

Environmental Quality Commission



REGULAR MEETING AGENDA

Date: 3/20/2024
Time: 6:00 p.m.
Location: [Zoom.us/join](https://zoom.us/join) – ID# 879 3070 9093 and
City Hall Downtown Conference Room, 1st Floor
701 Laurel St., Menlo Park, CA 94025

Members of the public can listen to the meeting and participate using the following methods.

- How to participate in the meeting
 - Access the meeting, in-person, at the Downtown Conference Room
 - Access the meeting real-time online at:
[Zoom.us/join](https://zoom.us/join) –Meeting ID 879 3070 9093
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(669) 900-6833
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Press *9 to raise hand to speak

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Regular Session

A. Call To Order

B. Roll Call – Chair Hedley, Kissel, Lin, McKenna, Pelegri-Llopart, Vice Chair Schmidt

C. Public Comment

Under “Public Comment,” the public may address the Commission on any subject not listed on the agenda. Each speaker may address the Commission once under public comment for a limit of three minutes. You are not required to provide your name or City of residence, but it is helpful. The Commission cannot act on items not listed on the agenda and, therefore, the Commission cannot respond to non-agenda issues brought up under public comment other than to provide general information.

D. Regular Business

- D1. Approve the February 21, 2024 Environmental Quality Commission meeting minutes ([Attachment](#))
- D2. Deny the appeal and uphold staff’s decision to approve the permit application to remove a coast live oak at 219 Durham St. ([Staff Report #24-001-EQC](#)) ([Presentation](#))

- D3. Review and discuss the electrification permit fee waiver and permit streamlining ([Presentation](#))
- D4. Review and discuss recommendations from the Building Decarbonization Ad Hoc Subcommittee on the 2025 – 2030 scope of work for CAP strategy No. 1: electrify 95 %of existing buildings ([Presentation](#))

E. Reports and Announcements

- E1. Reports and announcements from staff and Commissioners

F. 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 before, the public hearing.

Any writing that is distributed to a majority of the Commission by any person in connection with an agenda item is a public record (subject to any exemption under the Public Records Act) and is available by request by emailing the city clerk at jaherren@menlopark.gov. Persons with disabilities, who require auxiliary aids or services in attending or participating in Commission meetings, may call the City Clerk’s Office at 650-330-6620.

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REGULAR MEETING MINUTES – DRAFT

Date: 2/21/2024
Time: 6:00 p.m.
Location: Teleconference and
City Hall Downtown Conference Room, 1st Floor
701 Laurel St., Menlo Park. CA 94025

A. Call To Order

Vice Chair Schmidt called the meeting to order at 6:04 p.m.

B. Roll Call

Present: Kissel (arrived at 6:05 p.m.), Lin, McKenna, Pelegri-Llopart, Schmidt
Absent: Hedley
Staff: Management Analyst II Ori Paz, Management Analyst II Liz Tapia

C. Public Comment

- Menlo Spark representative Brian Schmidt spoke about the organization, Nature Bloomers and their work in Belle Haven.

D. Regular Business

D1. Approve the January 31, 2024 Environmental Quality Commission meeting minutes (Attachment)

ACTION: Motion and second (McKenna/ Pelegri-Llopart), to approve the January 31, 2024 Environmental Quality Commission meeting minutes, passed 5-0-1 (Hedley absent).

D2. Receive an update on the Urban Forest Plan progress (Presentation)

Vice Chair Schmidt made the presentation.

- Arlene Nunez Garcia spoke on concerns related to staff capacity and project timeline.
- Pam Jones spoke on concerns related to preserving existing trees and finding space for new trees.
- Scott Marshall spoke in support of the Urban Forest Plan.

The Commission discussed the Urban Forest Plan tree maintenance, coverage area, canopy assessment, community engagement, importance of preserving existing trees, the CALFIRE grant application, and Urban Forest Plan cost.

D3. Review and discuss recommendations from the EV Ad Hoc Subcommittee on the 2025 – 2030 scope of work for CAP strategy No. 2 and No. 3 (Attachment)

Vice Chair Schmidt introduced the item.

Vice Chair Schmidt gave the presentation.

The Commission discussed reach code recommendation and priorities for EV (electric vehicle) charging.

ACTION: Motion and second (Kissel/ McKenna), to adopt recommendations from the EV Ad Hoc Subcommittee with the additional recommendation to prioritize and evaluate San Jose’s EV charging reach code as a model for Menlo Park, passed 5-0-0 (Hedley absent).

ACTION: Motion and second (Schmidt/ Pelegri-Llopart), to dissolve the EV Ad Hoc Subcommittee, passed 5-0-1 (Hedley absent).

E. Reports and Announcements

E1. Reports and announcements from staff and Commissioners

Management Analyst Ori Paz reported out on Climate Action Plan (CAP) No. 5 progress, EV charging, solar for public buildings, building electrification, Peninsula Clean Energy partnership, Telsa pilot program and Love Our Earth Festival.

Management Analyst Liz Tapia reported out on the zero emission landscaping equipment rebate program launching April 1.

Commissioner Pelegri-Llopart reported out on the Peninsula Clean Energy board meeting March 22.

Commissioner McKenna reported that the Building Decarbonization subcommittee would present their recommendations at the next Environmental Quality Commission meeting.

Vice Chair Schmidt reported that the CAP No. 6 Climate Adaptation subcommittee would present their recommendations at the April Environmental Quality Commission meeting.

Commissioner Kissel spoke on promoting electrification in response to rising PG&E prices.

Vice Chair Schmidt spoke on the City Council prioritization meeting on March 2.

F. Adjournment

Vice Chair Schmidt adjourned the meeting at 7:09 p.m.

Liz Tapia, Management Analyst II

CAP 2 & 3 - Integrated Recommendations

- 1. Focus on increasing EV charging in apartments (especially Prioritize larger complexes), small businesses, and city-owned buildings through partnerships, policy, and programs**
 - a. Create an inventory of installation opportunities in current buildings and future developments
 - b. Develop dashboard to show progress, including tracking EVs by income and charging availability
 - c. Partner with public agencies and private property owners to install EV charging
 - d. Focus on private residences after completing target group above and utilizing lessons learned
 - e. Explore incentive-based rules (e.g. direct install programs) and reach codes for existing buildings
 - f. For new construction, evaluate San Jose's EV charging reach code as a model for Menlo Park

- 2. Focus on EV charging, not EV purchases**
 - a. Leverage partners who are already promoting EVs widely to prompt resident EV purchases
 - b. Focus on L1 & L2 chargers, not DC Fast Chargers. Evaluate future tech as it evolves / can scale
 - c. Consider removing other fees from city-owned charging and source alternative funding to support operation, maintenance, and additional chargers

- 3. Focus on informing stakeholders of current incentives and benefits**
 - a. Create education and outreach campaign on EVs, affordability, and emphasize current incentives
 - b. Find potential partners for L1 & L2 charging
 - c. Aggregate funding for EV charging and utilize a wider variety of grants from federal, state, local, and utility, especially for low-income housing



STAFF REPORT

Environmental Quality Commission

Meeting Date: 3/20/2024
Staff Report Number: 24-001-EQC

Regular Business: Deny the appeal and uphold staff’s decision to approve the permit application to remove a coast live oak at 219 Durham St.

Recommendation

Staff recommends the Environmental Quality Commission (EQC) deny the appeal and uphold staff’s decision to approve the permit application to remove a coast live oak at 219 Durham St.

Policy Issues

Menlo Park Municipal Code Section 13.24.060 Heritage Trees, Appeals provides the framework for an appeal process. Under Criterion 5: Development, the permit applicant or any Menlo Park resident may appeal a heritage tree permit decision to the EQC. Heritage tree removal decisions made by staff, the EQC, or City Council must be related to the decision-making criteria outlined in Section 13.24.050 of the Municipal Code.

Background

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

- Protect and preserve the scenic beauty and natural environment;
- Prevent erosion of topsoil and sedimentation in waterways;
- Encourage quality development;
- Provide shade and wildlife habitat;
- Reduce air pollutants; and
- 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 by the size of the trunk as outlined in Table 1 or groups of trees, specifically designated by the City Council.

Table 1: Definition of a heritage tree		
Tree species	Trunk circumference (inches)	Trunk diameter (inches)
Any tree other than oaks	47.1 or more	15 or more
Any oak tree native to California	31.4 or more	10 or more

On Nov. 21, 2023, the applicant submitted a request for a use permit to demolish an existing single-story,

single-family residence and detached accessory building and construct a new two-story, single-family residence on a substandard lot with regard to minimum lot width in the R-1-U (Single Family Urban Residential) zoning district. The proposed project includes an attached Accessory Dwelling Unit (ADU), which is a permitted use and not subject to discretionary review.

On Jan. 10, the applicant for 219 Durham St. submitted a heritage tree removal permit application (Attachment A) for the removal of one coast live oak (T2). The applicant’s project arborist provided the tree inventory as listed in Table 2.

Table 2: Tree inventory			
Tree number	Tree species	Trunk diameter	Recommendation
T1	Coast live oak	20.5 inches	Preserve
T2	Coast live oak	9.5 inches	Remove
T3	Japanese loquat	20 inches	Preserve

On Jan. 18, the city arborist reviewed the permit application and visited the site to measure the trunk diameter of coast live oak T2. The coast live oak tree had a trunk diameter of 10 inches, making it large enough to be considered a protected heritage tree. The city arborist informed the applicant about the tree's protected status and let them know that they needed to submit a completed development-based heritage tree removal permit application to propose the tree for removal.

On Jan. 24, the applicant submitted the missing alternative design and cost analysis, completing the application. The following day, Jan. 25, the city arborist reviewed the resubmitted application and determined that it met all of the city's requirements for development-based tree removal. The arborist approved the application and initiated the public appeal process.

In February, a Menlo Park resident submitted an appeal form (Attachment B) to city staff to preserve the native coast live oak with an alternative to prune the canopy and to change the replacement tree species from a Chinese pistache to a native tree species.

On Feb. 21, the applicant revised the landscape plan to plant a coast live oak instead of a Chinese pistache and plant three more *Pittosporum tenuifolium*.

Analysis

Menlo Park Municipal Code Section 13.24.050 (Attachment C) outlines a decision making removal criteria for city staff to determine if there is good cause for removal. Table 3 summarizes the criteria.

Table 3: Heritage tree removal criteria	
Removal criteria	Description
Criterion 1: Death	The heritage tree is dead
Criterion 2: Tree risk rating	The condition of the heritage tree poses a high or extreme risk rating.
Criterion 3: Tree health rating	The heritage tree is (a) dying or has a severe disease, pest infestation, intolerance to adverse site conditions, or (b) likely to die within a year.

Criterion 4: Species	The heritage tree has been designated as invasive or low species desirability.
Criterion 5: Development	The heritage tree interferes with (a) proposed development, repair, alteration, or improvement of a site or (b) the heritage tree is causing/contributing to structural damage to a habitable building. There is no financially feasible and reasonable design alternative that would permit preservation of the heritage tree.
Criterion 6: Utility interference	The removal is requested by a utility, public transportation agency, or other governmental agency due to a health or safety risk resulting from the heritage tree's interference with existing or planned public infrastructure. There is no financially feasible and reasonable design alternative that would permit preservation of the heritage tree.

The applicant submitted a heritage tree removal permit application under Criterion 5: Development because the coast live oak (T2) interferes with the proposed new construction. The permit application consists of the following City required documents along with a geotechnical report:

- Complete a heritage tree acknowledgement form;
- Complete an arborist report from a city-approved consulting arborist that is written in the last 12 months;
- A landscape plan or written tree replacement plan equivalent to the tree appraisal value;
- Proposed construction site plans;
- Alternative designs to preserve the tree;
- Cost analysis of an alternative design that preserves the tree in relation to the appraised value of tree(s); and
- Heritage tree and city tree protection specifications for construction for trees being retained on or immediately adjacent to active construction sites.

The project arborist appraised the tree value to be \$1,800. The applicant originally chose to plant one 24-in box Chinese pistache (mitigation value of \$400), one 36-inch box Arbutus Marina (mitigation value of \$1,200), and offset the remaining unmitigated value with an in-lieu fee payment of \$200. After hearing the appellant's concerns about planting non-native tree species, the applicant revised the replacement tree species from a Chinese pistache to a coast live oak.

The tree is proposed for removal primarily due to potential damage to its roots from nearby construction work. The heritage coast live oak is located only three feet from the garage's continuous slab foundation, and a new paved walkway is planned where its trunk is currently located. Even if the roots on the neighbor's side of the tree remain untouched, the clearing, excavation, grading, and compaction in the tree's critical root zone would result in significant loss of essential roots, impacting more than 25% of a tree's total root system. This loss would compromise the tree's structural stability, long-term viability, safety, and ability to remain a valuable asset to the future site. Removal of more than 25% of the tree's root system would result in the loss of stabilizing roots and fine-feeder roots, which are crucial for oxygen, water, and nutrient uptake. Furthermore, the loss of structural roots so close to the trunk would increase the likelihood of the tree uprooting and toppling over.

Even with selective root pruning under the guidance of an arborist, the tree would still experience significant root loss to facilitate construction work. The only way to prevent this amount of root loss is to change the design. However, the applicant has demonstrated that altering the design to enable tree preservation would be financially infeasible and would adversely impact the other, larger native coast live oak (T1) on the

property.

In addition, it is possible that if the tree is retained, it would cause damage to the nearby garage. This is because the coast live oak species has the potential to grow large, with an average trunk diameter of 30-40 inches in Menlo Park at maturity. As the tree grows, its roots may cause damage to the garage's foundation (to be constructed 36 inches away from the edge of the trunk).

The applicant submitted two alternative designs to construct the garage while preserving the heritage oak:

- Installing drilled piers would be less impactful to the tree; however this alternative option costs 500% more than the appraised value of the tree. According to the City's administrative guidelines (Attachment D), an alternative design cost of 140% or more (of the tree appraisal value) is deemed financially infeasible.
- Moving the garage back by approximately 5 feet would save the oak; however this option would compromise the health of a much larger heritage oak (T1, which will not be removed).

An appeal was submitted for the following reasons:

- [The] native heritage oak provides shade and habitat to birds who regularly perch and use the fountain water I provide.
- It is near the fence and could be pruned from the inside to not encroach on the development area, in fact the plan called for replacing not native pittosporum in the same place. No native plants are called for on the plan at all.
- The tree is the only screen from my backyard from the proposed two story house.
- The tree is healthy and showed no distress in the recent storm.
- Menlo Park purposes to value trees, this should be saved and valued.

The appellant provided two alternatives for the applicant to explore: to prune the tree's canopy and to change the replacement tree species to a native one.

According to the zoning code, the City does not regulate privacy screening. However, the applicant revised the landscape plan to plant three more *Pittosporum tenuifolium* along the fence and plant a coast live oak (instead of a Chinese pistache). As a result, there will be five screening trees in total (in front of the corner window on second floor) to provide privacy screening.

Because this permit application is related to a project that requires Planning Commission (PC) review, the EQC shall hear the appeal. According to the Menlo Park Municipal Code Section 13.24.060(c)(3), the role of the EQC is to "only consider removal alternatives/concepts and third-party expert evidence submitted to the city during the review period." Staff recommends the EQC to deny the appeal and uphold staff's decision to approve the heritage tree removal permit application based on the city arborist findings.

If the EQC approves the heritage tree removal, the approval shall be conditioned upon final approval of the project by the PC or City Council, as applicable. After PC makes a final decision on the overall development project that includes the heritage tree removal, any party involved with the EQC appeal may appeal the heritage tree decision to the City Council within 15 days of PC's decision.

If the EQC denies the heritage tree removal, the permit applicant may appeal the decision to the City Council (before PC review) within 15 days of EQC's decision.

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 applicant post an on-site notice and city staff mailed noticed to neighbors who live within 300 yards of the site address on Jan. 29. Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

Attachments

- A. Heritage tree permit application
- B. Heritage tree appeal form
- C. Hyperlink – Municipal Code Chapter 13.24 Heritage Trees:
codepublishing.com/CA/MenloPark/#!/MenloPark13/MenloPark1324.html#13.24
- D. Hyperlink – Heritage tree ordinance administrative guidelines:
menlopark.gov/files/sharedassets/public/v/1/public-works/documents/heritage-trees/heritage-tree-ordinance-administrative-guidelines-final_202009211246068035.pdf

Report prepared by:

Joanna Chen, Management Analyst II

Jillian Keller, City Arborist

Reviewed by:

Azalea Mitch, Public Works Director

HERITAGE TREE REMOVAL PERMIT APPLICATION

Public Works
701 Laurel St., Menlo Park, CA 94025
tel 650-330-6760

ATTACHMENT A



<p>Please have the following documents before submitting an application online through the City's online permit portal:</p> <ul style="list-style-type: none"> ■ Completed and signed version of this form; ■ Obtain an arborist report from a City-approved consulting arborist; and ■ Attach a landscape plan or complete the replacement tree section below. Please refer to heritage tree replacement requirements for a list of appropriate replacement trees and guidelines to estimate the monetary values of replacement trees. ■ Additional documents are required for development-related heritage trees. <p>The online submittal process requires additional contact information and detailed information on each tree proposed for removal. Incomplete applications will not be processed. The form may be signed digitally, or the form may be printed, signed and scanned. If you are signing digitally, please note that the signature should be added last, after all the proposal information has been entered.</p>	
Proposal information	
Applicant:	360 Design Studio, Bahi Oreizy
Property owner:	Bheem Bhatia
Address:	219 Durham Street
Description of proposed removal(s):	Tree T2 is proposed to be removed due to a proposed 2-story new house development. Please see attached supportive document for additional information.
Replacement tree plan	
Planting location:	South-east corner of the lot
Tree species:	Chibnese Pistache
Container size:	24" box/ 25 gallons
In-lieu fee, if applicable:	
Acknowledgements and authorizations	
<ul style="list-style-type: none"> • Tree(s) may not be removed (or pruned over 25%) until the applicant has received a permit approval form, which must be on site for inspection while tree work is performed. • Tree replacement(s) must be planted within 90 days of permit issuance. <p>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.</p> <p>I (we) authorize access and inspection of tree in my (our) absence.</p> <p>By signing this form, the signatory acknowledges they own the property and that the information provided is accurate.</p>	

Bhatia, 8th January '24

 Property owner signature and date

360 Design Studio

Tree Removal Application- additional document (dated Jan 24 2024)

Date: Jan 24th, 2024
To: City of Menlo Park
Permit #: PLN2023-00043
Site location: 219 Durham St., Menlo Park

We would like to propose the removal of Tree T2, prior to the construction of a proposed new 2-story house located on the subject property. This letter is an addendum to a letter submitted on Jan 8, 2024. The purpose of this letter is to provide alternative designs with a financial feasibility analysis.

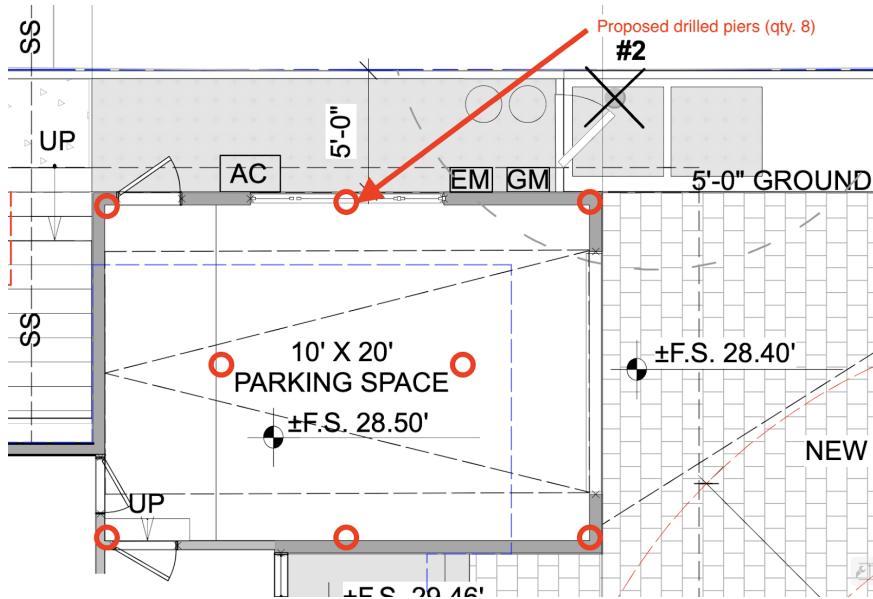
Alternative Design 1:

To preserve tree T2, we can propose a drilled pier foundation for the garage. The garage was originally called for a slab-on-grade foundation per the geo-tech report, see attached. Per the arborist's consultation, drilled piers would result in less root loss. Compared to a stem wall foundation, piers are less impactful to a tree because more roots are preserved. We anticipated +/-8 piers will be required. Please see the following for cost analysis and schematic diagram:

Alt. Design (Pier foundation) : \$2,000 per pier x 8 (qty.) = \$16,000
Original Design (Slab-on-grade foundation) : \$16 per sf x 325 sf = \$5,200
Additional Incremental Cost: \$16,000 - \$5,200 = \$10,800
Tree Value: \$1,800

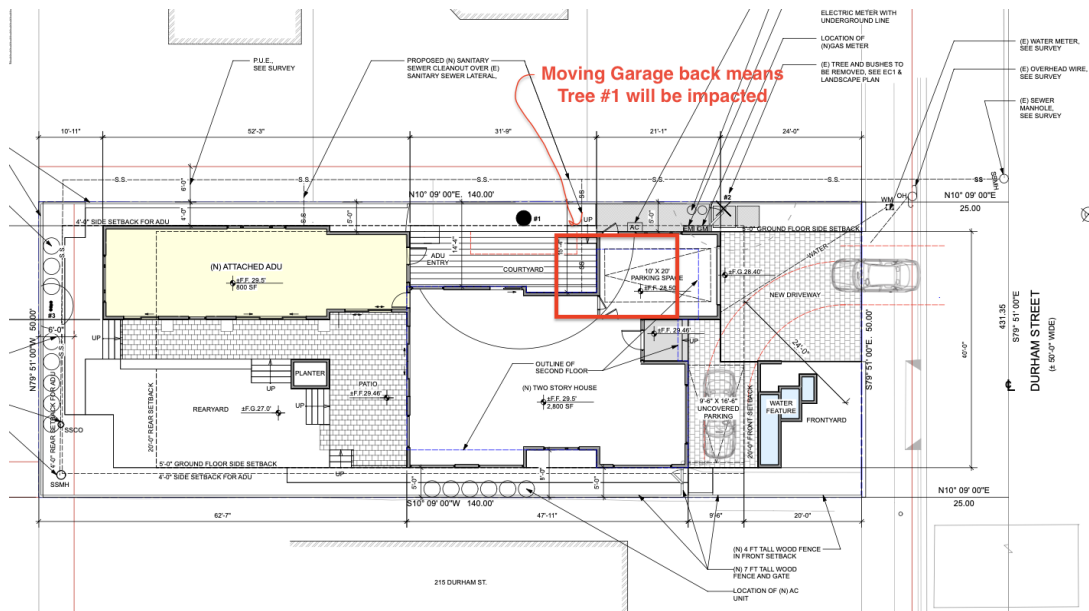
Incremental cost of the tree preservation alternative: \$10,800 - \$1,800 = \$9,000
 $\$9,000 / \$1,800 = 500\% > 140\%$

Since the incremental cost of the tree preservation alternative is 500% and is more than 140% of the appraised value of the tree, the cost will be presumed to be financially infeasible.



Alternative Design 2:

We studied the alternative of moving garage back +/-5 ft to maintain proper distance from the tree. As shown in attached diagram, this will compromise the health of the much larger Oak tree T1, which is worth considerably more than tree #2.



We thank you for your time to review this application. Please call me if you have any questions or require further information.

Bahi Oreizy
 Architect license # 32375

360 Design Studio
 1491 Ben Roe Drive
 Los Altos, Ca 94024
 650.504.3568
 bahi@360designstudio.net

ARBORIST REPORT-
Tree Survey & Impact Assessment

219 Durham Street
Menlo Park, CA
APN: 062-233-100
11/3/2023

Prepared for:

Mr. Bheem Bhatia
219 Durham Street
Menlo Park, CA 94025

Prepared by:



ISA Certified Arborist WE0681A
ISA Tree Risk Assessment Qualification

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Attachments: Appendix A - H

Appendix A – Tree Assessment Chart

Appendix B – Criteria for Tree Assessment Chart

Appendix C – Sheet T1 – Tree Location Map

Appendix D – Appraised Value of “Protected” Trees

Appendix E – Glossary of Terms

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Appendix G - Tree Protection Guidelines & Restrictions

- Protecting Trees During Construction
- Project Arborist Duties & Inspection Schedule
- Tree Protection Fencing
- Tree Protection Signs
- Monitoring
- Root Pruning
- Tree Work Standards & Qualifications
- City of Menlo Park Protected Trees

Appendix H - Assumptions & Limiting Conditions

SUMMARY

This report provides the following information:

1. A summary of the health and structural condition of 3 trees.
 2. A preliminary evaluation of anticipated construction impacts to the trees.
 3. Recommendations for retention or removal of assessed trees based on their condition and anticipated construction impacts.
 4. Appraised value of protected trees impacted by the project, to determine a tree replacement value.
- An existing home will be demolished, and a new two-story single-family home and A.D.U. will be constructed at 219 Durham Street, Menlo Park
 - Three trees on the property, including two trees defined as *Heritage Trees*, by the City of Menlo Park, were surveyed.
 - The two *Heritage* trees are in good or fair condition and are suitable for preservation.
 - The *Heritage* trees will have moderate impacts, can be incorporated into the project, and will need mitigation methods to reduce construction impacts.
 - The *Tree Assessment Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.

Data Summary

General	
Total Trees Inventoried	Count
Total	3
Species	2
Regulated Trees	
<i>Heritage Trees</i>	
All trees $\geq 15''$ trunk diameter, Native oaks $\geq 10''$	2
Tree Disposition Categories – All Trees	
R.I. – Remove due to construction impacts	1
R.C. – Remove due to condition (poor condition)	0
R.T., I.M. - Retain tree. Preservable, low or moderate impacts that can be mitigated.	2

Background

Plans will be submitted to the City of Menlo Park Planning Department, for a construction project at 219 Durham Street, Menlo Park. Mr. Bheem Bhatia has requested my services to assess the condition of three trees on or near the applicant's property, and the construction impacts that may affect them. Further, to provide a report with my findings and recommendations to meet City of Menlo Park planning requirements.

Assignment

Provide an arborist report that includes an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter, height and canopy spread), condition (health and structure), suitability for preservation ratings. Review preliminary development plans assess potential impacts to trees and provide recommendations for retention or removal.

Provide valuations of impacted trees to calculate a tree security deposit.

To complete this assignment, the following services were performed:

- **Tree Resource Evaluation:** Inventory, evaluate and assign suitability for preservation ratings for subject trees.
- **Plan Review: Reviewed provided plans including** Sheet A1.1, Site Plan, dated June 10/6/2023, & Sheet L-1 Landscape Plan, dated 10/25/2023.
- **Construction Impact Assessment:** Combine tree resource data with anticipated construction impacts, to provide recommendations for removal or retention of trees.
- **Mapping:** Tree locations were plotted onto: Sheet CS1, dated 5/15/2023, Topographic & Boundary Survey, and a Tree Location Map, Sheet T1, was created.

Limits of the Assignment

The information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection on 6/5/2023.

The inspection is limited to visual examination of accessible items without climbing, dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future.

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the developer, their agents, and the City of Menlo Park as a reference for existing tree conditions and to help satisfy the City of Menlo Park planning requirements.

Resources

All information within this report is based on site plans as of the date of this report. Resources are as follows:

- Sheet A1.1, Site Plan, dated June 10/6/2023, & Sheet L-1 Landscape Plan, dated 10/25/2023.
- Site Visit, Tree Inventory & Condition Evaluation at 219 Durham Street, Menlo Park on 6/5/2023.
- City of Menlo Park Municipal Code – Chapter 13.24. *Heritage Trees*.
- Guide for Plant Appraisal – 10th Edition
- Species Classification & Group Assignment, WCISA

OBSERVATIONS

The flat parcel is in a residential neighborhood. The landscape contained mostly mature trees that have been well maintained. I surveyed three trees 6-inches or greater in diameter. A diameter tape was used to record trunk diameters. Two trees surveyed are defined as *Heritage* trees according to the City of Menlo Park ordinance. A *Heritage Tree* includes any species 15 inches in diameter or larger, measured at 4.5 feet above grade. Native oak species are protected and designated as *Heritage Trees*, if their trunk is 10 inches or larger, at 4.5 feet above grade. The Heritage tree species included one coast live oak, (*Quercus agrifolia*), and one Japanese loquat, (*Eriobotrya japonica*).

One coast live oak, tree T1, grows in the side yard near the fence line, (Image #1).



Image #1 – Tree T1, coast live oak.

Tree T1, a 21-inch diameter oak has a dense full canopy. Because the tree grows close to the home, the lower branches have been pruned, and the branching structure is higher than occurs with an oak grown in an open area. However, the branches are well attached, and the tree is in good condition.

A Japanese loquat grows near the fence line at the rear of the property, (Image #2).



Image #2 – Tree T3, loquat, (circled).

The 20" diameter loquat grows between the cottage and the rear fence line. The loquat has one 8-inch trunk and three 6-inch trunks. The trunk attachment points are close together, and the attachment angles are steep. This type of trunk arrangement creates weak attachments and the height of this tree should be controlled to reduce stress on the trunk attachments and prevent trunk failure. The loquat canopy density is full and the tree is in good condition.

There is one non-heritage coast live oak growing in the front yard, (Image #3).



Image #3 – Tree T2, coast live oak

The 9.5-inch coast live oak grows near the fence line and is in good condition.

DISCUSSION

Species List

Table 2 – Heritage Trees

HERITAGE TREES		
Common Name	Botanical Name	Count
coast live oak	(<i>Quercus agrifolia</i>)	1
Japanese loquat	(<i>Eriobotrya japonica</i>)	1
Total Protected Tree Count		2

Table 3 – All Trees Inventoried

ALL TREES	
2 species – A complete list can be found in Appendix A – Tree Assessment Chart	
Total Tree Count	3

Tree Evaluation and Recording Methods

Site evaluations were made on 6/5/2023. *The inventory included all trees on the property within the project limits.* The health and structural **condition** of each tree was assessed and recorded. Based on the trees' health and structural condition, each tree's **suitability for preservation** was rated and recorded.

The recorded data is included in the *Tree Assessment Chart, Appendix A*, of this report. Tree numbers were plotted on the attached *Tree Protection Plan, sheet T1*. **To correlate the data in the Tree Assessment Chart to the tree's location on the site, refer to Appendix C, Sheet T1- Tree Location Map.**

Condition Rating (Heritage Trees)

A tree's condition is determined by an assessing both the **health** and **structure**, then combining the two factors to reach a *condition rating*. The tree's condition is rated as poor, fair or good. The quantity of trees assigned for each category (good, fair or poor), is indicated below:

Tree Condition Rating

- Good - 2
- Fair - 0
- Fair-Poor 0
- Poor - 0

Suitability for Preservation (Heritage Trees)

A tree's suitability for preservation is determined based on its health, structure, age, species characteristics and longevity using a scale of good, fair or poor. The quantity of trees assigned to each category (good, fair or poor), is listed below.

Suitability Rating

- Good - 2
- Fair - 0
- Poor - 0

Tree Protection Zone

The tree protection zone (TPZ) is a defined area (radius from trunk), within which certain activities are prohibited or restricted to minimize potential injury to designated trees during construction.

The size of the optimal TPZ can be determined by a formula based on 1) trunk diameter 2) species tolerance to construction impacts, and 3) tree age (Matheny, N. and Clark, J 1998). In some instances, tree drip line is used as the TPZ. Development constraints can also influence the final size of the tree protection zone.

Fencing is installed to delineate the (TPZ), and to protect tree roots, trunk, and scaffold branches from construction equipment. *The fenced protection area may be smaller than the optimal or designated TPZ area in some circumstances.* Tree protection may also involve the armoring of the tree trunk and/or scaffold limbs with barriers to prevent mechanical damage from construction equipment. *See Tree Protection Guidelines & Restrictions – Appendix E.*

Once the TPZ is delineated and fenced (prior to any site work, equipment and materials move in), construction activities are only to be permitted within the TPZ if allowed for and specified by the project arborist.

Where tree protection fencing cannot be used, or as an additional protection from heavy equipment, tree wrap may be used. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the City arborist or Project arborist. Straw wattle may also be used as a trunk wrap and secured with orange plastic fencing.

Data has been entered in the *Tree Assessment Chart – Appendix A*, which indicates the optimal Tree Protection Zone for each tree.

Additional general tree protection guidelines are included in *Tree Protection Guidelines & Restrictions – Appendix G*.

Critical Root Zone

The CRZ is the biological limit of a tree's capacity to recover from root loss. It is "the area of soil around a tree where the minimum number of roots that are biologically essential to the structural stability and health of the tree are located. There are no universally accepted methods to calculate the CRZ." (Clark, Metheny, Smiley, et al, *The Tree Protection Zone & the Critical Root Zone*, 12/2021). The methods utilized to determine the Critical Root Zone are varied and can be based on professional guidelines and/or industry standards. Criteria such as trunk diameter, tree age and vigor, species tolerance, tree architecture and existing site constraints are commonly used criteria.

Using this information, the arborist can find the distance from the trunk that should be protected per unit of trunk diameter. The CRZ does not always represent a radius around the tree. When necessary, the area can be offset or shaped in a manner that accepts tree canopy constraints or existing conditions.

Critical Root Zone, Continued:

For purposes of this report the CRZ is the minimum tolerable distance between the trunk, and excavation that requires root cutting. I have estimated it to be five times the trunk Diameter at Breast Height, (DBH is 4.5' above grade). For example, if a tree has a one-foot trunk diameter, the CRZ extends to five feet from the trunk.

If encroachment into the CRZ or TPZ is required to retain the tree during development, the arborist must provide alternative construction methods or preconstruction treatments to reduce impacts.

Root Disturbance Distance

No one can estimate and predict with absolute certainty what distance from a tree, a soil disturbance such as excavation for construction should be, to ensure it will not significantly affect tree stability or health. Or to what degree, (low, moderate or high), a tree might be impacted. There are simply too many variables involved that we cannot see or anticipate. However, three times the D.B.H. (diameter at breast height), is a widely accepted minimum used in the industry for root disturbance, *on one side of the trunk*, and is supported by several research studies including (Smiley, Fraedich & Hendrickson 2002, Bartlett Tree Research Laboratories). This distance is often used during the design and planning phases of a project in order to estimate root loss due to construction activities. This distance is a guideline only and should be increased for trees with significant leans, decay or other structural problems.

The ISA, International Society of Arboriculture- Root Management (2017) publication recommends, "cutting roots at a distance greater than six times the trunk diameter (DBH) minimizes the likelihood of affecting both health and stability. This recommendation is given further direction by the companion publication, A.N.S.I. (*American National Standard*) A300 (Part 8)- 2013 Root Management, when roots are cut in a *non-selective* manner, i.e. in a straight line on one side of a tree. It says, if the cutting is "within six times the trunk diameter (DBH), mitigation shall be recommended". Further, A.N.S.I. recommends the "minimum distance from the trunk for root cutting should be adjusted according to trunk diameter, species tolerance to root loss, tree age, health and site condition".

In general, root cutting that occurs at a distance less than ten times the diameter of a tree should be undertaken by hand digging and hand (or Sawzall), root pruning. These methods help mitigate root loss impacts.

Construction Impacts to *Heritage* Trees

The two *Heritage Trees* will have moderate impacts and can be incorporated into the project.

Tree T1, a 20.5-inch coast live oak is near a new sewer lateral and the home foundation, (Image #4).

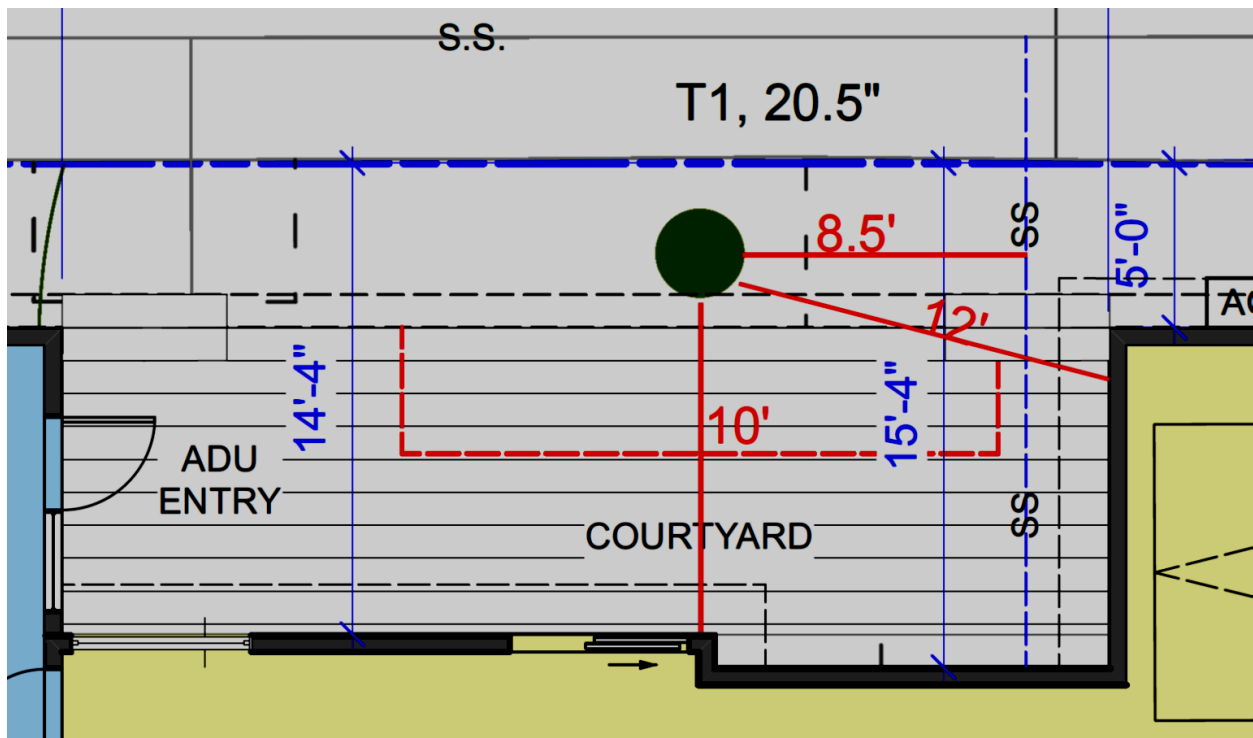


Image #4 – Tree T1 coast live oak. Distance to elements, (sewer line and foundation), impacting tree.

Tree T1 coast live oak, a 20.5" diameter tree is 8.5-feet from the sewer line, (Image #4). This is within the critical root zone, $8.5' \times 12" \div 20.5"$ trunk diameter = 5 X the trunk diameter. With mitigation, the oak will suffer moderate root loss and the impacts are within root loss tolerances.

The oak is 10 to 12 feet from the home foundation. Excavation for the home foundation will be outside the tree's critical root zone, and with mitigation, impacts to the tree are within root loss tolerances.

A wood deck will be built within the oak trees canopy dripline. If the deck piers are set in the ground (vs. On grade), some excavation will be necessary. With mitigation such as hand digging and adjustment of pier location to miss significant roots, the oak will suffer minor root loss which it can tolerate. If piers are set on grade, the oak will have minimal root loss.

Considering combined root loss from all construction elements, with mitigation, anticipated root loss will be moderate, the oak can be retained, and will need tree protection treatments to reduce root loss impacts.

The existing home is less than 4-feet from the oak, demolition of the existing home will need to be done in a manner that does not affect the roots or branch structure of the tree.

Construction Impacts to *Heritage* Trees, Continued:

The oak, tree T1, may also need minor, targeted, clearance pruning to allow construction of the new garage and to facilitate removal of the existing home.

Tree T3, a 20-inch Japanese loquat is near the ADU foundation, (Image #5).

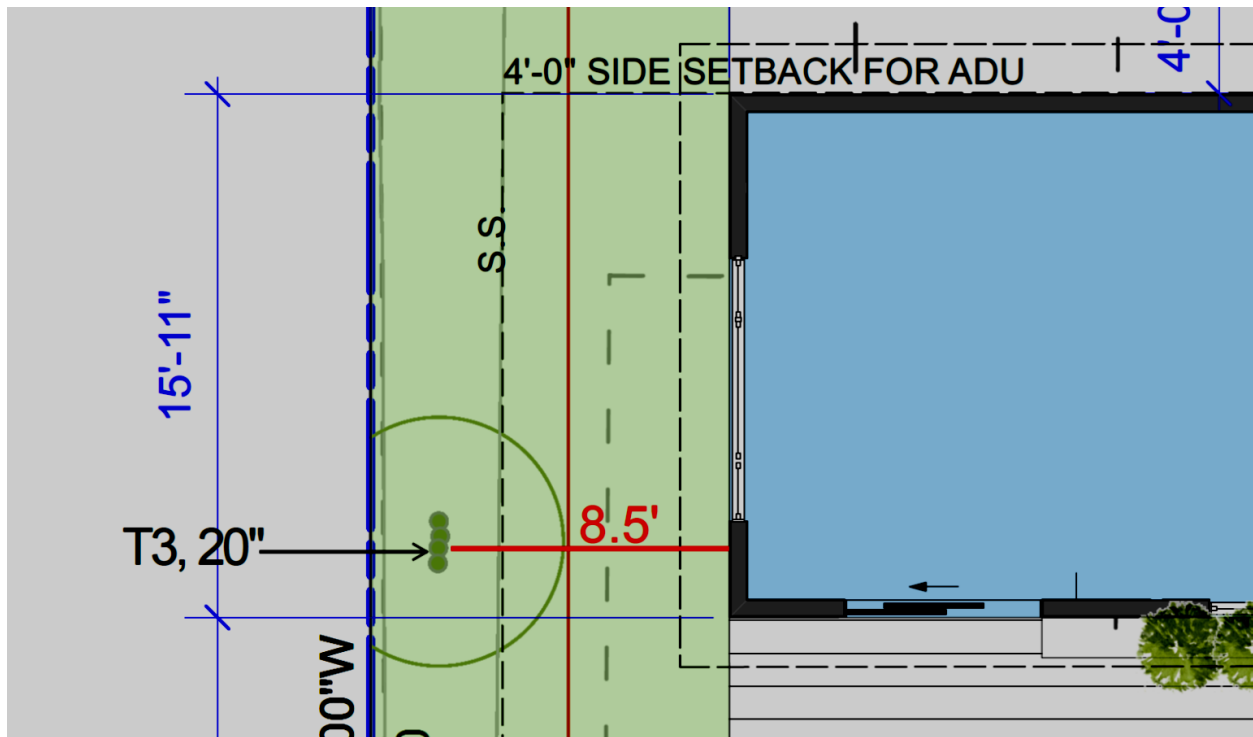


Image #5 – Tree T3 loquat and distance to foundation.

Tree T3 loquat, a 20" diameter tree is 8.5-feet from the ADU foundation, (Image #5). This is within the critical root zone, $8.5' \times 12" \div 20" \text{ trunk diameter} = 5.1 \times$ the trunk diameter. With mitigation, the oak will suffer moderate root loss. The impacts are within root loss tolerances, the loquat can be retained, and it will need tree protection treatments to reduce root loss impacts.

Impact Level

Impact level rates the degree a tree may be impacted by construction activity and is primarily determined by how close the construction procedures occur to the tree. Construction impacts are rated as low, moderate, and high. The quantity of trees assigned for each category (low, moderate, high), is indicated below:

Impact Rating (Heritage Trees)

- Low - 0
- Moderate – 2
- High - 0

Mitigation Measures for Retained Trees

The trees retained on this project will require some or all of the following methods to protect them from the impacts described above and to minimize root loss during the construction phases.

- Tree Protection Fencing
- Hand trenching.
- Supervised root pruning.

A Tree Protection Plan Sheet, specifying mitigation measures to reduce impacts to retained trees, shall be included with the final submittal.

Tree Appraisal and Valuation

The City of Menlo Park requires valuation of all protected trees potentially affected by a construction project. The value of two trees has been appraised. Reference is, 1) *Guide for Plant Appraisal 10th Edition*, and 2) *Species Classification & Group Assignment, WCISA*

The total appraised value of the two *Heritage* trees is **\$10,250**. The criteria for appraisal are included in the attached spreadsheet, *Appendix D, Appraised Value of Heritage Trees – Reproduction Method – Trunk Formula Technique*.

Note: Any tree protected by the City Code, within the project limits, or with a canopy overhanging the project limits, will require replacement according to its appraised value, if it is damaged beyond repair as a result of construction activities.

Tree Removal & Replacement Trees

This report is a preliminary evaluation of construction impacts to trees. The final site plan and impacts to trees will depend on planning department review of the preliminary submittal and if any modifications to the plan are required.

One non-heritage tree, a 9.5-inch coast live oak is recommended for removal. Unless specified by the planning department replacement trees are not required for removal of non-heritage trees. The landscape plan includes six trees, and this can be considered compensation for the tree being removed.

Table 3 – Tree Disposition Categories – Heritage Trees

Tree Disposition Categories – Heritage Trees		
R.I. –	Remove due to construction impacts	0
R.C. –	Remove due to condition (poor condition)	0
R.T., I.M. -	Retain tree. Preservable, low or moderate impacts that can be mitigated.	2

Final Inspection A final inspection by the City Arborist is required. The inspection shall occur prior to removal of tree protection fencing and after all replacement trees have been installed.

Certificate of Performance

I, Kurt Fouts, certify:

That I have personally inspected the tree(s) and/or the property referred to in this report and have stated my findings accurately to the best of my professional judgement.

- That I have no current interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.
- That the analysis, opinions and conclusions stated herein are my own, and were developed and prepared according to commonly accepted arboricultural practices.
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- That my analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- That no one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I am an International Society of Arboriculture Certified Arborist and carry an International Society of Arboriculture Tree Risk Assessment Qualification. I have been involved in the practice of arboriculture and the care and study of trees for more than 20 years.

Signed: *Kurt Fouts*

Date: 11/3/2023

CONCLUSION

- An existing home will be demolished, and a new two-story single-family home and A.D.U. will be constructed at 219 Durham Street, Menlo Park
- Three trees on the property, including two trees defined as *Heritage Trees*, by the City of Menlo Park, were surveyed.
- The two *Heritage* trees, T1 coast live oak and T3, Japanese loquat, are in good or fair condition and are suitable for preservation.
- The *Heritage* trees will have moderate impacts, can be incorporated into the project, and will need mitigation methods to reduce construction impacts.
- The *Tree Assessment Chart*, Appendix A is the condensed reference guide to inform all tree management decisions for the trees evaluated.

RECOMMENDATIONS

1. Obtain all necessary permits prior to removing or significantly altering any trees on site.

Respectfully submitted,

Kurt Fouts

Kurt Fouts ISA Certified Arborist WE0681A
 ISA Tree Risk Assessment Qualification



219 Durham Street, Menlo Park

Tree Assessment Chart - Appendix A

Suitability for Preservation Ratings:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment

Tree Disposition Code:


RT: Retain Tree

RI: Remove Due to Construction Impacts

I.M. Impacts Can Be Mitigated With Pre-Construction Treatments

R.C. Remove Due to Condition

Protected Tree City of Menlo Park, Any tree 15 inches or greater in diameter measured at 4.5 feet above grade. Any native oak 10" inches or greater in diameter measured at 4.5 feet above grade.

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Heritage Tree	Crown Height & Spread (diameter)	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in radius feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T1	coast live oak (<i>Quercus agrifolia</i>)	20.5"	Yes	30'X50'	Good	Good	Good	20'	Moderate (Root loss-excavation)	R.T., I.M.	Near fence line.
T2	coast live oak	9.5"	No	40'X25'	Good	Good	Good	20'	High (Within hardscape footprint)	R.I.	Maturing tree 6" from fence line.
T3	Japanese loquat (<i>Eriobotrya japonica</i>)	20" (At 6' above grade)	Yes	25'X20'	Good	Fair	Fair	10'	Moderate (Root loss-excavation)	R.T., I.M.	Grows at fence line. 4 trunks (8",6",6",6" diameter), with steep attachment angles.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>							Page 1 of 1			11/3/2023	

APPENDIX B – CRITERIA FOR TREE ASSESSMENT CHART

Following is an explanation of the data used in the tree evaluations. The data is incorporated in the *Tree Assessment Chart, Appendix A*.

Trunk Diameter and Number of Trunks:

Trunk diameter as measured at 4.5 feet above grade. The number of trunks refers to a single or multiple trunked tree. Multiple trunks are measured at 4.5 feet above grade.

Health Ratings:

Good: A healthy, vigorous tree, reasonably free of signs and symptoms of disease

Fair: Moderate vigor, moderate twig and small branch dieback, crown may be thinning and leaf color may be poor

Poor: Tree in severe decline, dieback of scaffold branches and/or trunk, most of foliage from epicormics

Structure Ratings:

Good: No significant structural defects. Growth habit and form typical of the species

Fair: Moderate structural defects that might be mitigated with regular care

Poor: Extensive structural defects that cannot be abated.

Relative Age:

I estimated tree age as young, semi-mature, mature, or over-mature.

Suitability for Preservation Ratings:

Rating factors:

Tree Health: Healthy vigorous trees are more tolerant of construction impacts such as root loss, grading, and soil compaction, then are less vigorous specimens.

Structural integrity: Preserved trees should be structurally sound and absent of defects or have defects that can be effectively reduced, especially near structures or high use areas.

Tree Age: Over mature trees have a reduced ability to tolerate construction impacts, generate new tissue and adjust to an altered environment. Young to maturing specimens are better able to respond to change.

Species response: There is a wide variation in the tolerance of individual tree species to construction impacts.

Rating Scale:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures.

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment. Trees can be expected to decline or fail regardless of construction impacts or management . The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

Construction Impacts:

Rating Scale:

High: Development elements proposed that are located within the Tree Protection Zone that would severely impact the health and /or stability of the tree. The tree impacts cannot be mitigated without design changes. The tree may be located within the building footprint.

Moderate: Development elements proposed that are located within the Tree Protection Zone that will impact the health and/or stability of the tree and can be mitigated with tree protection treatments.

Low: Development elements proposed that are located within or near the Tree Protection Zone that will have a minor impact on the health of the tree and can be mitigated with tree protection treatments.

None: Development elements will have no impact on the health and stability of the Tree.

Tree Protection Zone (TPZ):

Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, particularly during construction or development.

Legend

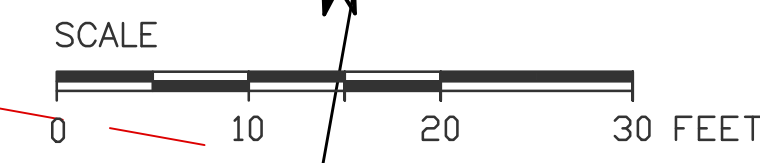
- Protected Tree Location ●
- Non-Protected Tree Location ●
- Tree Protection Fencing - - - - -
- Tree Canopy Extents ☁
- Hand Trenching & Root Pruning >>>>>>>>
- Remove Tree X

219 Durham Street, Menlo Park
Tree Assessment Chart - Appendix A

Suitability for Preservation Ratings:
Good: Trees in good health and structural condition with potential for longevity on the site
Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures
Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment


Tree Disposition Code:
RT: Retain Tree
RI: Remove Due to Construction Impacts
I.M. Impacts Can Be Mitigated With Pre-Construction Treatments
R.C. Remove Due to Condition
Protected Tree City of Menlo Park: Any tree 15 inches or greater in diameter measured at 4.5 feet above grade. Any native oak 10" inches or greater in diameter measured at 4.5 feet above grade.

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Heritage Tree	Crown Height & Spread (diameter)	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in radius feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T1	coast live oak (<i>Quercus agrifolia</i>)	20.5"	Yes	30'X50'	Good	Good	Good	20'	Moderate (Root loss-excavation)	R.T., I.M.	Near fence line.
T2	coast live oak	9.5"	No	40'X25'	Good	Good	Good	20'	High (Within hardscape footprint)	R.I.	Maturing tree 6' from fence line.
T3	Japanese loquat (<i>Eriobotrya japonica</i>)	20" [at 6' above grade]	Yes	25'X20'	Good	Fair	Fair	10'	Moderate (Root loss-excavation)	R.T., I.M.	Grows at fence line. 4 trunks (8", 6", 6", 6" diameter), with steep attachment angles.
							Page 1 of 1			11/3/2023	



219 Durham Street, Menlo Park

Appraised Value of *Heritage Trees* - Reproduction Method / Trunk Formula Technique

Tree #	Species	Trunk Diameter @ 4.5'	Basic Reproduction Cost	Health X Weighting	Structure X Weighting	Form X Weighting	Weighted Average Condition	Functional Limitations	External Limitations	Appraised Value
T1	coast live oak (<i>Quercus agrifolia</i>)	20.5"	\$15,002	75%X.30	61%X.30	50%X.40	61%	65%	100%	\$5,900
T2	Japanese loquat (<i>Eriobotrya japonica</i>)	20"	24,191	75%X.25	41%X.35	30%X.40	45%	40%	100%	\$4,350
Total Value of Appraised Trees										\$10,250
 <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 kurtfouts1@outlook.com</p>				Sheet 1 of 1				11/3/2023		

Glossary of Terms

Basal rot: decay of the lower trunk, trunk flare, or buttress roots.

Canker: Localized diseased area on stems, roots and branches. Often sunken and discolored.

Critical Root Zone (CRZ): Area of soil around a tree where a minimum number of roots considered critical to the structural stability or health of the tree are located. CRZ determination is sometimes based on the drip line or a multiple of the DBH, but because root growth can be asymmetric due to site conditions, on-site investigation may be required.

Codominant branches/stems: Forked branches (or trunks), nearly the same size in diameter, arising from a common junction and lacking a normal branch union, may have included bark.

Crown: Upper part of a tree, measured from the lowest branch, including all branches and foliage.

Defect: An imperfection, weakness, or lack of something necessary. In trees defects are injuries, growth patterns, decay, or other conditions that reduce the tree's structural strength.

Diameter at breast height (DBH): Measurement of trunk diameter at 4.5 feet above grade.

Frass: Fecal material and/or wood shavings produced by insects.

Included Bark Attachments (crotches): Branch/limb or limb /trunk, or codominant trunks originating at acute angles from each other. Bark remains between such crotches, preventing the development of axillary wood. The inherent weakness of such attachments increases with time, through the pressure of opposing growth and increasing weight of wood and foliage, often resulting in failure.

Live Crown Ratio (LCR): Ratio of the the crown length (live foliage), to total tree height.

Scaffold branches: Permanent or structural branches that form the scaffold architecture or structure of a tree.

Suppressed: Trees that have been overtopped and occupy an understory position within a group or grove of trees. Suppressed trees often have poor structure.

Tree Protection Zones (TPZ): Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.

Trunk flare: Transition zone from trunk to roots where the trunk expands into the buttress or structural roots.

This Glossary of Terms was adapted from the *Glossary of Arboricultural Terms* (ISA, 2015)

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Appendix G- TREE PROTECTION GUIDELINES AND RESTRICTIONS

Protecting Trees During Construction:

- 1) Before the start of site work, equipment or materials move in, clearing, excavation, construction, or other work on the site, every tree to be retained shall be securely fenced- off as delineated in approved plans. Such fences shall remain continuously in place for the duration of the work undertaken in connection with the development.
- 2) If the proposed development, including any site work, will encroach upon the tree protection zone, special measures shall be utilized, as approved by the project arborist, to allow the roots to obtain necessary oxygen, water, and nutrients.
- 3) Underground trenching shall avoid the major support and absorbing tree roots of protected trees. If avoidance is impractical, hand excavation undertaken under the supervision of the project arborist may be required. Trenches shall be consolidated to service as many units as possible. Boring/tunneling under roots should be considered as an alternative to trenching.
- 4) Concrete or asphalt paving shall not be placed over the root zones of protected trees, unless otherwise permitted by the project arborist.
- 5) Artificial irrigation shall not occur within the root zone of native oaks, unless deemed appropriate on a temporary basis by the project arborist to improve tree vigor or mitigate root loss.
- 6) Compaction of the soil within the tree protection zone shall be avoided.
- 7) Any excavation, cutting, or filling of the existing ground surface within the tree protection zone shall be minimized and subject to such conditions as the project arborist may impose. Retaining walls shall likewise be designed, sited, and constructed to minimize their impact on protected trees.
- 8) Burning or use of equipment with an open flame near or within the tree protection zone shall be avoided. All brush, earth, and other debris shall be removed in a manner that prevents injury to the tree.
- 9) Oil, gas, chemicals, paints, cement, stucco or other substances that may be harmful to trees shall not be stored or dumped within the tree protection zone of any protected tree, or at any other location on the site from which such substances might enter the tree protection zone of a protected tree.
- 10) Construction materials shall not be stored within the tree protection zone of a protected tree.

Project Arborist Duties and Inspection Schedule:

The project arborist is the person(s) responsible for carrying out technical tree inspections, assessment of tree health, structure and risk, arborist report preparation, consultation with designers and municipal planners, specifying tree protection measures, monitoring, progress reports and final inspection.

A qualified project arborist (or firm) should be designated and assigned to facilitate and insure tree preservation practices. He/she/they should perform the following inspections:

Inspection of site: Prior to equipment and materials move in, site work, demolition, landscape construction and tree removal: The project arborist will meet with the general contractor, architect / engineer, and owner or their representative to review tree preservation measures, designate tree removals, delineate the location of tree protection fencing, specify equipment access routes and materials storage areas, review the existing condition of trees and provide any necessary recommendations.

Inspection of site: During excavation or any activities that could affect trees: Inspect site during any activity within the Tree Protection Zones of preserved trees and any recommendations implemented. Assess any changes in the health of trees since last inspection.

Final Inspection of Site: Inspection of site following completion of construction. Inspect for tree health and make any necessary recommendations.

Kurt Fouts shall be the Project Arborist for this project. All scheduled inspections shall include a brief Tree Monitoring report, documenting activities and provided to the City Arborist.

Tree Protection Fencing

Tree Protection fencing shall be installed prior to the arrival of construction equipment or materials. Fence shall be comprised of six-foot chain link fence mounted on eight-foot tall, 1 and 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced on a minimum of 10-foot centers. Once established, the fence must remain undisturbed and be maintained throughout the construction process until final inspection.

A final inspection by the City Arborist at the end of the project will be required prior to removing any tree protection fencing.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Root Pruning

Root pruning shall be supervised by the project arborist. When roots over two inches in diameter are encountered they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Tree Work Standards and Qualifications

All tree work, removal, pruning, planting, shall be performed using industry standards of workmanship as established in the Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute series, *Safety Requirements in Arboriculture Operations* ANSI Z133-2017,

Contractor licensing and insurance coverage shall be verified.

During tree removal and clearance, sections of the Tree Protection Fencing may need to be temporarily dismantled to complete removal and pruning specifications. After each section is completed, the fencing is to be re-installed.

Trees to be removed shall be cut into smaller manageable pieces consistent with safe arboricultural practices, and carefully removed so as not to damage any surrounding trees or structures. The trees shall be cut down as close to grade as possible. Tree removal is to be performed by a qualified contractor with valid City Business/ State Licenses and General Liability and Workman's Compensation insurance.

Development Site Tree Health Care Measures

RECOMMENDED TO PROVIDE OPTIMUM GROWING CONDITIONS, PHYSIOLOGICAL INVIGORATION AND STAMINA, FOR PROTECTION AND RECOVERY FROM CONSTRUCTION IMPACT.

Establish and maintain TPZ fencing, trunk and scaffold limb barriers for protection from mechanical damage, and other tree protection requirements as specified in the arborist report.

Project arborist to specify site-specific soil surface coverings (wood chip mulch or other) for prevention of soil compaction and loss of root aeration capacity.

Soil, water and drainage management is to follow the ISA BMP for "Managing Trees During Construction" and the ANSI Standard A300(Part 2)- 2011 Soil Management (a. Modification, b. Fertilization, c. Drainage.)

Fertilizer / soil amendment product(s) amounts and method of application to be specified by certified arborist.

City of Menlo Park – Protected Trees

Chapter 13.24 HERITAGE TREES

13.24.020 Heritage tree defined.

As used in this chapter "heritage tree" means:

- (1) A tree or group of trees of historical significance, special character or community benefit specifically designated by resolution of the city council;
- (2) An oak tree (*Quercus*) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten (10) inches) or more, measured at fifty-four (54) inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are under twelve (12) feet in height, which will be exempt from this section.
- (3) All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are under twelve (12) feet in height, which will be exempt from this section. (Ord. 928 § 1 (part), 2004).

ASSUMPTIONS AND LIMITING CONDITIONS

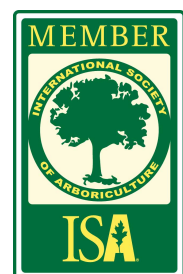
1. Any legal description provided by the appraiser/consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as the quality of any title.
2. The appraiser/consultant can neither guarantee nor be responsible for accuracy of information provided by others.
3. The appraiser/consultant shall not be required to give testimony or to attend court by reason of this appraisal unless subsequent written arrangements are made, including payment of an additional fee for services.
4. Loss or removal of any part of this report invalidates the entire appraisal/evaluation.
5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person(s) to whom it is addressed without written consent of this appraiser/consultant.
6. This report and the values expressed herein represent the opinion of the appraiser/consultant, and the appraiser/consultant's fee is in no way contingent upon the reporting of a specified value nor upon any finding to be reported.
7. Sketches. Diagrams. Graphs. Photos. Etc., in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys.
8. This report has been made in conformity with acceptable appraisal/evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.
9. When applying any pesticide, fungicide, or herbicide, always follow label instructions.
10. No tree described in this report was climbed, unless otherwise stated. We cannot take responsibility for any defects which could only have been discovered by climbing. A full root collar inspection, consisting of excavating around the tree to uncover the root collar and major buttress roots, was not performed, unless otherwise stated. We cannot take responsibility for any root defects which could only have been discovered by such an inspection.

CONSULTING ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce risk of living near trees, Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

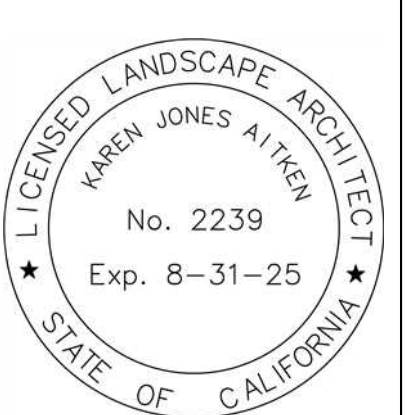


REVISIONS	BY

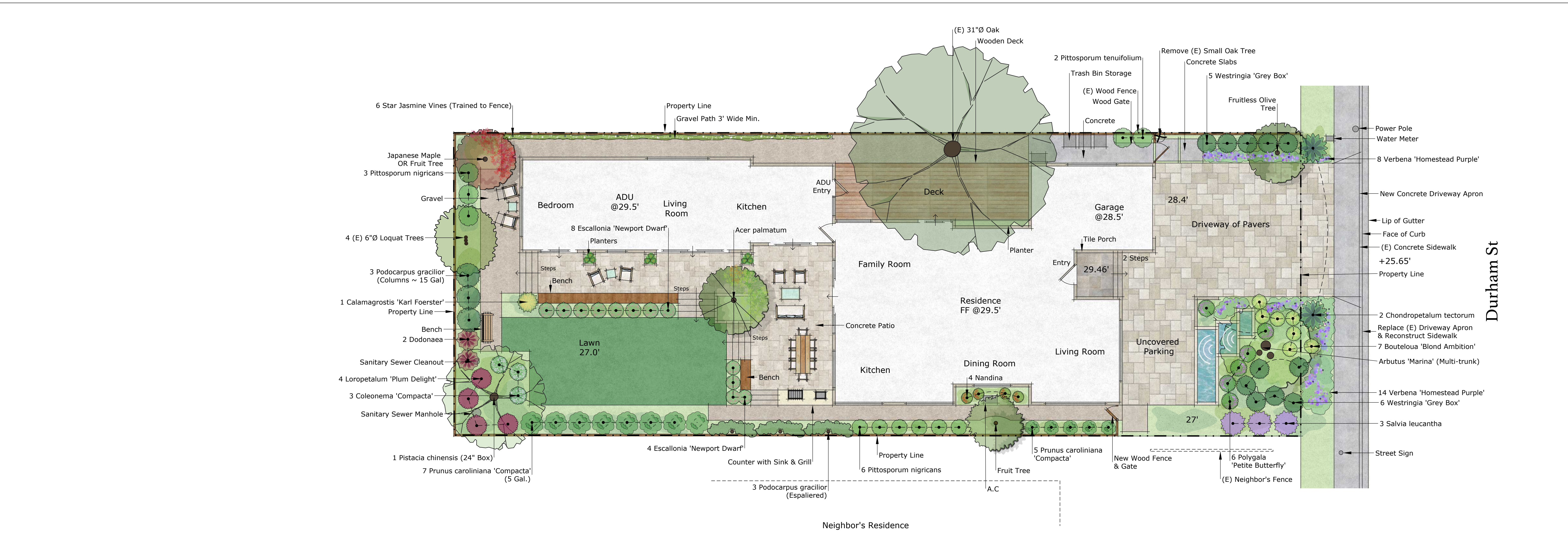
KAREN AITKEN & ASSOCIATES
LANDSCAPE ARCHITECTS

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karen@kaa.design

BHATIA RESIDENCE
219 Durham St, Menlo Park, CA
LANDSCAPE PLAN



DATE	11-10-23
SCALE	1/8" = 1'-0"
DRAWN	PD-SL
JOB	BHATIA



Plant Photos

Pistacia chinensis 'Keith Davey'
Keith Davey Chinese Pistache 24" Box
25'-40" x 25'-35" (At Maturity)
Growth Rate: Moderate

Podocarpus gracilior
Fern Pine 15 Gal.
30'-50" x 15'-20" (At Maturity)
Growth Rate: Slow

Olea europaea 'Swan Hill'
Fruitless Olive 24" Box
<25" x <25" (At Maturity)
Growth Rate: Moderate

Arbutus 'Marina'
Strawberry Tree 24" Box
25'-40" x 20'-30" (At Maturity)
Growth Rate: Moderate

Acer palmatum 'Emperor 1'
Red Emperor Japanese Maple 24" Box
20'-25" x 15'-20" (At Maturity)
Growth Rate: Moderate, Slow

Acer palmatum 'J. Maple Green Leaf' 24 Box
<20" x <20" (At Maturity)
Growth Rate: Slow

Polygala fru. 'Petite Butterfly'
Butterfly Pea Shrub 5 Gal.
3' x 3' (At Maturity)
Growth Rate: Moderate

Pittosporum tenuifolium
Blackstem Pittosporum 5 Gal.
12-16" x 6-8" (At Maturity)
Growth Rate: Moderate

Nandina domestica 'Firepower'
Firepower Heavenly Bamboo 5 Gal.
6-8" x 4" (At Maturity)
Growth Rate: Moderate

Loropetalum chinese 'Plum Delight'
Plum Delight Fringe Flower 5 Gal.
6'-8" x 6'-8" (At Maturity)
Growth Rate: Moderate

Escallonia 'Newport Dwarf'
Dwarf Escallonia 5 Gal.
2.5' x 4" (At Maturity)
Growth Rate: Slow

Dodonaea viscosa 'Purpurea'
Purple Hopseed Bush 5 Gal.
10-15" x 10-15" (At Maturity)
Growth Rate: Fast

Coleonema pulchellum 'Compacta'
Dwarf Breath of Heaven 5 Gal.
2-3' x 4-6" (At Maturity)
Growth Rate: Moderate

Chondropetalum tectorum
Cape Rush 5 Gal.
3' x 3' (At Maturity)
Growth Rate: Fast

Calamagrostis 'Karl Foerster'
Karl Foerster Feather Reed Grass
5 Gal.
2'-6" x 2" (At Maturity)
Growth Rate: Fast

Trachelospermum jasminoides
Star Jasmine 1 Gal.
18-20" x Spreading (At Maturity)
Growth Rate: Moderate

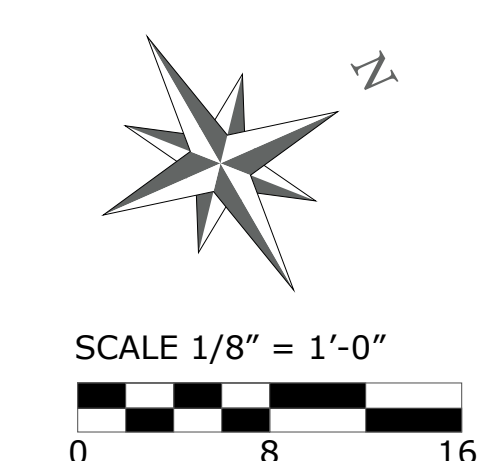
Verbena 'Homestead Purple'
Homestead Purple Verbena 5 Gal.
0.8-1' x 3' (At Maturity)
Growth Rate: Fast

Westringia fru. 'Grey Box'
Coast Rosemary 5 Gal.
2-3' x 2-3' (At Maturity)
Growth Rate: Moderate

Salvia leucantha
Mexican Sage 5 Gal.
2-3' x 3-4" (At Maturity)
Growth Rate: Fast

Prunus caroliniana 'Compacta'
Dwarf Carolina Laurel Cherry 5 Gal.
8-10" x 6-8" (At Maturity)
Growth Rate: Moderate

Plant Legend						
BOTANICAL	COMMON	SIZE	QTY	WATER	REMARKS	
Tree						
Acer palmatum	Japanese Maple	24" box	1	Medium, Extra in Summer		
Acer palmatum 'Emperor 1'	Emperor 1 Japanese Maple	24" box	1	Medium, High, Extra in Summer	Or Fruit Tree	
Arbutus 'Marina'	Marina Strawberry Tree	24" box	1	Low	Multi-Trunk	
Fruit Tree	Owners Choice	15 gal	1	Medium		
Olea europaea 'Swan Hill'	Swan Hill Olives® Tree	24" box	1	Very Low, Medium		
Pistacia chinensis 'Keith Davey'	Keith Davey Chinese Pistache	24" box	1	Low		
Podocarpus gracilior	African Fern Pine	15 gal	3	Low, Medium	Espaliered	
Shrub						
Coleonema pulchellum 'Compacta'	Dwarf Breath of Heaven	5 gal	3	Medium		
Dodonaea viscosa 'Purpurea'	Purple Hop Bush	5 gal	2	Very Low, Extra in Summer		
Escallonia 'Newport Dwarf'	Dwarf Escallonia	5 gal	12	Medium, Extra in Summer		
Loropetalum chinese 'Plum Delight'	Plum Delight Fringe Flower	5 gal	4	Low, Medium, Extra in Summer		
Nandina domestica 'Firepower'	Firepower Heavenly Bamboo	5 gal	4	Medium		
Pittosporum tenuifolium	Blackstem Pittosporum	5 gal	11	Medium		
Podocarpus gracilior	African Fern Pine	15 gal	3	Low, Medium	Columns	
Polygala fru. 'Petite Butterfly'	Butterfly Pea Shrub	5 gal	6	Medium		
Prunus caroliniana 'Compacta'	Dwarf Carolina Laurel Cherry	5 gal	12	Low		
Salvia leucantha 'Santa Barbara'	Santa Barbara Sage	5 gal	3	Low		
Westringia fru. 'Grey Box'	Coast Rosemary	5 gal	11	Very Low, Extra in Summer		
Ground cover						
Verbena 'Homestead Purple'	Homestead Purple Verbena	1 gal	22	Very Low, Low		
Vine						
Jasminum pubescens	Star Jasmine	1 gal	6	Low, Medium		
Grass						
Calamagrostis 'Karl Foerster'	Karl Foerster Feather Reed Grass	5 gal	1	Medium, Extra in Summer		
Chondropetalum tectorum	Cape Rush	5 gal	2	Low		



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360 Design Studio

Tree Removal Application- additional document (dated Jan 8, 2024)

Date: Jan 8th, 2024

To: City of Menlo Park

Permit #: PLN2023-00043

Site location: 219 Durham St., Menlo Park

We would like to propose the removal of Tree T2, prior to the construction of a proposed new 2-story house located on the subject property.

Tree T2 is a coastal live oak and it measures 9.5" dia. We understand the significance of protecting native species, therefore, we explored many options for keeping it while coming up with an appealing design. After much consideration, we ultimately decided to propose removal of the tree for the following reasons:

1) The subject lot is a substandard narrow lot only 50 Ft wide. Tree T2 is very close to the front setback where the facade will be. Based on the arborist's recommendations, the house would need to be +/- 7' away from the tree trunk in order to ensure the health of this tree. This means after the required side setbacks and the tree protection zone are removed, we're left with +/- 36' for the entire front facade. At a minimum, for a proportional and harmonious front facade that fits well into the neighborhood, we need to fit a decent-sized entry porch, a living room with a decent-sized window, and a minimum one-car garage. With the 36' width, almost half of the front facade would be dedicated to an albeit small one-car garage, and very little space for a proportional entry porch or a living room window. See the diagram attached.

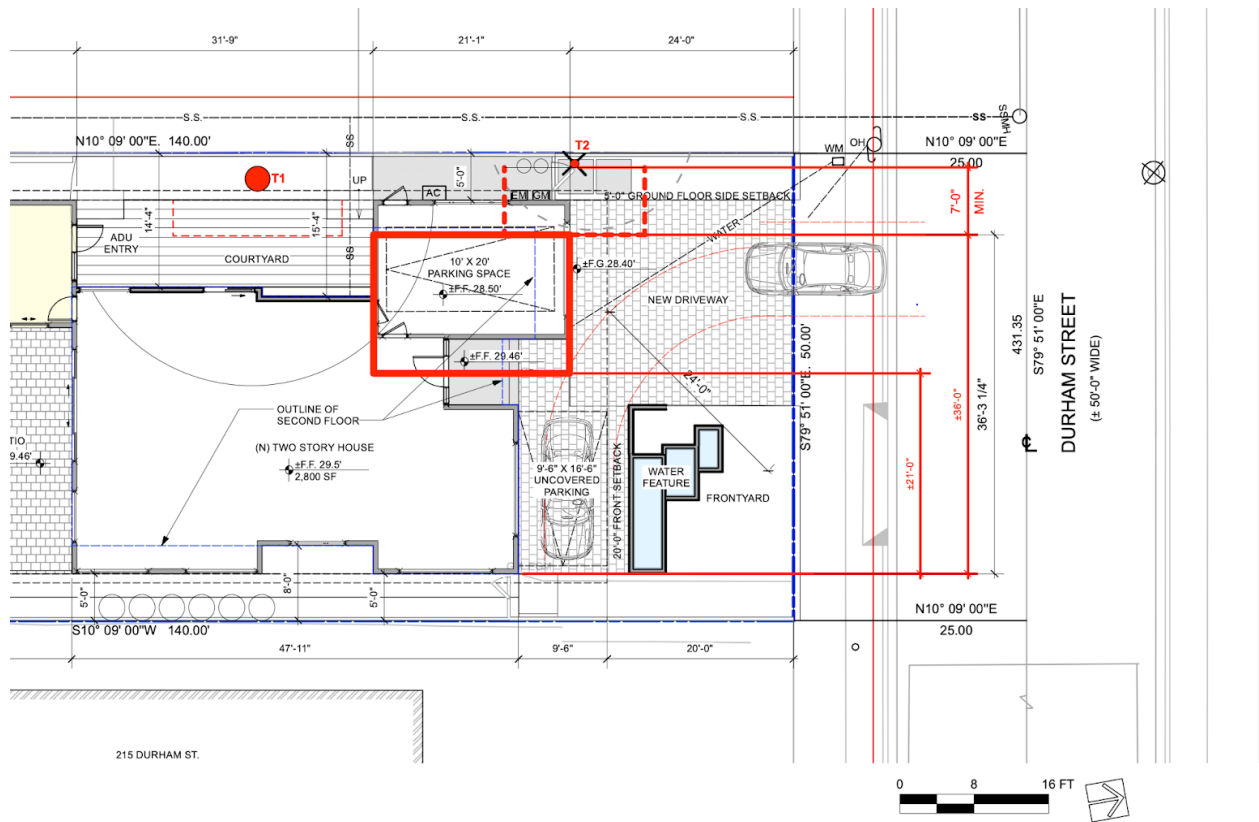
2) In addition to Tree T2, there is another much larger Oak tree T1 (size: 20.5" dia.), along the west side of the property further back from T1. We've designed the house to incorporate this tree by creating a courtyard around it. While this tree has already impacted our design significantly, we feel like we've celebrated it in an appealing way. If we were to protect both Tree T1 and T2, it would be impossible to fit any of the house volumes on the west side of the lot. The entire house would have to be shifted towards the east. We feel like the house design & functionality will seriously suffer and the front facade will be less harmonious and unappealing to the neighborhood.

3) We understand it's essential to protect native trees for our environment. We proposed a large 25-gallon Chinese Pistache (*Pistacia chinensis*) replacement tree at the southeast corner of the lot. See the attached landscape plan.

360 Design Studio
1491 Ben Roe Drive
Los Altos, Ca 94024
650.504.3568
bahi@360designstudio.net

We thank you in advance for your time to review this application. We hope that you agree that the special circumstances unique to this site make for a logical argument for the removal of the tree.

Please call me if you have any questions or require further information.



Bahi Oreizy
Architect license # 32375

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1491 Ben Roe Drive
Los Altos, Ca 94024
650.504.3568
bahi@360designstudio.net



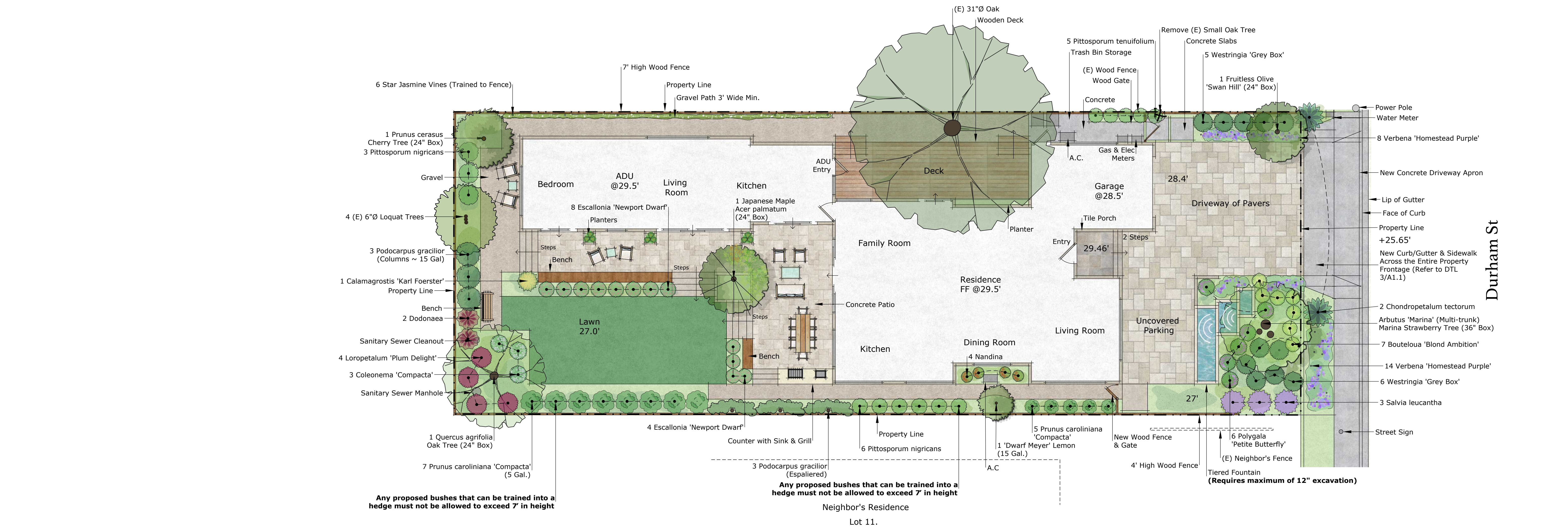
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BHATIA RESIDENCE
 219 Durham St, Menlo Park, CA
LANDSCAPE PLAN



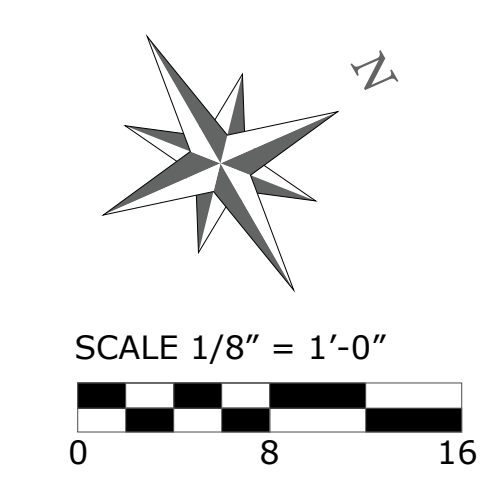
DATE 03-14-24
 SCALE 1/8" = 1'-0"
 DRAWN PD-SL
 JOB BHATIA

L-1



Plant Legend						
Botanical	Common	Size	Qty	Water	Remarks	
Tree						
Acer palmatum	Japanese Maple	24" box	1	Medium, Extra in Summer		
Arbutus 'Marina'	Marina Strawberry Tree	36" box	1	Low	Multi-Trunk	
Citrus x 'Dwarf Meyer'	Dwarf Meyer Lemon	15 gal	1	Low, Medium, Extra in Summer		
Olea europaea 'Swan Hill'	Swan Hill Olives® Tree	24" box	1	Very Low, Medium		
Podocarpus gracilior	African Fern Pine	15 gal	3	Low, Medium	Espaliered	
Prunus cerasus	'4 in 1' Cherry Tree	24" box	1	Medium		
Quercus agrifolia	Coast Live Oak	24" box	1	Very Low, Low		
Shrub						
Coleonema pulchellum 'Compacta'	Dwarf Breath of Heaven	5 gal	3	Medium		
Dodonaea viscosa 'Purpurea'	Purple Hop Bush	5 gal	2	Very Low, Extra in Summer		
Escallonia 'Newport Dwarf'	Dwarf Escallonia	5 gal	12	Medium, Extra in Summer		
Loropetalum chinense 'Plum Delight'	Plum Delight Fringe Flower	5 gal	4	Low, Medium, Extra in Summer		
Nandina domestica 'Firepower'	Firepower Heavenly Bamboo	5 gal	4	Medium		
Pittosporum tenuifolium	Blackstem Pittosporum	5 gal	14	Medium		
Podocarpus gracilior	African Fern Pine	15 gal	3	Low, Medium	Columns	
Polygala fru. 'Petite Butterfly'	Butterfly Pea Shrub	5 gal	6	Medium		
Prunus caroliniana 'Compacta'	Dwarf Carolina Laurel Cherry	5 gal	12	Low		
Salvia leucantha 'Santa Barbara'	Santa Barbara Sage	5 gal	3	Low		
Westringia fru. 'Grey Box'	Coast Rosemary	5 gal	11	Very Low, Extra in Summer		
Ground cover						
Verbena 'Homestead Purple'	Homestead Purple Verbena	1 gal	22	Very Low, Low		
Vine						
Jasminum pubescens	Star Jasmine	1 gal	6	Low, Medium		
Grass						
Calamagrostis 'Karl Foerster'	Karl Foerster Feather Reed Grass	5 gal	1	Medium, Extra in Summer		
Chondropetalum tectorum	Cape Rush	5 gal	2	Low		

*** NOTES**
 Any proposed bushes that can be trained into a hedge must not be allowed to exceed 7' in height.
 The fountain requires maximum of 12" excavation
 (E) = Existing



**A GEOTECHNICAL INVESTIGATION
for the
PROPOSED RESIDENCE AND ADU
on the
BHATIA PROPERTY
219 DURHAM STREET
MENLO PARK, CALIFORNIA**

**By
PGSoils, Inc.
901 Rose Court
Burlingame, California**

June 2023

PGSoils, Inc.

901 Rose Court
Burlingame, CA 94010
(650) 347-3934

Paul A. Grishaber, P.E., Principal
Consulting Soils Engineering Services
email: pgsoils.inc@gmail.com

Job: 2326
June 6, 2023

Bheem Bhatia
219 Durham Street
Menlo Park, CA 94025

Subject: **GEOTECHNICAL INVESTIGATION**
Proposed Residence & ADU
219 Durham Street
Menlo Park, California

Dear Mr. Bhatia:

In accordance with your authorization of May 19, 2023, we have performed a geotechnical investigation for the proposed residence and detached ADU (Accessory Dwelling Unit) on your property at 219 Durham Street in Menlo Park, California. This report summarizes our findings and conclusions, and provides recommendations related to the geotechnical aspects of the project.

PROPOSED CONSTRUCTION

It is proposed to demolish the existing house, pavements, and other improvements on the lot. While no plans have yet been prepared, we understand that it is planned to construct a new two-story, wood-frame residence with an attached garage, basically in the same area of the property as the existing home. It is anticipated that the house and ADU will have raised wood floors over a crawl space area. The ADU may have a concrete slab floor. The building loads for the proposed structures are expected to be light to moderate which is typical of wood-frame construction. It is expected that the new garage floor, and adjacent exterior porch and patio areas will be comprised of concrete slabs. The site is level and so the site grading is anticipated to be relatively minor.

SCOPE OF OUR INVESTIGATION

Our services included an initial visit to the site on May 17, 2023. This was followed by the drilling of two test borings on the property on May 31, 2023. The soil materials were sampled during the drilling and written logs of the materials encountered were generated. Laboratory testing was performed on the samples that we obtained. We assessed the site and subsurface conditions in relation to the proposed construction to prepare our geotechnical recommendations. Finally, we prepared this written report.

Job: 2326
June 6, 2023

SITE DESCRIPTION

The subject property is a level, rectangularly-shaped residential lot that is located along the southwest side of Durham Street in Menlo Park, California (See Figure 1 - Vicinity Map). The lot encompasses 7,000 square feet of land.

The property is occupied by a one-story residence and attached garage, and a detached guest house in the back yard. The driveway, garage floor, detached guest house floor, front porch, back patio, and sidewalks are comprised of concrete slabs. Landscaping consists of shrubs, trees, flowers, a back yard lawn, and gravel covered areas.

SUBSURFACE EXPLORATION

On May 31, 2023, two test borings were drilled on the property at the approximate locations shown on the Site Plan (See Figure 2 - Site Plan). The test borings were drilled with a portable "Minuteman" rig using continuous flight augers. The test borings were each drilled to a depth of 13.75 feet below the existing ground surface. During the drilling of the test borings, selected subsurface samples were obtained by driving a 3.0-inch diameter (Modified California) sampler into the undisturbed soil mass using a 70-pound hammer freely falling 30 inches. The locations of the samples and descriptions of the soil materials encountered are shown on the Logs of Test Borings (Figures 3 and 4).

The number of blows required to drive the sampler into the undisturbed soil mass has been converted to an approximate equivalent number of blows that would be required to drive a Standard Penetration Test sampler one foot into the same materials using a 140-pound hammer. The number of blows is shown on the Test Boring Logs under the "Penetration Resistance" column.

LABORATORY TESTING

After the field work, the samples obtained were delivered to a soils laboratory for selective testing. The tests performed included determinations of in-place density, moisture content, strength, and Plasticity Index. The results of these tests are shown on the Logs of Test Borings.

SUBSURFACE CONDITIONS

The materials found in Test Boring 1 include layers of stiff to very stiff Sandy and Silty CLAY with some gravel from the surface down to the bottom of the test boring at 13.75 feet. No groundwater was encountered in this test boring.

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June 6, 2023

The subsurface materials encountered in Test Boring 2 included layers of stiff to very stiff to hard Sandy CLAY with some gravel from the surface down to a depth of 13.0 feet. Below this, medium dense Clayey SAND with gravel was found down to the bottom of the test boring at 13.75 feet. Groundwater was encountered at a depth of 13.25 feet.

The upper soils are clayey, and are judged to be highly expansive. (Expansive soils swell when wetted and shrink when they dry.) Expansive soils respond to changes in moisture content. They shrink when they dry, and swell (or heave) when they are wetted. (They undergo volume changes and movements in response to moisture content changes.) Also, when clayey soils become saturated, they tend to soften, and footings could shift slightly. These volume changes can lead to the formation of cracks in walls and ceilings; they can cause shifts around door frames that may result in seasonal sticking of doors; and, they can cause shifts and tilts of concrete slabs.

The soils encountered in the test borings are mostly stiff to very stiff clayey soils. The potential for significant consolidation of these underlying soils is judged to be low under the anticipated building loads.

The site is geologically mapped (Geologic Map of the Palo Alto and Part of the Redwood Point Quadrangles, San Mateo and Santa Clara Counties, CA, USGS, 1993) as being underlain by "Medium-grained Alluvium". Medium-grained Alluvium includes unconsolidated to moderately consolidated, moderately-sorted fine sand, silt, and clayey silt deposited at the edge of coarse-grained alluvial fans that interfingers with coarse- and fine-grained alluvium.

SEISMICITY AND SEISMIC HAZARDS

The site lies about 6.8 miles northeast of the San Andreas Fault Zone, 16.2 miles northeast of the San Gregorio Fault, and about 11.5 miles southwest of the Hayward Fault. These are considered to be active fault zones.

Strong to very strong ground shaking must be expected at the site from significant seismic activity emanating from these fault zones during the life of the proposed residence and ADU. The intensity of the shaking at the site will be dependent upon the actual earthquake magnitude, distance from the epicenter, and the subsurface materials underlying the site.

No fault traces are mapped through the site, and therefore, ground surface rupture is not likely. The site area is level, and is not located along an unsupported creek bank such that lateral spreading is not likely to take place during a strong earthquake. Most of the soils encountered in the test borings included stiff to very stiff clays. These soils will not be subject to liquefaction. The sandy and gravelly soils encountered at the bottom of Test Boring 2 are medium dense and saturated. That material may have a potential for liquefaction during a strong seismic event. Liquefaction during a

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June 6, 2023

strong earthwork could result in minor areal, differential ground settlement. In our opinion, such potential differential ground settlement as a result of liquefaction will be minor at the ground surface due to the overlying stiff to very stiff clayey soils.

The subsurface materials at this site may be assumed to be in Site Class "D", as described in the 2022 California Building Code. The site latitude is 37.46425 degrees and longitude is -122.15354 degrees. This results in Spectral Accelerations of $S_s = 1.500$, $S_1 = 0.600$, $S_Ms = 1.500$, and $S_Ds = 1.000$, with a Site Amplification Factor $F_a = 1$.

CONCLUSIONS

The site is geotechnically suitable for the construction of the proposed residence and ADU provided the recommendations contained in this report are included in the design and carried out during the construction.

Recommendations for site preparation and earthwork, the design of foundations, concrete slabs, and drainage are presented in subsequent sections of this report.

RECOMMENDATIONS

SITE PREPARATION AND EARTHWORK

The preparation of the site should involve the stripping and removal of the existing structures, pavements, utility lines, debris, vegetation, organic topsoil, and all deleterious materials. Any disturbance to the ground as a result of the clearing and footing excavation operations should be properly backfilled using the native soil, or approved import soil. The soil should be moisture-conditioned as necessary, and then compacted to a Minimum Relative Compaction of not less than 90% of the Maximum Dry Density as determined by ASTM Test Procedure D1557.

Portions of the upper soil materials may be less dense than desirable, particularly after the site stripping. Therefore, it is recommended that the upper 6 to 12 inches of subgrade soil, or the depth of ground disturbed during the site preparation, in any new concrete slab, concrete paver, or other pavement area be recompact prior to the placement of the gravel base and paved surface. The extent of any additional soil compaction should be further reviewed during the construction by the project Geotechnical Engineer.

The need to place fill soil is not anticipated at this time. However, if plans change and fill soil is required, it should be placed in lifts no thicker than 6 to 8 inches (loose thickness before being compacted), moisture-conditioned as needed, and then properly compacted. "Moisture-conditioning" may involve the addition of water if the soil is too dry, or drying the soil if it is too wet when the compaction work is performed. All other fills and utility trench backfills should be compacted to the same standard indicated above.

Job: 2326
June 6, 2023

The native soils may be used as fill material provided that they are free of organics, deleterious materials, and rocks larger than 3 inches in size. If imported fill soil is required, it should be of good quality (equal to or better than the native soils) that is preferably granular, relatively non-expansive, and is free of deleterious materials. Prior to its use on the site, all import soil should be submitted to our office for inspection, testing (as necessary), and final approval for use on the site. Trench backfill should consist of the native soils.

FOUNDATIONS

The site is underlain by highly expansive clayey soils that respond to changes in moisture content. They shrink when they dry, and swell (or heave) when they are wetted. (They undergo volume changes and movements in response to moisture content changes.) Also, when clayey soils become saturated, they tend to soften, and footings could shift.

In consideration of these expansive soil conditions, it is recommended that the new structures be supported upon a drilled, cast-in-place, steel-reinforced concrete piers. The perimeter piers should be tied together with structural grade beams. The pier length, diameter, and reinforcement should be determined by the project structural engineer using the values quoted in this section.

Drilled piers should be embedded a minimum of 12 feet below the grade beams or lowest adjacent ground surface, whichever is deeper. Drilled piers should be a minimum of 16 inches in diameter.

Drilled piers may be designed for vertical bearing capacity using a skin friction value of 500 psf for the Dead Load plus Code Live Load condition. This may be increased by one third for wind and seismic loadings.

For lateral resistance, the piers may be designed for a passive pressure of 250 pcf EFW, which may be assumed to act over 1.5 pier diameters.

The upper 2.5 feet of ground should be neglected in the determination of the vertical bearing capacity and lateral resistance.

Perimeter grade beams should be embedded a minimum of 18 inches below the exterior ground surface and 9 inches below the crawl space ground surface or concrete slabs, whichever is deeper. The intent of these embedment depths is to help minimize the penetration of moisture into the crawl space or under the garage floor slab.

As a means to resist uplift from the near-surface expansive soils, a void form (minimum of 4 inches deep) should be installed under the grade beams between the piers. The most convenient means to provide such a void is through the use of a wax-covered cardboard box (such as Sure-Void or equivalent). Alternately, the grade beams may be designed for an uplift pressure of 2000 psf.

Job: 2326
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Pier Hole Drilling

During the drilling of pier holes, a representative of PGSoils, Inc. should be present to verify the depths, and the soil conditions at each of the pier hole locations.

The pier drilling contractor should use sufficiently-sized equipment for drilling on this project. Refusal to drilling using inadequately-sized drilling equipment may not be considered acceptable.

It is recommended that the contractor set reinforcing steel and place concrete as soon as possible following the drilling of the pier holes (ideally the same day as the drilling) to minimize the potential for sloughing or caving of soil into the holes. This will be important since groundwater was encountered in Test Boring 2. Consequently, it may be necessary to drill the pier holes and, immediately afterward, install the reinforcing steel and concrete. After pier hole drilling is performed, and prior to pouring concrete, the pier holes should be kept covered so that loose soil does not fall into them.

CONCRETE SLABS-ON-GRADE

The near-surface soils at the subject site are expansive. These soils can be expected to undergo volume changes in response to moisture changes, which can cause concrete slabs to shift over time. However, future movements may be reduced by keeping the exposed native soil subgrade surface in a moist condition prior to the placement of the base layer and concrete. This may be accomplished by regular sprayings of the soil surface with water before the placement of concrete. The exposed soil should not be allowed to dry out.

Future movements of concrete slabs can be more significantly reduced by underlying them with a thicker layer of gravel base material or non-expansive fill soil. In this regard, it is recommended that the gravel base under the concrete slabs for the garage, driveway, porch, and patio areas be underlain by 12 inches of non-expansive subbase soil material.

New concrete slabs-on-grade for the garage floor and driveway slabs should be a minimum of 5 inches thick. New concrete slabs-on-grade for exterior sidewalks, porches, and patios should be a minimum of 4 inches thick. It is suggested that all slabs be provided with modest reinforcement, such as #4 bars on 18-inch centers (both directions), or as specified by the project architect or structural engineer.

The garage floor and driveway slabs should be underlain by a minimum of 6 inches of granular base layer that may consist of angular gravel or clean crushed rock. Sidewalk, porch, and patio slabs should be underlain by a minimum of 4 inches of gravel base. It is recommended that the subgrade soil be compacted prior to the placement of the gravel base and paved surface in any new concrete slab, concrete paver, or other paved areas as was discussed in the Site Preparation and Earthwork section.

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June 6, 2023

A vapor barrier should be installed under the garage floor slab, and it should consist of "Stegowrap", "Moistop Ultra", Viper "Vaporcheck" or equivalent that is a minimum of 15-mil thickness.

DRAINAGE

Drainage around the new residence and ADU will be very important for their future satisfactory structural performance. We recommend the following drainage measures at this property, which should be considered in the building plans:

1. The roof of the new structures should be provided with eave gutters and downspouts. As a minimum, downspouts should discharge onto splash blocks that promote the flow of water away from the structures. Alternatively, roof downspouts could be connected to a closed pipe system that would convey water to a Building Department approved on-site storm water disposal system. Water should not be discharged in areas where it may pond next to the perimeter foundations.
2. Final grading and exterior pavements should be constructed so that the ground surface slopes away from the structures to reduce the amount of water that may penetrate under foundations and seep into the crawl space or under concrete slabs. The ground surface should be sloped away from the structures at a minimum gradient of 5% in landscaped areas, and 2% where slabs abut the structures. New landscaping should be designed so that water will drain away from the structures and pavements.
3. As a means to intercept potential seepage into the crawl space areas of the new home and ADU, and under the garage floor slab, it is recommended that a subsurface drainage system be installed around the perimeter of the new structures. Subdrain sections may be placed next to the exterior side of the new perimeter foundations. Subdrain trench sections should be excavated to a minimum depth of 2.5 feet below the exterior ground surface, and a minimum of 12 inches below the crawl space ground surface, whichever is deeper. From the "high point(s)", the bottom of the subdrain trench sections should be sloped at a minimum gradient of 1/4-inch per foot to the discharge location. Since gravity drainage of subdrains on this property will not be possible, the water should be drained into one or more sumps, from which the water can be pumped out to the yard areas. A typical subdrain cross-section is shown in Figure 5.
4. We would advise that the crawl space areas be covered with a layer of rat-proofing concrete, in part to assist in the surface drainage of those areas, but also to help keep the expansive soils in a more uniform moisture condition. The surface of the rat-proofing should be sloped so that any water which might seep into that area will flow toward surface drain inlets. A sufficient number of surface drains should be provided so that water cannot pond in isolated areas. Water from these drain inlets should be conveyed to a sump from which it may then be discharged to the exterior yard areas.

5. It is recommended that the drainline piping consist of Schedule 40 PVC or ABS pipe, SDR 35 "Sewer" pipe, or other pipe with a minimum crush strength of 2500 psf. All piping used should have couplings that are glued or have rubber gasket joints to ensure that the pipe sections will not separate. Flexible corrugated plastic pipe is not recommended because sediment tends to collect in the low sections of the corrugations, and such pipe is more difficult to clean out later. All pipes should be provided with cleanout access pipes at the ground surface. These should be located at the beginning of pipe sections, and at turns in the pipes, to allow for future flushing and cleaning of pipes.
6. The owner should be aware of these drainage measures and of the need for their future maintenance. This would include the cleaning of eave gutters and downspouts, repairing leaks in eave gutters, clearing surface drains (if installed), and checking to determine that lines are open and draining water properly. Seasonal flushing of drain lines may be necessary to remove silt that might accumulate.

PLAN REVIEW AND CONSTRUCTION OBSERVATION

The information contained in this report should be made available to all members of the project design team. Following the preparation of the plans and specifications, we should review them for conformance to the recommendations and intent of this report. Further, this report should be considered to be part of the plans and specifications, and should be made available to all prospective contractors as part of the bid documents.

Our firm must be retained during the construction to observe and verify that the appropriate geotechnically-related aspects of the project have been performed in a way that is consistent with our recommendations. If these services are not provided by our office, we cannot be held responsible for problems which arise due to misinterpretation of this report, or the intents of our recommendations.

LIMITATIONS

The opinions, conclusions and recommendations presented in this report have been prepared in accordance with generally accepted professional practice in the field of geotechnical engineering. We make no other warranty either express or implied. The recommendations are based upon our own field investigation and laboratory testing, and have been provided for this property and the proposed construction as we understand it as of the date of this report.

Changed Conditions

It is not uncommon to encounter subsurface conditions during construction that vary from those encountered in the test borings. It is not practical to determine such variations during a normally

Job: 2326
June 6, 2023

acceptable program of field exploration. Such variations, if encountered, may require additional engineering services to attain a properly constructed project. Therefore, if variations or undesirable conditions are encountered during the construction proposed as of the date of this report, notification should be given to us so that supplemental engineering services can be undertaken and a re-evaluation of our recommendations prepared.

Time Limits

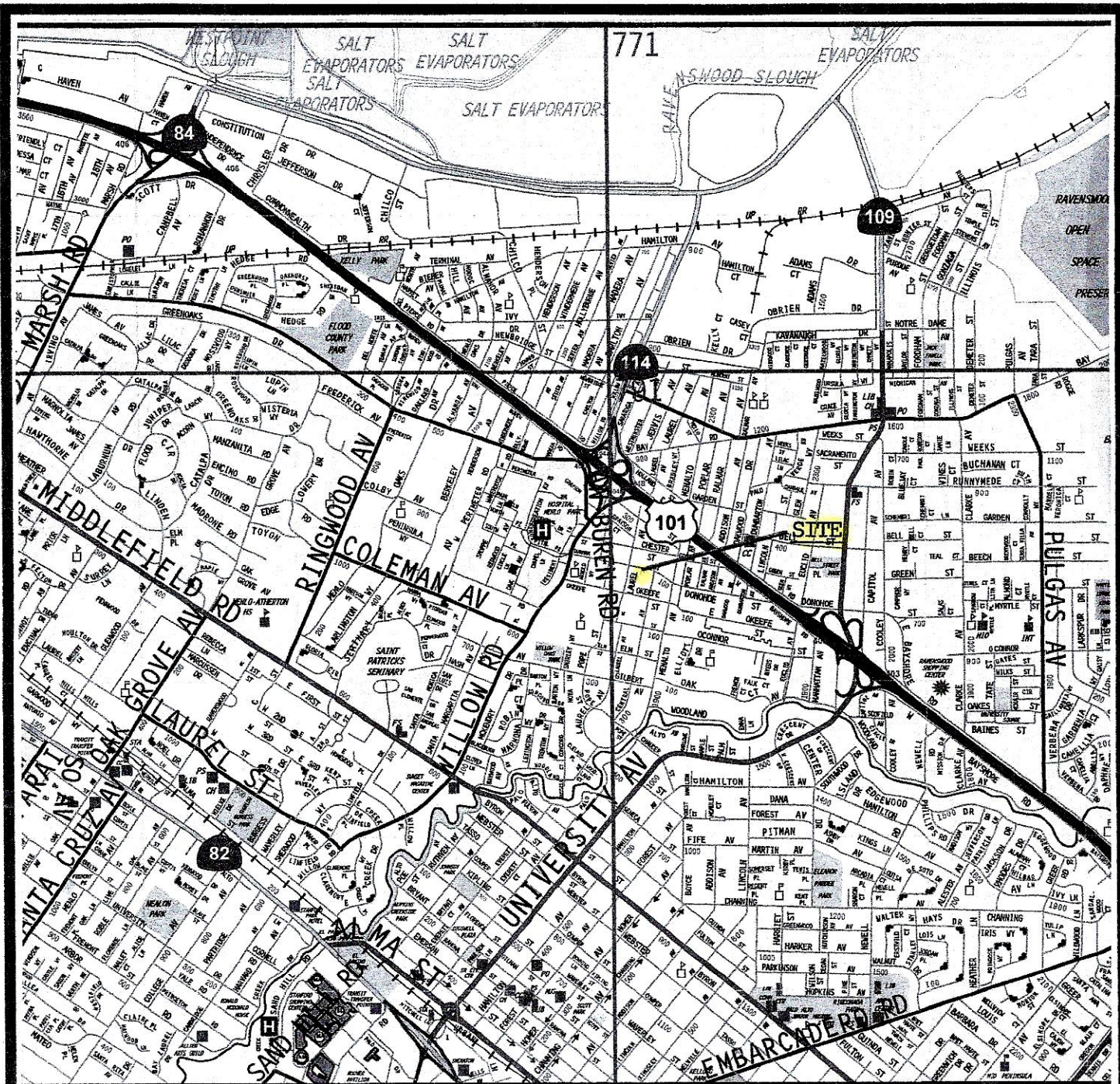
The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time, whether they are due to natural processes or the works of man on this or the adjacent properties. In addition, changes in applicable or appropriate standards can occur, whether they result from legislation, or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside of our control. Therefore, the recommendations in this report should not be relied upon after a period of 1 year, without review and any necessary updating, by us.

Very truly yours,
PGSOILS, INC.


Paul A. Grishaber, P.E.
Principal Geotechnical Engineer
GE 2194 (Expires 12/31/23)



cc: 1 to Mr. Bhatia (By email)
1 to 360 Design Studio (By email)



Map Source: Thomas Bros.

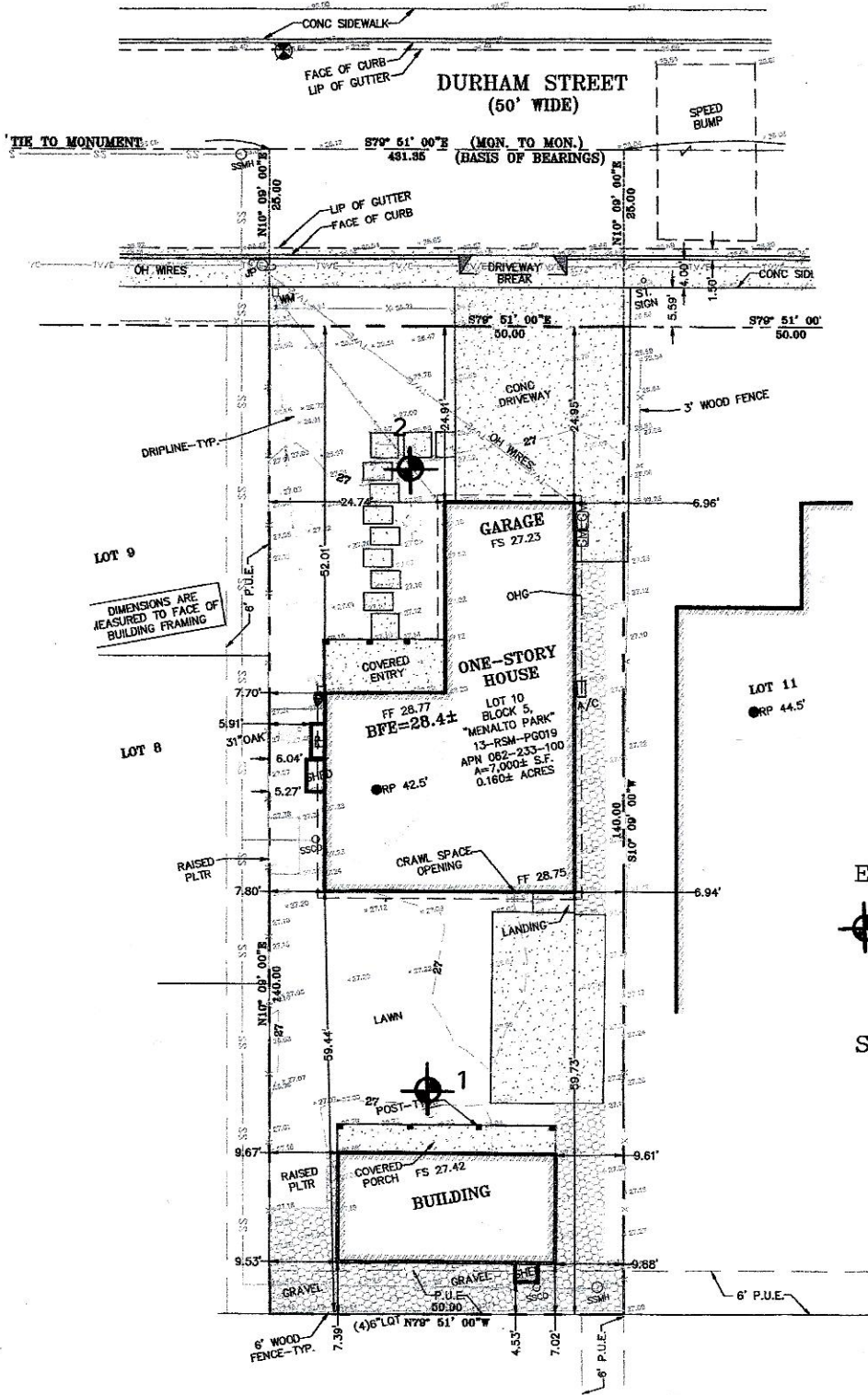
NORTH




PGSoils, Inc.
 901 Rose Court
 Burlingame, CA 94010
 (650) 347-3934

Figure 1 - Vicinity Map

Job: 2326



EXPLANATION:

 Location of Test Boring

Scale: 1" = 25'

PGSoils, Inc.

901 Rose Court
 Burlingame, CA 94010
 (650) 347-3934

Figure 2 - Site Plan and Locations of Test Borings

Job: 2326

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft.	DESCRIPTION	IN-PLACE	
					DRY DENSITY p.c.f.	MOISTURE CONTENT % dry wt.
0				Existing Ground Surface		
1	1-1		15	Sandy CLAY, medium to dark brown, stiff to very stiff, damp [Plasticity Index = 41]	98.7	23.4
2			19			
3	1-2		18	Sandy & Silty CLAY, brown, very stiff, damp	103.3	22.3
4			28			
5	1-3		9	Sandy & Silty CLAY, slight gravel, brown/orange brown/gary, stiff, moist [Unconfined Compressive Strength = 2441 psf]	100.9	23.6
6						
7	1-4		14	Sandy & Silty CLAY, slight gravel, olive/tan/brown, stiff to very stiff, moist	99.5	25.7
8						
9				Test Boring Terminated at 13.75 feet No Groundwater Encountered Date Drilled: May 31, 2023		

PGSoils, Inc.
 901 Rose Court
 Burlingame, CA 94010
 (650) 347-3934

Figure 3 - Log of Test Boring 1

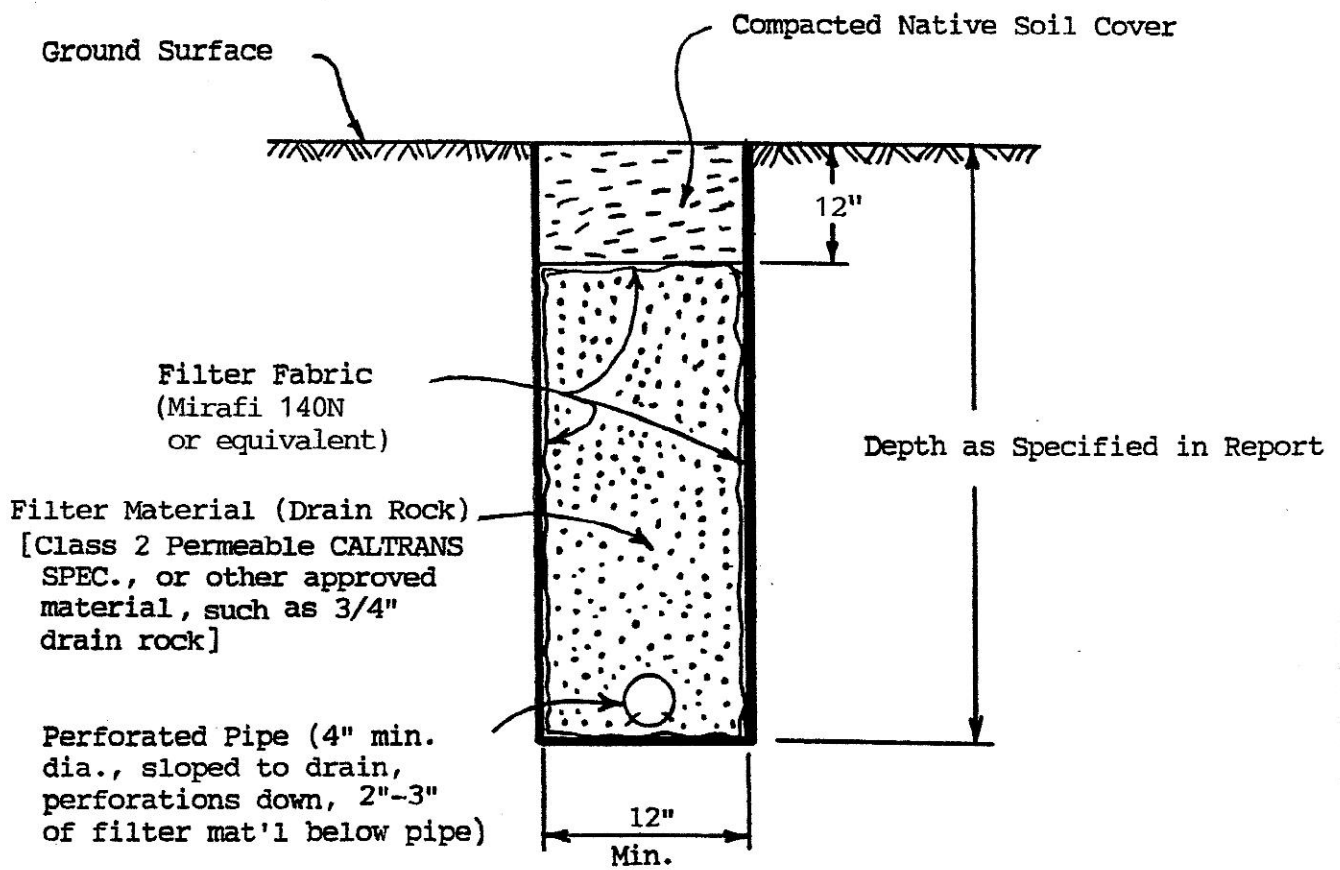
Job: 2326

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft.	DESCRIPTION	IN-PLACE	
					DRY DENSITY p.c.f.	MOISTURE CONTENT % dry wt.
0				Existing Ground Surface		
1				Sandy CLAY, medium to dark brown, stiff to very stiff, damp		
2	2-1		16		100.5	22.6
3			22			
4			17	Sandy CLAY, medium brown, very stiff to hard, damp		
5	2-2		30		100.9	23.9
6						
7						
8				Sandy CLAY, slight gravel, brown/gray/orange brown, stiff, damp to moist		
9	2-3		10		106.7	18.8
10						
11				with gravel, stiff to very stiff, moist		
12			17			
13	2-4		24	Clayey SAND w/gravel, brown, medium dense, moist	121.7	13.8
14				Test Boring Terminated at 13.75 feet Groundwater Encountered at 13.25 feet Date Drilled: May 31, 2023		

PGSoils, Inc.
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 Burlingame, CA 94010
 (650) 347-3934

Figure 4 - Log of Test Boring 2

Job: 2326



Note: 3/4" drain rock must be clean, with no fine material - (including clay, silt, and fine sand)

Not to Scale
Schematic Only

PGSoils, Inc.
 901 Rose Court
 Burlingame, CA 94010
 (650) 347-3934

Figure 5 - Subdrain Cross-Section

Job: 2326

HERITAGE TREE PERMIT APPEAL FORM

RECEIVED

ATTACHMENT B

Public Works
701 Laurel St., Menlo Park, CA 94025
tel 650-330-6720

FEB 08 2024



City of Menlo Park
City Clerk's Office

Instructions
Please complete this form and mail to the City Clerk's office (City Hall, 2nd Fl, 701 Laurel St.), along with the appeal fee of \$200. The postmark date must be within the appeal period of 15 days after staff's decision. Please make the check payable to "City of Menlo Park." Incomplete forms will not be accepted.
Only the permit applicant can appeal staff's decision based on either Criteria 1, 2, 3, or 4 and any Menlo Park resident or property owner may appeal staff's decision based on either Criteria 5 or 6.
Appellant's information
Name: Kathy Crane / Elizabeth Gheleta
Address: 227 Durham St. Menlo Park
Phone: 650-400-6734
Email address: kathy@nativeplants.com
Heritage tree information Quercus Agrifolia
Property address: 219 Durham St. Menlo Park
Tree species (if there is more than one tree, please attached a tree inventory list)
Common name: Coast Live Oak Botanical name: Quercus agrifolia
Please select which decision making criterion was used to make staff's decision:
[] Criterion 1: Death
[] Criterion 2: Tree risk rating
[] Criterion 3: Tree health rating
[] Criterion 4: Species
[X] Criterion 5: Development
[] Criterion 6: Utility inference
Please note for Criteria 5 and 6, you have additional fifteen (15) days to review project documents and to submit one (1) to five (5) feasible and reasonable alternatives for the permit applicant to consider. Refer to the administrative guidelines on the City's website for more details.

Reason to appeal (attach additional paper if needed):
1) This large native heritage oak provides shade + habitat to birds who regularly perch and use the fountain water I provide.
2) It is near the fence and could be pruned from the inside to not encroach on the development area, in fact the plan called for replacing not native pittosporum in the same place. No native plants are called for on the plan.
3) The tree is the only screen from my backyard from the proposed two story house.
4) The tree is healthy and showed no distress in the recent storm.
5) Menlo Park purports to value trees, this should be saved and valued.

Signature: K. Crane
Elizabeth K. Gheleta

Date: 2/8/24







HERITAGE TREE REMOVAL APPEAL 219 DURHAM STREET

City Arborist Team



How Construction Can Damage or Kill Trees

These are the most common types of injury that occur to trees on development sites. Because of the potential for tree loss from these injuries, care should be taken to prevent or minimize them.

Root cutting or damage—Root systems of trees are extensive and often asymmetric. It is difficult to know the exact location and depth of the roots. Roots are damaged by:

- excavation equipment cutting roots during grade changes or other activities
- trenching equipment used for gas, water, sewer, electrical, communication, irrigation, and other utility installations
- burning and/or burial of debris
- adding fill soil over roots
- altering water tables, water movement, and drainage patterns

Soil compaction—Most soil compaction results from vehicle and equipment traffic, although foot traffic and rainwater impact may also contribute to a lesser extent. The severity of compaction depends on the force per area unit applied to the soil, frequency of application, surface cover, soil texture, and soil moisture. Soils with a clay or loam texture, high moisture content, or low levels of organic matter are more susceptible to compaction than are dry or frozen, coarse-textured soils, and those high in organic matter.

Injury to the trunk, major roots, and crown—Mechanical injury can be caused by equipment used for land clearing, grading, construction, material delivery, and landscaping. This type of injury results in bark, phloem, cambium, and/or xylem injury. When these conductive and protective tissues are damaged, the capacity of the tree to transport water, nutrients, carbohydrates, and signaling compounds is reduced. Also, insects are attracted to wounds and barriers to pathogen entry are compromised in trees with this type of damage, making them susceptible to future structural and health concerns.

Heat damage—Foliage, branches, trunks, and some roots can be injured by burning debris near trees or by hot equipment exhaust. Covering foliage with transparent plastic can also result in foliar burn during sunny conditions.

Chemical damage—Certain chemicals, such as cleaning solvents, paint thinners, oils, and fuels may be lethal to the foliage and roots of trees. These types of injuries are rarely correctable and place added stress on the tree. Contaminated water or runoff from concrete trucks or other equipment can alter soil chemistry and cause root damage or disruption of nutrient uptake.

Trunk flare or root collar damage—Soil or debris placed against the trunk or over the buttress roots favor the development of certain root disease pathogens, insect pests, and encourage stem-girdling roots.



Matheny, N., Smiley, E. T., Gilpin, R., & Hauer, R. (2023). *Managing trees during construction* (3rd ed.). International Society of Arboriculture.

Table 1. Guidelines for determining tree protection zone radius for healthy, structurally sound trees (adapted from Matheny and Clark, 1998, and the British Standards Institute).

Species Tolerance to Construction Damage (from Appendix A)	Relative Tree Age	TPZ Multiplication Factor
High	Young	6
	Mature	8
	Overmature	12
Medium	Young	8
	Mature	12
	Overmature	15
Low	Young	12
	Mature	15
	Overmature	18

Matheny, N., Smiley, E. T., Gilpin, R., & Hauer, R. (2023). Managing trees during construction (3rd ed.). International Society of Arboriculture.

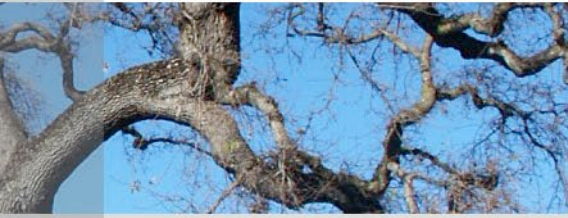
CONSERVATION SUITABILITY WORKSHEET

This worksheet is intended to guide the arborist through the evaluation of an existing tree site to determine suitability for conservation. This guide is just one tool and should not be used as a sole determinant of a tree's suitability. An arborist's judgment should override the total score if any one category is determined to be low enough to eliminate the tree from preservation status.

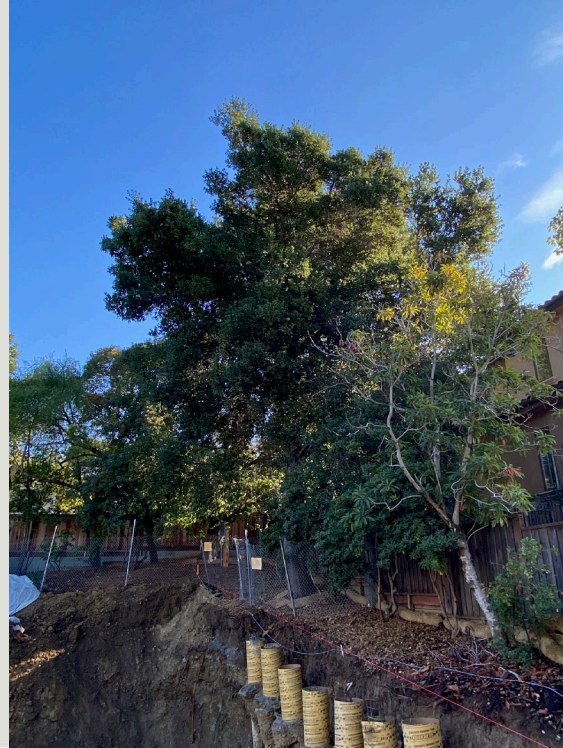
Health* (1-15)	Decline				Vigorous 15
Root Cut/Fill Distance From Trunk* (1-15 possible)	<6" per 1" dbh	6-12" per 1" dbh	1-1½' per 1" dbh	>1½' per 1" dbh	
Structural Defects** (1-15)	Many 1	Some 5	Few 10	None 15	
Construction Tolerance of Species† (1-15)	Poor 1	Poor/Mod 3	Moderate 7	Mod/Good 11	Good 15
Age (relative to typical species lifespan) (1-10)	Overmature (> ¾) 1	Mature (½ - ¾) 5	Young (< ½) 10		
Location of Construction Activity (1-10)	Within 3x dbh 1			>2x drip line 10	
Soil Quality/ Characteristics (1-10)	Poorly-drained, low organic matter and/or wet or dry site, heavy clay 1			Well-drained, high organic matter, moderate moisture 10	
Species Desirability (1-10)	Low 1			High 10	
Metric: 1" = 2.5 cm, 1' = 0.3 m *If less than 5, generally this tree would not be a candidate for preservation. **If less than 10, be aware of the risks surrounding preservation. If less than 5, generally this tree would not be a candidate for preservation. †See Appendix A					Total (100)
Suitability ratings: ≥80 = Good: High potential for longevity on the site after construction. 60-79 = Moderate: May require more in-depth management and monitoring, before, during, and after construction, and may have a shorter lifespan than those in the "good" category. <59 = Poor: These trees can be expected to decline during or after construction regardless of management.					



Matheny, N., Smiley, E. T., Gilpin, R., & Hauer, R. (2023). *Managing trees during construction* (3rd ed.). International Society of Arboriculture.



EXAMPLE OF CONSTRUCTION ROOT IMPACTS





THANK YOU



ELECTRIFICATION PERMIT STREAMLINING AND FEE WAIVER

March 20, 2024 Environmental Quality Commission meeting

AGENDA

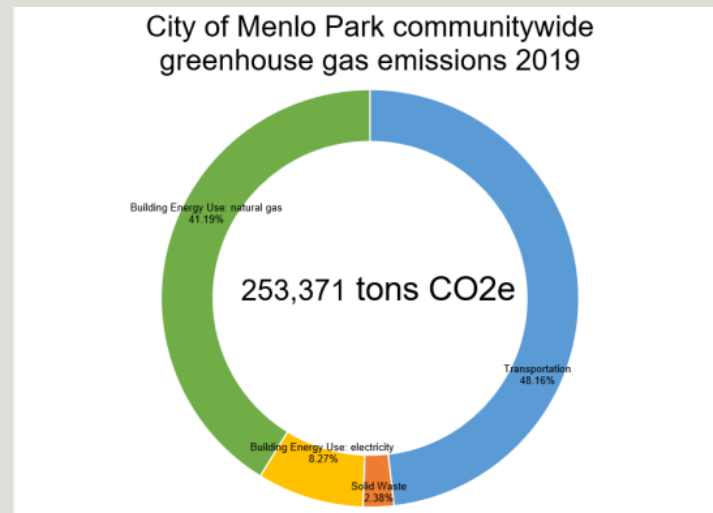
- Overview of Climate Action Plan (CAP) strategy No.1
- Why permit streamlining is important
- How the City has improved the permit process
- Planned process improvements
- Permit fee waiver update
- Staff recommendations
- Discussion

CAP STRATEGY NO.1

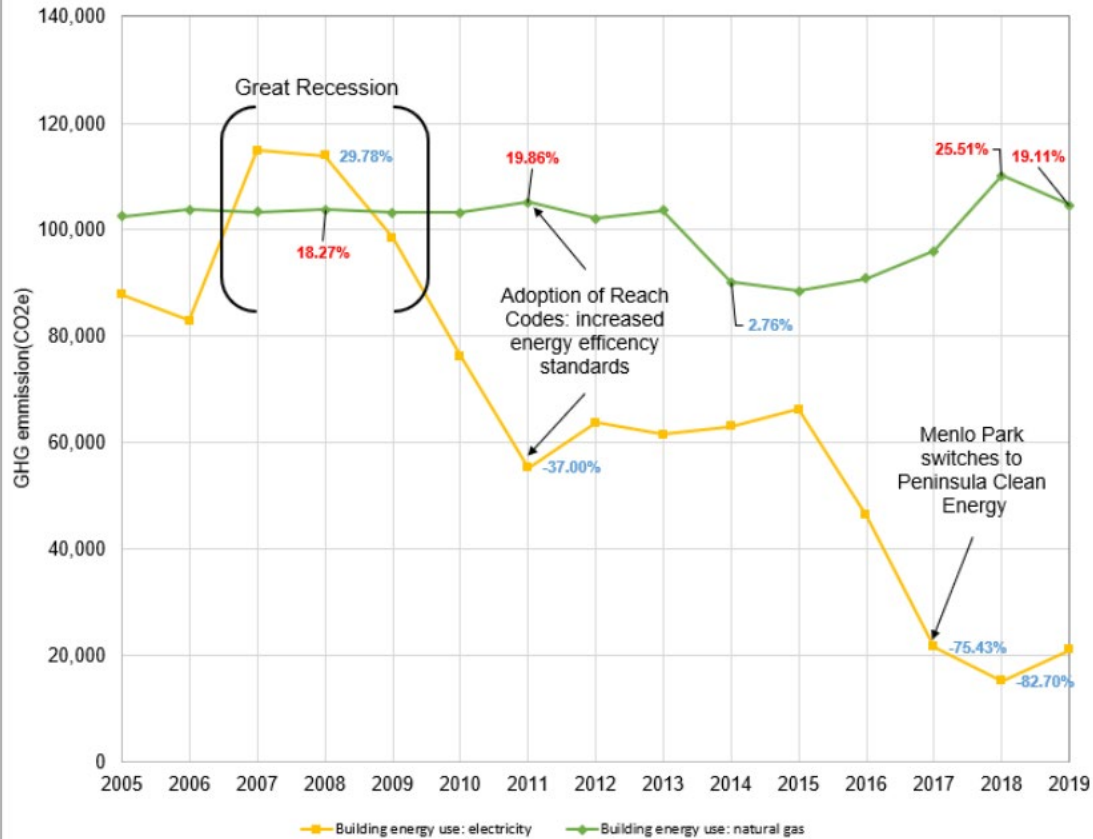
- Explore policy/program options to convert 95% of existing buildings to all-electric by 2030

- Why the goal was set
 - Natural gas usage in buildings makes up 41.2% of the community emissions
 - Peninsula Clean Energy (PCE) provides carbon-free electricity, which if paired with all-electric buildings would eliminate the emissions from building energy use

- How we are tracking it
 - Natural gas usage in buildings (primary)



%change building energy use emissions 2005-2019
(electricity versus natural gas relative to baseline)



IMPORTANCE OF PERMIT STREAMLINING

- Tailwind of carrots
 - \$4.5 million in state funding (first \$2.25 million to be deployed this spring)
 - Inflation Reduction Act incentives
 - PCE incentives
 - State incentives
- Upcoming regulation
 - Possible new versions of electrification building codes
 - BAAQMD zero-NOx rules (2027 WH & 2029 furnaces pending feasibility)
- Increase staff capacity
 - Reduce review complications
 - Improve customer service



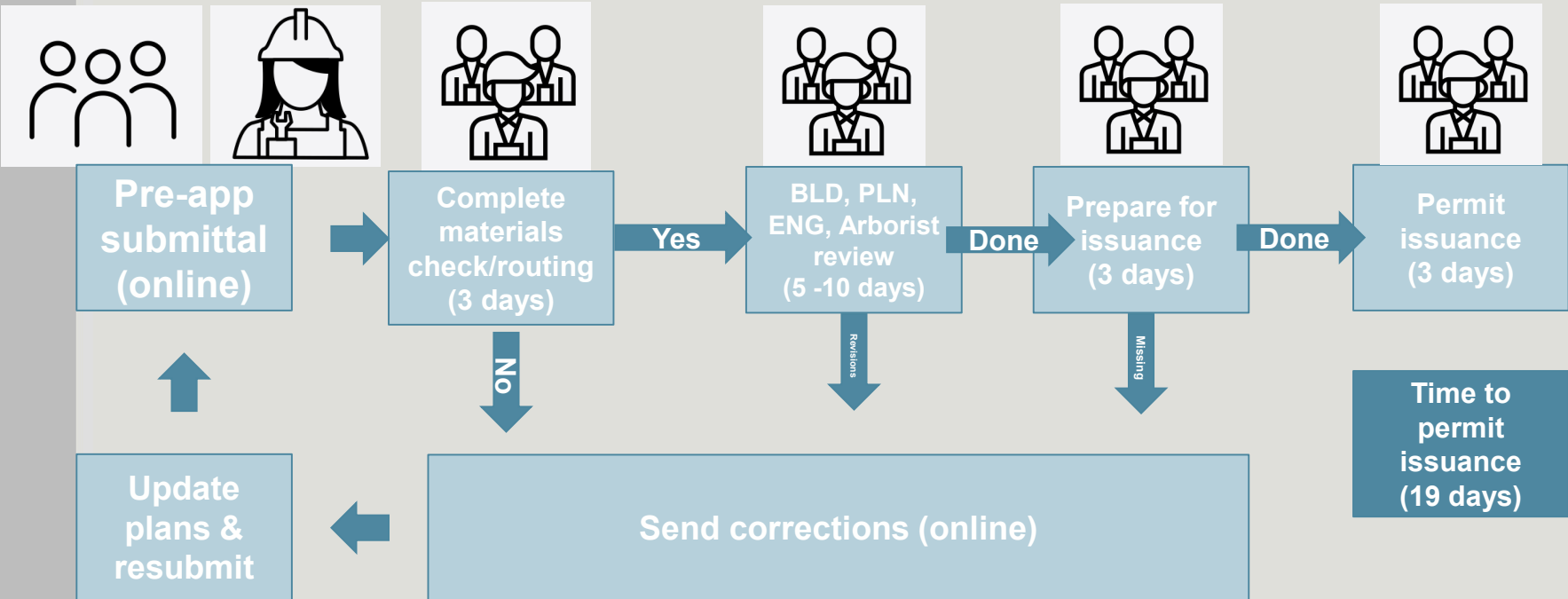
PROCESS IMPROVEMENTS TO DATE



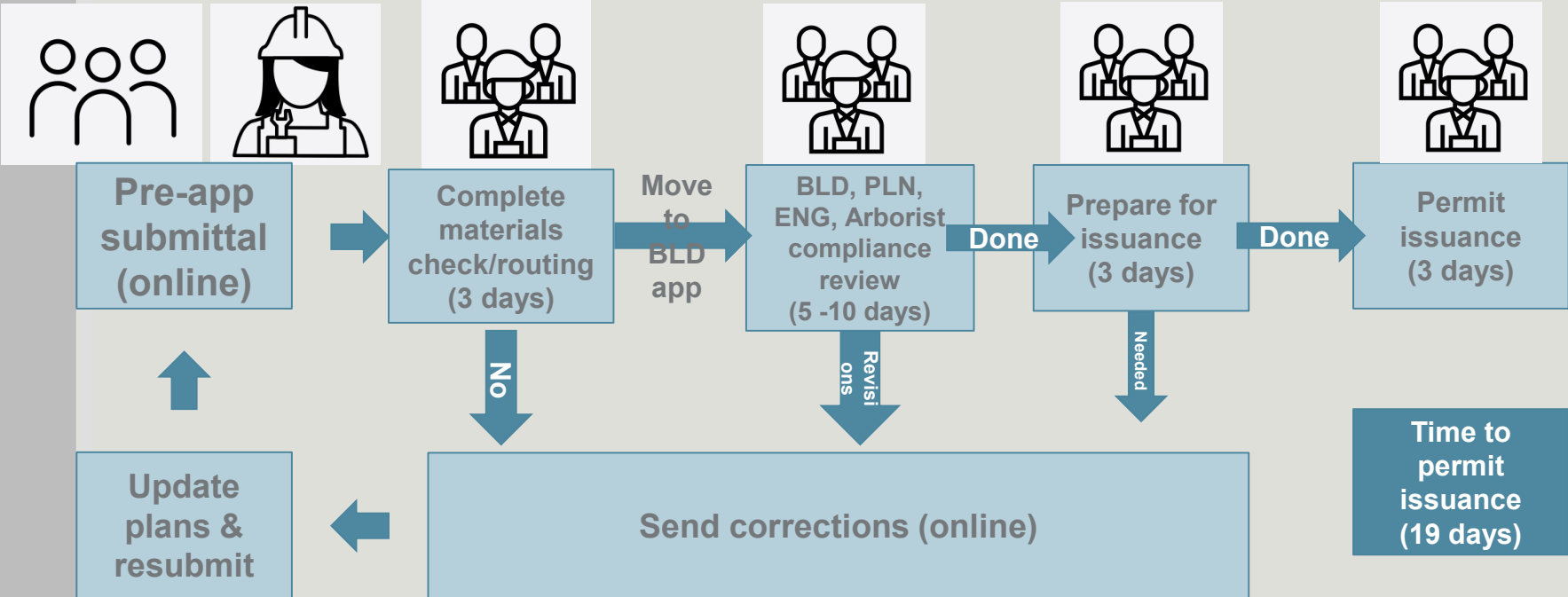
- 2020 – Online permit portal launched
- 2021 – Building professional survey
- 2022 – Electrification permit fee waiver
 - Electrification incentive and requirement webpage development
 - Building code EV, solar, and electrification reach code amendments
- 2023 – State grant application and award
 - Zoning Ordinance amendments to facilitate electrification
- 2024 – Building webpage and online permit portal UX testing
 - Development of automatic permit issuance for PV
 - Webpage and online permit portal improvements

Ongoing: Building and Planning Division staff offer meetings with applicants to review project scopes and permit requirements upon request.

CURRENT PERMIT PROCESS – LIMITED PLAN CHECK (SAME LOCATION WH)



CURRENT PERMIT PROCESS – BUILDING PERMIT





PLANNED STREAMLINING ACTIONS



- Continued process transparency and user experience improvements
- Implement state solar automatic permit issuance grant
- Development of permit templates
- Continued training for staff
- Consider revised license requirements allowing plumbers to install new circuits
- Establish a Menlo Park permit submittal contractor certificate

Ongoing: Building and Planning Division staff offer meetings with applicants to review project scopes and permit requirements upon request.



PERMIT FEE WAIVER UPDATE

- The City Council approved a permit fee waiver for electrification permit fees with the Master Fee Schedule in August 2022
- Council directed staff to return to City council when approximately \$150,000 in permit fees had been waived

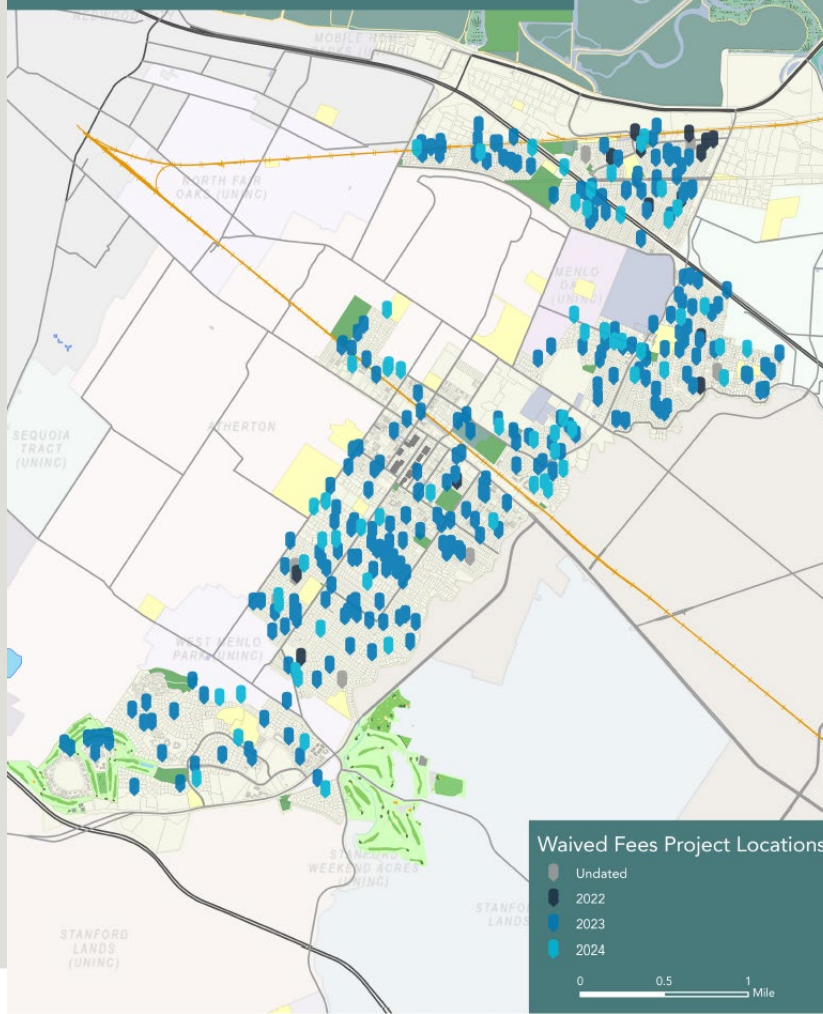
PERMIT WAIVER FORFEITED REVENUE DEC 2022 TO MAR 2024

- Total revenue forfeiture \$140,923
- 400 Total electrification projects over 16 months
- Average fiscal year forfeiture ~\$106,000
- 48% of projects are addition/alteration/remodel projects that include electrification.
- 26% water heaters

Permit type	Number of permits	Total amount waived
Electric panel upgrade	15	\$ 2,486
EV charging	6	\$ 1,909
HVAC	85	\$ 36,187
Multiple projects /other	191	\$ 79,062
Water heater	103	\$ 21,279
TOTAL	400	\$ 140,923



Waived Permit Fees for Electrification Projects City of Menlo Park





THANK YOU



ADDITIONAL DATA

COSTS TO ELECTRIFY STARTING 2024

- \$30,000 for whole home electrification
 - \$16,750 for high income earners with rebates and tax credits
 - \$7,910 for middle to low income earners with rebates and tax credits
- \$6,200 for heat pump water heater conversion
 - \$0 with rebates and tax credits for all income levels (\$5,750-\$6,200 in rebates and \$2,000 tax credit)
- \$19,000 for heat pump space heating
 - \$12,500 with rebates (\$4,500) and tax credits (\$2,000)
 - \$4,500 for middle income and low income with incentives (\$12,500 rebates and \$2,000 tax credit)

Information provided by PCE and are all-in costs (not incremental) for single-family home

COSTS TO ELECTRIFY STARTING 2024

- \$2,500 for induction cooktop
 - \$1,660 for middle and low income (\$840 rebates)
- \$1,750 for electric dryer- no rebates available
- \$4,150 for panel and electrical service upgrade for median home
 - \$2,650 for all income levels (\$1,500 from PCE)
- \$8,000 for pool heating
 - No incentives for single family
 - BayREN offers \$1,500 per pool for multifamily

Information provided by PCE and are all-in costs (not incremental) for single- family home

COSTS TO ELECTRIFY STARTING 2024

- \$12,000 for battery storage for median home
 - \$9,000 for all income levels (\$3,000 rebate SGIP)
 - \$1,800 for SASH participants or homes with resale restrictions (\$10,200 incentive)
 - \$0 for areas with two or more power outage events, resale restrictions, or enrolled in Medical Baseline Program (\$12,000 incentive)

- \$20,000 for solar installation for median home
 - \$14,000 for all income levels (\$6,000 federal tax credit)
 - Important to note that solar is a motivating factor to electrify homes

Information provided by PCE and are all-in costs (not incremental) for single- family home



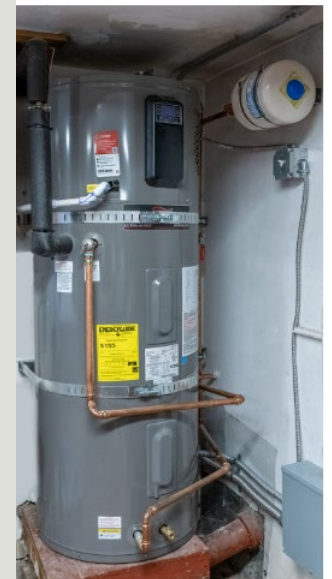
PCE BUILDING ELECTRIFICATION INCENTIVES



- \$3,000 for heat pump water heater
- \$3,500 for heat pump space heating
- \$1,500 for panel upgrade
- On-bill zero interest loan up to \$10,000
- Whole home electrification costs between \$30,000 and \$40,000- depends on conditions in the home
- Other incentives can be stacked, such as TECH and federal tax credits and rebates



Heat pump condenser evaporator unit



Installed heat pump water heater

Building Decarbonization Ad Hoc Subcommittee Report

MARCH 20, 2024

Agenda

- Ad Hoc Subcommittee History
- Climate Action Plan - CAP Goal #1
- Recommendations (Details)
- Recommendations (Summary)
- EQC Discussion

Climate Action Plan – CAP Goal #1

Explore policy/program options to convert 95% of existing buildings to all-electric by 2030

Ad Hoc Subcommittee History

Original Scope – July 19, 2023

Explore the following:

- Zoning updates
- Permit streamlining
- Flexibility/leniency programs for underserved residents during electrification permit inspections
- Reach codes or other policies to require electrification replacement in existing buildings
- Methods to cost-effectively construct all-electric lab buildings and to convert existing lab buildings to all-electric

Duration:

- Four months with an expected report to the Commission in December 2023

Revised Scope – October 18, 2023

- EQC Brainstorming Sessions in Sep/Oct 2023
- Review, Research, and Recommend Top 2025-2030 Strategies for Achieving CAP #1 Goals
- Top Five Ideas (by Commissioner votes)
 1. Reconsider burnout regulation
 2. Explore electrifying commercial buildings
 3. Instant permit process
 4. Explore turnkey partner for multi-family electrification
 5. Allocate funding or support to improve building efficiency

Revised Scope EQC Brainstorming Ideas	Building Decarb Ad Hoc Subcommittee Recommendation	Timeline for Implementation/Adoption
1. Reconsider Burnout Regulation	Dual Coverage Approach	2025
2. Explore Electrifying Commercial Buildings	Dual Coverage Approach	2025
3. Instant Permit Process	In Progress – Interdepartmental	2025
4. Explore Turnkey Partner for Multi-Family Electrification	Encourage PCE to develop program (similar to SVCE), turnkey partner, and/or BPS	2026
5. Allocate Funding or Support for Building Efficiency	Explore Building Performance Standards (BPS)	N/A

Recommendation #1 & #2

Reconsider Burnout Regulation & Explore Electrifying Commercial Buildings

- Dual Coverage Building Code Approach
 - Adopt Two (2) Building Code Ordinances Simultaneously
 - Combine 1) Zero NOx Standard with 2) Single Margin Approach as back-up
- Zero NOx Standard shall always prevail; Single Margin Approach only enforced if Zero NOx Standard suspended
- Having back-up ordinance will insure no gaps in enforcement leading to unwanted emissions
- Having dual ordinances can be a deterrent to litigation

Zero NOx Standard

- Air Quality Based Ordinance
 - Nitrogen oxides (NOx) significantly contribute to harmful air pollution
 - Produced when fossil fuels burned at high temps (building appliances/devices)
- All new construction (all building types – single family, multifamily, commercial, lab, etc.) shall be constructed with zero NOx emission equipment
- Existing Buildings - replacement of gas appliances for any reason (end of life, remodel, etc.) shall be done with zero NOx emission equipment
 - Possible exemptions for technical infeasibility and/or economic hardship
 - Possible exemption for cost if the cost to replace gas with zero NOx is X% or greater than the cost to replace gas with gas
- No exceptions (e.g. indoor/outdoor cooking, clothes drying, outdoor heating, pool heaters, etc.)
- Town of Los Altos Hills adopted a Zero NOx building code on 2/15/24

Single Margin Approach

- Energy Performance Based Ordinance
- All new construction must meet a designated energy design rating
 - Based on source energy (EDR1), efficiency (EDR2), and total energy design (EDR3)
 - Allows for mixed-fuel building construction as long as energy design rating standard is met
 - All-electric buildings meet standard
 - Mixed-fuel buildings must incorporate additional efficiency measures, increased solar, and storage to meet standard
 - Requires electric readiness (dedicated circuit, physical space, and panel capacity)
- City sets standard (margin) to be met
 - The margins can be set up to the amount that has been found to be cost-effective for both mixed-fuel and all-electric buildings
- San Jose, Santa Cruz, and SLO adopted single margin codes (Town of Atherton conducted a study session)

Recommendation #1 & #2 (continued)

Companion Programs for Equity and Impact

- Tenant Protection (anti displacement, rent protection, EJ element) / Incorporate Permitting Amnesty for Electrification
- Explore Funding Mechanisms (Climate Bond, Climate Tax, **Priority-Based City Budgeting**, Reworking Bayfront Offset Program, etc.)
 - Council to instruct Finance & Audit Commission to explore funding options
- Robust Outreach Program to Residents/Businesses and Developers/Contractors
 - Outreach to Residents / Business
 - Must be robust and continual - key to achieving goals
 - Educate community on causes / solutions
 - Provide resources (PCE programs, Switch Is On, etc.)
 - Will minimize unpermitted work that is counter to CAP goal
 - Create community dashboard to measure/track progress
 - Create atmosphere of togetherness
 - Contractor Education / Outreach
 - Bring together HVAC and plumbing firms to help educate them about the coming transition
 - City can be a central place of education and engagement around incentive programs, code changes, and phase-out dates
 - Schedule regular set of meetings to discuss how the City could help the industry and keep them informed
- Explore Zonal/Neighborhood Electrification Projects / Organize Bulk Purchases

Recommendation #1 & #2 (continued)

Companion Programs for Equity and Impact (continued)

- Consider equitable Building Performance Standards for existing high-rise multifamily and large commercial buildings (25K SF and above)
 - Complimentary to building codes
 - Powerful policy tool to decarbonize existing buildings
 - Establishes successively more ambitious requirements for building to improve performance across one or more quantitative objective measurements (e.g. reduce site energy use intensity, reduce GHG emissions, etc.)
 - For example: 25% reduction from baseline X years after adoption, 50% reduction X+Y years...100% reduction after X+Y+Z years
 - New York, Boston, Denver, Chula Vista, and five others
 - National BPS Coalition - 40+ localities with equitable BPS on the books are have pledged to do so, share best practices
 - Institute for Market Transformation - helping cities across the country
 - Published model BPS code in January 2021 (model code and other free resources at www.imt.org/bps)

Recommended that BPS adopted with action to advance social priorities

Anti-displacement, affordable housing protections packaged with law

Lab Building Electrification

- All-electric new construction

- Avia Labs (315K SF; Q2 2025) - Millbrae (Longfellow)
- Redwood LIFE (3.3M SF; entitlement process) - Redwood City (Longfellow)
- 7400 Gateway (136K SF; 2022) - Newark (Allogene)
- 751 Gateway (229K SF;) - South San Francisco (Alexandria / Genentech))
- 580 Dubuque (295K SF; Q1 2025) - South San Francisco (IQHQ)
- 300 Kansas (173K SF; now) - San Francisco (Spear Street)

- Existing building retrofits

- Building Performance Standards
- Redwood Energy's Pocket Guide To All-Electric Commercial Retrofits
- PCE Technical Assistance
- Levi Plaza - San Francisco (Jamestown)
 - All-electric conversion of gas boiler system over four-year period plus solar
 - 7.9 EQ - one week average downtime for electricity vs. six months average for gas

Recommendation #3

Instant Permit Process

- Recommend Complete Streamlining of Permitting Process
 - Look to other local jurisdictions for templates (County of San Mateo, City of Alameda, etc.)
- More clarity upfront as to what is needed from building owner/contractor
- No drawings/plan checks unless necessary for same location water heater replacements
- Reduce multiple inspectors/inspections
- Minimize multi-entity inspections (i.e. work with fire district to streamline process)
- Ensure Building Department staff applies Watt Diet concept (to avoid requiring unnecessary panel upgrades)
- **Explore sending permits to residents for same location gas to heat pump water heater replacements**
 - Great outreach tool
 - Mailer has link to page that lists criteria to be met in order to pass inspection
 - Reduces burden on building department staff

Recommendation #4

Explore Turnkey Partner for Multifamily Electrification

- Provide resources for owners of multifamily buildings
 - City could encourage Peninsula Clean Energy to develop a multifamily electrification program that provides services similar to its single family home electrification program
 - SVCE has a multifamily direct install electrification program (contract with AEA) for affordable units with \$12.5 million in funding - scheduled to launch May 2024
 - City could explore establishing a turnkey partner for retrofitting / electrifying existing multifamily buildings
 - Carbon Zero Buildings, for example
- City could adopt Building Performance Standards
 - Enacting a BPS can be a companion to building codes as a way to require, over time, electrification of larger multifamily properties

Recommendation #5

Allocate Funding or Support for Building Efficiency

- No action recommended (this idea is substantially addressed in other recommendations)

Summary of Recommendations

- City to adopt dual coverage approach to enhance building code
 - Explore companion programs for equity and impact
- City to streamline permitting process, including instant permit process for same location water heater replacements
- City to 1) support PCE development of multifamily electrification program or 2) City to explore establishing a turnkey multifamily electrification partner

EQC Discussion
