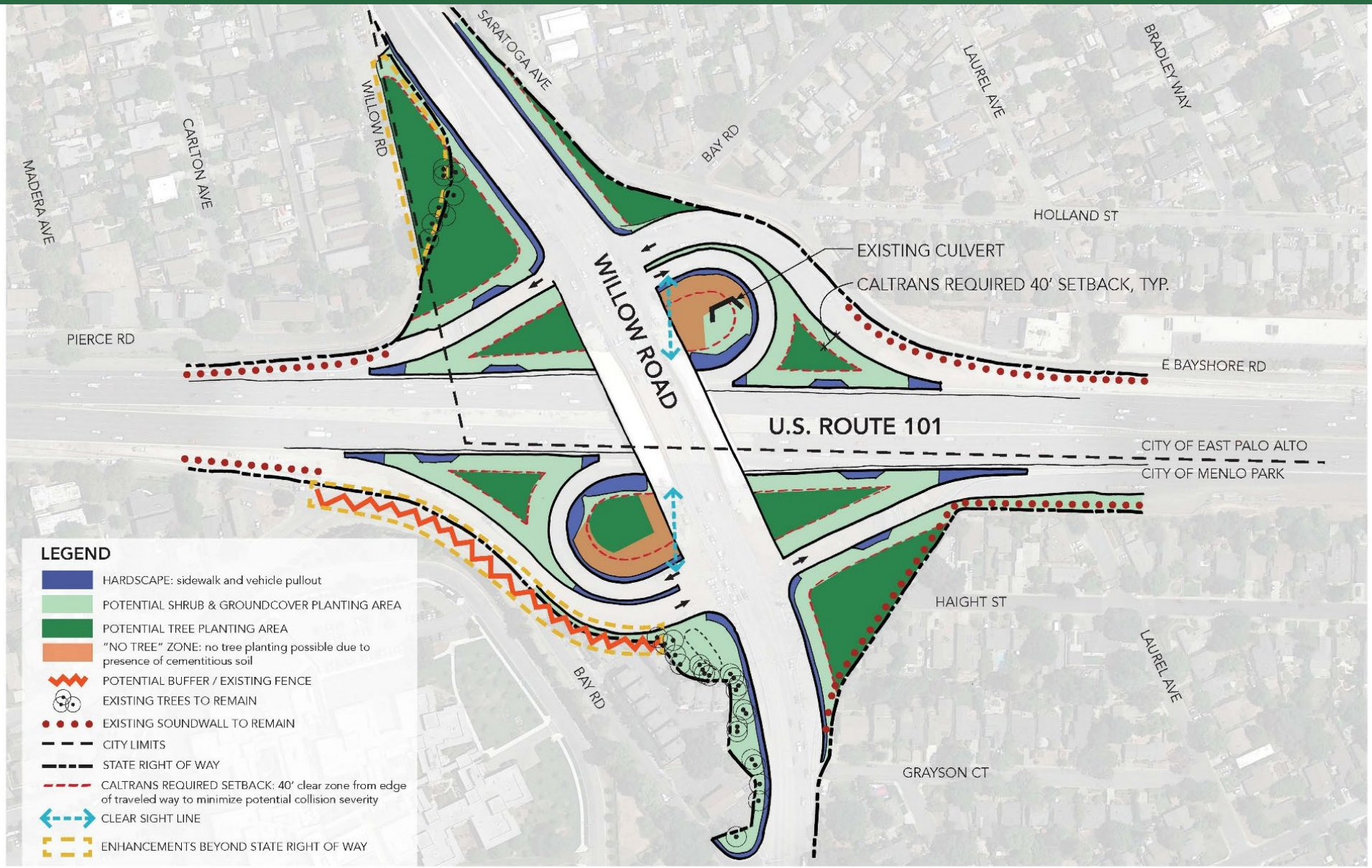
Report prepared by:
Morad Fakhrai, Senior Project Manager

Report reviewed by:
Nicole H. Nagaya, Interim Public Works Director

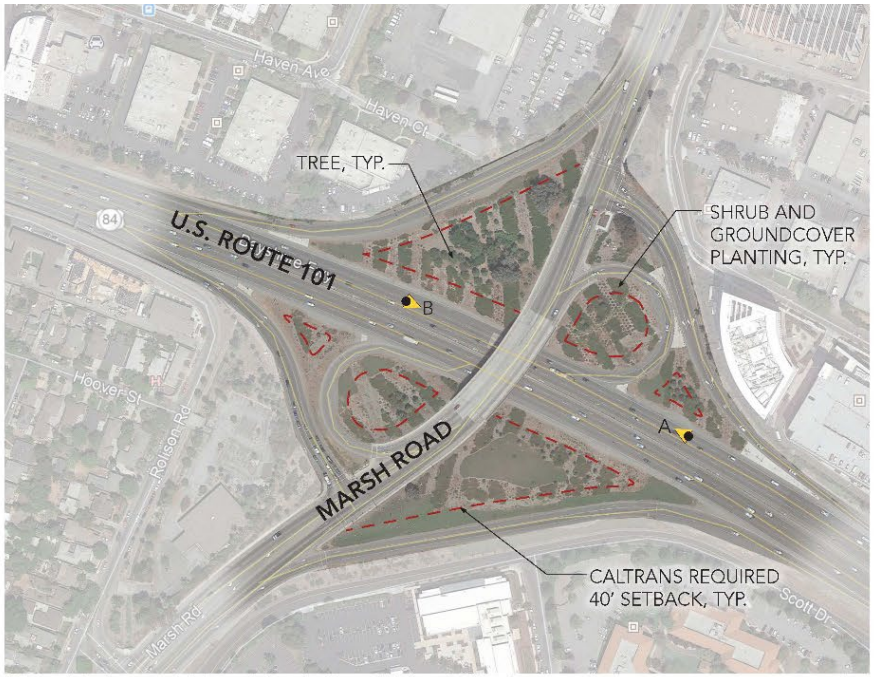
# Project Limits



# Opportunities and Constraints



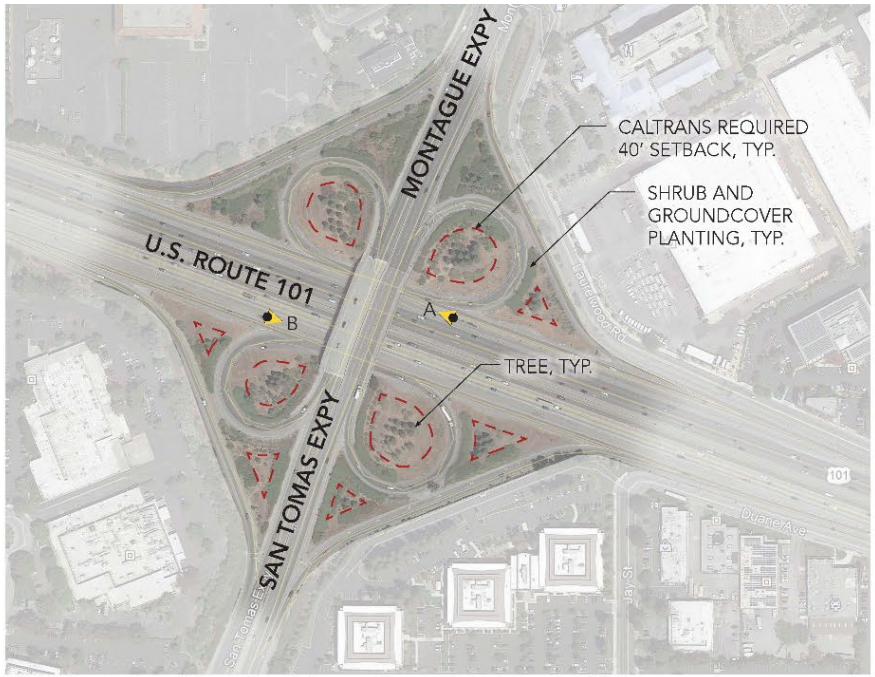
# Caltrans Standard Landscapes




Plan- Highway 101 at Marsh Road, Menlo Park

View A

View B




Plan- Highway 101 at San Tomas Expressway, Santa Clara

View A

View B

# Concept Plan A


**LEGEND**

- EXISTING HARDSCAPE
- TURF
- POTENTIAL SHRUB & GROUNDCOVER PLANTING AREA
- TREE PLANTING, CANOPY (30')
- TREE PLANTING, ACCENT (20')
- "NO TREE" ZONE
- POTENTIAL BUFFER / EXISTING FENCE
- EXISTING TREES TO REMAIN
- EXISTING SOUNDWALL TO REMAIN
- CITY LIMITS
- STATE RIGHT OF WAY
- CALTRANS REQUIRED 40' SETBACK
- ENHANCEMENTS BEYOND STATE RIGHT OF WAY

0' 40' 80' 160'

FOREST-INSPIRED (MATURE SIZE)

NATIVE OAKS

CURVILINEAR FORMS

# Concept Plan B


**LEGEND**

- HARDSCAPE
- TURF
- DECORATIVE GRAVEL SURFACE
- POTENTIAL SHRUB & GROUNDCOVER PLANTING AREA
- TREE PLANTING, CANOPY (30')
- TREE PLANTING, ACCENT (20')
- "NO TREE" ZONE
- POTENTIAL BUFFER / EXISTING FENCE
- EXISTING TREES TO REMAIN
- EXISTING SOUNDWALL TO REMAIN
- CITY LIMITS
- STATE RIGHT OF WAY
- CALTRANS REQUIRED 40' SETBACK
- ENHANCEMENTS BEYOND STATE RIGHT OF WAY

0' 40' 80' 160'

RAIL INSPIRED

LINEAR FORMS

DECORATIVE GRAVEL STRIPS

**MEMORANDUM**

Date: 12/2/2019
To: Environmental Quality Commission
From: Climate action plan subcommittee
Re: CAP Update

The climate action plan (CAP) subcommittee continues to await feedback from Menlo Park's City Council on greenhouse gas emissions targets (GHG) that were reviewed and approved by the Environmental Quality Commission (EQC) at its October meeting. For review, the EQC recommended that City Council adopt the following GHG targets:

- Zero carbon emissions by 2030, achieved through:
  - 90% reduction of $CO_2$ emissions from 2005 levels
  - 10% of $CO_2$ eliminated through direct carbon removal

The CAP subcommittee anticipated feedback on these targets from City Council in November but staff's presentation to Council has been delayed a number of times and is now anticipated to take place on December 10. The subcommittee looks forward to receiving feedback on the proposed targets at that time.

In the meantime, the CAP subcommittee has continued its research, currently investigating any potential economic alternatives to aggressively mitigating GHG emissions. Our conclusion is that If the City fails to set and achieve aggressive GHG targets and/or also fails to provide appropriate leadership to other cities, such that global temperatures surpass 2°C, the consequences to Menlo Park will be catastrophic. In that scenario, sea level would be expected to rise at least 3 feet by as early as the 2060s, inundating the Belle Haven neighborhood and the approach to the Dumbarton Bridge per the map models below.


TODAY


Source: http://data.pointblue.org/apps/ocof/cms/index.php?page=flood-map

YEAR: 2060-2100

the Bay is projected to rise 3.3 feet

Sea level rise projections are taken from Rising Seas in California, an Update on Sea-Level Rise Science, April 2017, by the California Ocean Protection Council Science Advisory Team, http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf and those figures increase with every report update.

Not only will residents and property owners in Belle Haven lose their property to the Bay, but all residents of Menlo Park and neighboring cities will be affected as critical roadways and other infrastructure becomes unusable.


Source: http://data.pointblue.org/apps/ocof/cms/index.php?page=flood-map

# YEAR: 2060-2100

## route 101 projected to be under water

**Solutions**

At this time, the CAP subcommittee has identified three potential approaches to address these catastrophic circumstances facing Menlo Park.

**Option #1: Managed retreat**

One option would be for the City to allow the Bay waters to flood at-risk property valued at over $1 billion[1] along Menlo Park's bay front. Thousands of homeowners, tens of thousands of employees, numerous commercial property owners and businesses all would be adversely affected.

**Option #2: Build sea walls or levees**

Another option would be for the City to build sea walls or levees to protect at-risk property. That approach would require coordination with neighboring cities and this CAP subcommittee estimates this

[1] According to County of San Mateo Sea Level Rise Vulnerability Assessment, March 2018 (https://seachangesmc.org/wp-content/uploads/2018/03/2018-03-12_SLR_VA_Report_2.2018_WEB_FINAL.pdf), p. 139, sea level rise of 3.3 feet will inundate Menlo Park real estate valued at $1.288 billion and a rise of 6.6 feet will inundate real estate worth $1.621 billion.

could cost the City $3 billion dollars. Cost projections have not yet been conducted by the City. In the absence of concrete estimates, members of the CAP subcommittee consulted a 2017 study conducted by UC Berkeley researchers and published in The Journal of Marine Science and Engineering entitled "Choosing a Future Shoreline for the San Francisco Bay: Strategic Coastal Adaptation Insights from Cost Estimation" (https://www.mdpi.com/2077-1312/5/3/42/htm). That study estimates that it will cost between $24 billion and $450 billion to build sea walls and levees around the entire San Francisco Bay. Cost estimates vary depending on the sea level those structures are built to withstand and the number of miles of walls and levees built. If global temperatures increase past 2°C, sea level rise will go well beyond the 3 feet assumed in the maps above and in that case, it will be prudent to construct sea walls and levees for at least 6 feet of sea level rise. Below is a diagram from the report depicting the enormous amount of land required to build levees of various heights.

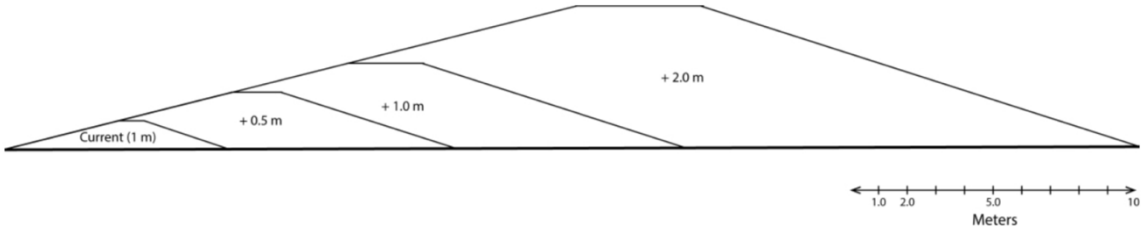



**Figure 2.** Cross-section of a levee depicted under different sea level rise scenarios.

Members of the CAP subcommittee met briefly with staff from the San Mateo County Office of Sustainability to see if the County could verify our $3 billion cost estimate for building sea walls and levees in Menlo Park. The County generally assumes adaptation costs will be 7 times the value of the affected property. Assuming that over a $1 billion in Menlo Park real estate is under threat, that would suggest that adaptation costs will be on the order of $7 billion for the City.

There is one important consideration to take into account when weighing this option and that is: levees and sea walls can fail, as we saw in New Orleans during hurricane Katrina. That means lives and property will still be at risk, even if we spend the billions of dollars required by this approach.

**Option #3: Mitigate climate change through aggressive GHG reductions and leadership**
The final option requires immediate action but would likely save the City and its residents billions of dollars. It is by far the most fiscally conservative option of the three, although it may not appear so, because the fiscal outlays required to execute it must happen immediately and will seem large compared to what has been spent to date on climate change mitigation.

In order to stop the global effects of climate change, the City should:

- Adopt a GHG target of Zero Carbon Emissions by 2030
- Swiftly implement policies, programs and the appropriate staffing to achieve that target
- Lead other cities to adopt and achieve similar goals so that global temperature rise of over 2°C is avoided

Assuming that our next best alternative to this approach is to build sea walls and levees at a cost of $3-7 billion, as rational actors, we should be willing to spend up to that amount on mitigation efforts. Although the exact cost of reducing Menlo Park's carbon emissions to zero has not yet been calculated,

an upper bound of $20,000 per household[2] or $200-300 million in total over the ten year period proposed would be sufficient. Note that this estimate does not reflect the direct cost to the city of Menlo Park, but instead the total cost of replacing all fossil fuel infrastructure in Menlo Park, most of the burden of which would be borne by residents. Given that these estimated mitigation costs are less than 1/10$^{th}$ the cost of adaption measures such as sea walls and levees, mitigation is clearly the more fiscally conservative approach.

There is another possible benefit to the City of prioritizing mitigation efforts over inaction, followed by costly adaptation measures. By proactively addressing climate change through mitigation of greenhouse gases and leadership, the City demonstrates a willingness to do everything within its power to mitigate climate change and thereby positions itself favorably to receive federal or state assistance, should funding for adaptation costs be necessary in the coming decades. In this way, the boldest of mitigation plans may pay for itself many times over.

**Note on Execution**
In order to achieve Zero Carbon Emissions by 2030, the EQC has recommended 10 specific strategies:

1. 100% carbon-free electricity
2. Completely electrify existing buildings
3. Reduce vehicle miles traveled (VMT)
4. Electrify vehicles, reduce gasoline sales & increase EV infrastructure
5. Reduce carbon emissions from construction
6. Electrify all municipal buildings and fleet vehicles
7. Reduce emissions from waste through Zero Waste Plan and catalyze a circular economy
8. Avoid installing new appliances/structures that will be abandoned due to climate change
9. Sequester residual carbon emissions though direct carbon sinks
10. Prepare the City for climate change through adaptation measures

Add to that a leadership strategy, whereby the City invests in sharing its efforts with other cities so that they can replicate our approaches, and it's clear that successful climate change mitigation will require a Herculean effort by the City. Success will require:

- Clear leadership of: residents, employers, City commissions and City staff
- A way to shed or de-prioritize activities that are not directly supporting climate change mitigation
- High levels of focus and communication
- Commitment to bold climate goals by 100%
- The ability for City to forge partnerships with other organizations, cities and businesses whose goals are complimentary

**Note on Timing**
Finally, every day that the City delays implementing a robust Climate Action and Adaptation Plan (CAAP), City residents spend an estimated $300,000 on equipment that puts our climate goals at risk: an estimated 9 cars, 2 gas furnaces and 3 gas water heaters, all of which may be banned in the City before

[2] This is a rough estimate calculated as follows: $5,000 (premium for 2 electric vehicles vs. gas cars) + $2,000 (EV home charger) + $8,000 for electric heat pump (premium to replace gas furnace) + $2,000 for heat pump water heater (premium to replace gas hot water heater) + $3,000 for induction stove (to replace gas stove) = $20,000. These are estimates and should be verified. Actual figures are likely to be lower, as installation costs for heat pumps and EV equipment will decrease over time due to scaling effects.

their useful life expires so that the City can meet its climate goals.  This is wasteful and demands swift creation and implementation of a bold CAAP.