CITY OF ALBANY
CITY COUNCIL AGENDA
STAFF REPORT

Agenda Date: June 7, 2021
Reviewed by: NA

SUBJECT: Status Report on the Condition of Eucalyptus Trees on Albany Hill

REPORT BY: Margot Cunningham, Natural Areas Coordinator
Jeff Bond, Community Development Director

SUMMARY

The purpose of this agenda item is to provide the City Council a status report on the condition of eucalyptus trees on Albany Hill.

STAFF RECOMMENDATION

For information only.

BACKGROUND

Albany Hill is the most forested portion of the City. Although not technically within any state designated "wildland urban interface" (WUI) or "very high fire hazard severity zone" (VHFHSZ), Albany Hill has many of the characteristics of these designations, and as a result has been the focus of mitigation efforts of the Fire Department and other City departments for many years.

There is a complex pattern of ownership of property on Albany Hill. In summary, the west side of Albany Hill is privately owned. The existing condominium associations own portions of the west slope up towards the ridge. The existing developments granted open space easements to the City as a condition of approval, and thus are not potential development sites. There is, however, an undeveloped 11-acre site on the southwest portion of Albany Hill that is zoned for residential development. Most of the undeveloped areas on the upper part of the east side of the ridgeline are owned by the City. The lower part of the east side of Albany Hill are privately owned single family detached, and in some cases attached residences. Attachment 1 illustrates ownership.

The Eucalyptus trees on Albany Hill also are recognized as Monarch Butterfly clustering sites. The Monarch Butterfly population has been in rapid decline in recent years, and is now a candidate under the Endangered Species Act. In 2018 the City retained a qualified professional authority on Monarch biology to evaluate the habitats on the hill and make recommendations regarding the protection of the Monarch habitat.

DISCUSSION

Beginning last fall, Public Works staff noticed a sudden decline in the health of some of the Eucalyptus trees on Albany Hill. City staff observations matched observations of other professionals in other East Bay communities. In addition to eucalyptus trees, acacia trees have been heavily impacted in the East Bay.

In April researchers at UC Berkeley and US Forest Service's Pacific Southwest Research Station in Albany reached out to the City to seek permission to collect samples from several of the trees that were deteriorating as part of a Bay-Area wide study to determine the cause of the decline of eucalyptus. They recently finished a similar study of dying acacias in the Bay area.

This outreach effort at Albany Hill was reported to the Parks Recreation and Open Space Commission at their May 2021 meeting. Staff report: https://albanyca.granicus.com/MetaViewer.php?view_id=&event_id=2024&meta_id=152539

Preliminary results from the research are expected in one or two months. In the meantime, an informal working group of State, Federal, and local agencies has been formed to collaborate on both research and development of a response plan for East Bay agencies. Fire Department, Public Works, and Community Development staff participated in the first meeting of the group on June 1st.

In addition to collaborating with other agencies and UC researchers, staff has retained a consulting arborist to conduct an inspection of trees near roads and the most heavily traveled trails to evaluate the near-term risk to residences, vehicles, and passers-by. Preliminary results are expected in about a month.

Staff also plans to hire a recognized leader in wildland fire management to conduct a fuel assessment of all open space on the hill as well as have the biologist who conducted the initial Monarch habitat study return to conduct a more detailed habitat assessment in relation to fire management treatments on all open spaces.

As more information becomes available, Public Works, the Fire Department, and Community Development Department will collaborate to determine if any modifications to the City's wildland fire mitigation measures are called for. Additional updates will be provided as recommendations are further developed.

SUSTAINABILITY CONSIDERATIONS

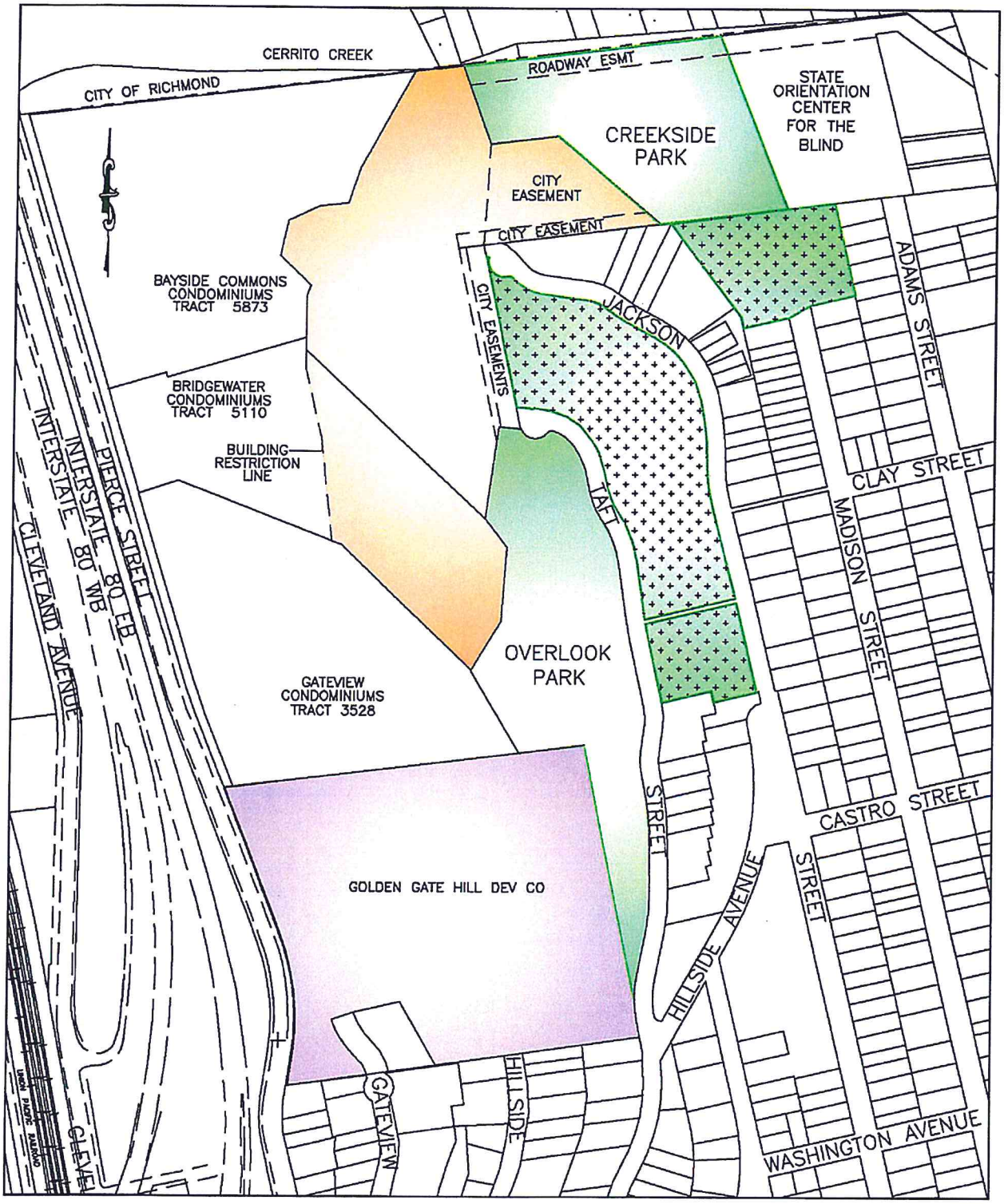
Complex ecological interactions related to drought, pests, and tree pathogens require additional study before any conclusions can be drawn about sustainability impacts.

FINANCIAL CONSIDERATIONS

Current consultant expenditures can be accommodated within existing budget appropriations for Albany Hill maintenance.

Attachments

1. Albany Hill Assessment District and Ownership Map
2. FAQ on Recent Bay Area tree mortality of Acacia, Eucalyptus and other plants



City of Albany
Assessment District No. 1996-1

Albany Hill Open Space
& Park Acquisition Sites

- City Trail/Open Space Easements(= 2 acres)
- City Open Space – Measure R (= 6.6 acres)
- City Park – Prior to Measure R (= 9 acres)
- Private Open Space (= 11 acres)
- Private Undeveloped Parcel (= 11 acres)

MAY 2011

A (4)

FIGURE 1

Frequently Asked Questions

Recent Bay Area tree mortality of Acacia, Eucalyptus and other plants

Question 1. The recent tree mortality seems to be on public properties. Are we seeing the same problems on private properties?

Answer: For the fading acacias, most of the trees were not planted, they seeded in as invasive species. So, most of the affected areas are places with openings that weren't being actively managed. Examples include cleared areas under powerlines, along freeway edges, etc. The affected areas are on lands of all ownerships that are, in general, not tended. Some of the areas with the most acacia dieback are privately owned properties, and some mortality has been observed on street trees in urban settings as well.

Question 2. How best to remove the dead trees that are contributing to the increasing fuel load in the East Bay Hills?

Answer: It is difficult to answer this question, but some general guidance and precautions follow. First, especially for the acacia, the trees may not be totally dead; their roots may remain healthy and the trees may resprout. But that consideration aside, until we learn more about the cause and extent of the dieback, Matteo Garbelotto, UC Berkeley is recommending chipping the material and composting or burning the chips. He recommends against chipping and leaving the materials on site, since the chips may harbor plant pathogens. Most importantly, to prevent potential pest movement, firewood, chips or debris should not be transported long distances.

Question 3. Could the acacia susceptibility be somehow related to its clonal propagation?

Answer: Basic biological principles would dictate that any population that reproduced clonally would have less genetic variation so be less resilient to disturbance. It is early in our understanding of what is driving this problem and its distribution pattern; we don't fully understand the importance of drought, heat stress and interactions with the *Diaporthe* and *Dothiorella* fungi that have been most frequently associated with the acacia dieback. And, we also don't understand the level of genetic variability in the populations.

Question 4. What is the plan for research going forward?

Answer: We're trying to acquire funding to answer the following key questions:

- What is the distribution and extent of the tree decline?
- Is it a new problem or has it been seen in past years?
- What species are impacted?
- What is the role of climate or climate change in the dieback?
- Is a new invasive fungus causing the dieback?

- Will the trees recover?
- How can the fuels created by the dieback be managed to reduce fire risk and also prevent a potential pathogen from being inadvertently spread?
- If trees are removed, is there any guidance as to replanting or vegetation management?
- Any special guidance for utility arborists, park managers or homeowners?

There are many other important unknowns and needs, this is just a partial list.

Question 5. Should we assume that the affected tree species already live on the 'edge' and are therefore the first to show stress due to environmental condition? Are shrubs experiencing the same problem?

Answer: In general, the acacia and eucalyptus stands are unmanaged and very dense. They are not native to the Bay Area. We don't understand why they are showing more distress than some other species. Many Monterey pines are also dying; they often die due to beetle attack when experiencing drought stress or other adverse conditions. We don't know much about how the shrub species are faring.

Question 6. What's the relationship between the affected areas and fire?

Answer: The areas showing unusual patterns of tree decline did not burn in recent fires.

Question 7. There was a bad California oak moth outbreak on the UC Berkeley campus in 2019. Was that more widespread and contributed to the canopy loss in coast live oaks?

Answer: California oak moth, *Phryganidia californica*, is a common insect in coastal forests. It can be identified by frass, silks, worms and other signs of insect activity that are typically present beneath the defoliated trees. Most trees infested by oak moth will recover. We have not seen signs of California oak moth contributing to the current tree mortality in the Bay Area. On the acacia, there is no indication that any insects are contributing to the decline.

Question 8. Some have suggested that acacias and eucalyptus have been infected by the same pathogens. Do you think this is the case, or is even possible?

Answer: It is possible that several tree species could be infected by the same fungi, but we do not know what fungi are associated with the fading eucalyptus. Matteo Garbelotto, UC Berkeley has found *Diaporthe* and *Dothierella* fungi on the acacias.

Question 9. Are most of the observed mortality pockets multispecies or single species?

Answer: We don't have a complete answer to this question. In some areas, only the acacias appear to be declining. In others, a mix of Monterey pine and eucalyptus are fading. And in some spots, other mixes of declining species are seen.

Question 10. Is the mortality due to the trees being near the end of their lifespans?

Answer: As of now, we can't authoritatively comment on the influence of tree age as a contributing factor in these declines. However, many dying acacias are very small, so mortality does not seem to be restricted to older trees.

Answers to these questions provided by:

Igor Lacan, University of California Cooperative Extension, San Mateo/San Francisco Counties, ilacan@ucanr.edu

Susan Frankel, US Forest Service, Pacific Southwest Research Station, Albany, CA; susan.frankel@usda.gov