Agenda Item A.1
DISCUSSION/ACTION ITEM
Meeting Date: September 7, 2017

TO: Mayor and Councilmembers

FROM: Michelle Greene, City Manager

CONTACT: Rosemarie Gaglione, Public Works Director
Anne Wells, Advance Planning Manager

SUBJECT: Emergency Conditions on Ellwood Mesa

RECOMMENDATIONS:

Provide direction to staff on the scope of work to remedy the conditions on Ellwood Mesa, which present a public safety emergency due to the presence of dead and dying trees.

BACKGROUND:

The City Council received a presentation on the monarch butterfly habitat conditions on Ellwood Mesa on July 18, 2017, and again on September 5, 2017. At both meetings, staff and consultants provided information on the conditions on the Mesa which create a public safety emergency due to a significant number of dead and dying eucalyptus trees. Possible options to address the public safety emergency were also reviewed. The staff report and attachments from the September 5 meeting are provided as Attachment 1.

DISCUSSION:

With the information presented to Council at the September 5 meeting, as well as the public comment received, staff is asking Council to choose a dead/hazardous tree removal option and associated scope of work to remedy the emergency conditions. A summary of the pros and cons of each option is provided as Attachment 2.

Option 1: Staff Recommendation

The staff recommendation is Option 1, which is to remove all trees rated as 0 or 1 as determined by the Althouse and Meade tree health survey results as soon as possible under an emergency permit, with a Habitat Management Plan and restoration to follow after full permitting and environmental review. This option includes the removal of over 900 trees based on the recent survey (shown in Attachment 3 of the September 5th staff report). It is important to note that removal of trees rated 0 or 1 is an essential first step in managing the current crisis in the eucalyptus grove, but that there is flexibility in

determining which subsequent restoration and management actions may follow. While the City is currently engaged in preparing a Butterfly Habitat Management Plan for the Ellwood Mesa, the plan has not been finalized and will not be available prior to the removal of the dead/hazardous trees. However, the immediate removal of dead and hazardous trees (those rated as 0 or 1) will not foreclose on any viable alternatives or constrain the development of the Butterfly Habitat Management Plan. Long-term management actions are beyond the scope of the currently proposed hazardous tree removals, but will be thoroughly detailed in the Butterfly Habitat Management Plan. The Management Plan will be vetted with the public and with various City boards and commissions along with other regulatory agencies.

Under Option 1, tree removal work could proceed immediately upon selection of a qualified contractor and under the supervision of City staff and monitors. If possible, some tree removal work would be conducted prior to monarch butterfly aggregation season which begins on October 1st. Any tree removal work after October 1st will occur in coordination with the City's biological monitor to avoid aggregation sites and provide a 300-foot buffer. After February 1, a biologist will monitor for bird-nesting sites.

Timing, permits and costs: Tree removal would begin immediately under a City and Coastal Commission-issued emergency permit following retention of a qualified contractor and continue until all identified 0 and 1-rated trees have been removed. The emergency permits will likely include habitat recovery monitoring and other actions while the Habitat Management Plan and restoration program is under development. Completion of a Habitat Management Plan and restoration program together with environmental review would proceed over the next 3-4 years and would require both a Coastal Development Permit (CDP) and development plan (DP). The CDP would also function as a follow-on permit for the tree removal work accomplished under the emergency permit. Costs for the tree removal would total approximately $1.36 million, based on 907 trees and a removal cost per tree of $1,500. This cost does not include removal of trees already down on the ground, contingencies, construction management, environmental monitoring or arborist services.

Option 2: Targeted Care for Dying Trees with Significant Value for Monarchs

In response to questions from the public regarding the effects on monarch butterfly habitat from removing all trees rated 0 or 1, the City's contract biologists and arborist from Althouse and Meade evaluated this issue in greater detail and identified a total of 26 trees with a 1 rating that are providing short-term, but significant butterfly habitat. While these trees will ultimately die due to extensive pest damage, dead sections of the trunks, and/or age, they currently provide habitat for butterflies due to their key locations within aggregation sites and presence of enough foliage (although much of it is epicormic) that they may continue to support the species in the upcoming overwintering season.

This option would place the 26 identified trees under an arborist's care, with the intent to extend the length of time for which the trees provide meaningful butterfly habitat. The trees would therefore not be included in any contract issued for tree removal and instead

would remain in the grove with oversight by an arborist. The trees that would be cared for under this option occur in the following locations, as illustrated on Attachment 4:

- Sandpiper: 1 trees
- Ellwood North: 5 trees
- Ellwood West: 4 trees
- Ellwood Main: 12 trees
- Ellwood East: 4 trees

Each of the trees receiving targeted care would be inspected by an arborist and maintained through practices, such as pruning, or other methods deemed appropriate, and would be monitored on a quarterly basis. If a tree's condition deteriorates to the point where it no longer provides significant butterfly habitat value, the tree may be removed with concurrence from an Althouse and Meade biologist.

Retention of certain 1-rated trees will necessitate some attendant measures to protect public safety, as these trees are at risk of collapsing or dropping limbs. These measures would likely include limited trail closures or fencing as long as the 1-rated trees remain. It is expected that, as the trees inevitably complete their life cycles, they would be removed and trails would be re-opened.

This option could be applied to staff's recommended action, or to any other option under consideration that would call for the removal of a 1-rated tree identified by Althouse and Meade biologists as having exceptional habitat value for monarch butterflies.

Timing, permits and costs: Permit process and timing would be the same as for the staff's recommended option (Option 1). However, costs of this option are potentially significantly higher if it requires the tree removal contractor to re-mobilize a second time to remove the remaining 26 dying trees after they ultimately expire.

Option 3: Phased Tree Removal Plan

Under this option, the City would select a limited removal area, such as a single grove, and would retain a contractor to remove all deceased/dying/hazardous eucalyptus trees (0s and 1s) from that area using the same means and methods described above for the proposed project. The area between the Ellwood North aggregation site and Devereux Creek would be a suitable area, as it is in proximity to the most popular coastal access trail in the area and is not a known butterfly aggregation site. However, a different area or areas could be selected instead. Removal of hazard trees from the specified area would proceed immediately under an emergency permit and enable a limited re-establishment of public access in the near term, once tree removal was complete. Under this option, removal of dead and dying trees from the balance of the Ellwood Mesa would proceed only after completion of a habitat management and restoration plan and comprehensive environmental review.

However, the majority of the grove (all areas outside the target area selected for this option) would need to remain closed to the public pending a solution to safety hazards.

Abating imminent hazards in a portion of the grove would hopefully have the effect of insulating butterfly habitat against risks of fire or disease, although there is some possibility that a fire or pest infestation could spread to the removal area from other nearby portions of the grove. Within the removal area, habitat conditions would be encouraged to improve through passive regeneration or active restoration efforts, and corresponding butterfly habitat suitability and use could be monitored. This option could afford an opportunity to observe and learn from the effects of dead/hazardous tree removals in a smaller area, without immediately exposing the entire Ellwood Mesa grove to these practices. The locations where trees would be removed under this option are illustrated in Attachment 5.

This option could also necessitate the fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Removal of trees from the initial area would happen immediately under an emergency permit. Removal of dead and dying trees from the balance of the Ellwood Mesa would proceed only after completion of a habitat management and restoration plan and comprehensive environmental review, once a CDP and DP had been obtained, which could take 3-4 years. Costs per tree for this option would be higher than for Option 1, because a larger removal area with more trees usually results in a lower cost per tree than areas with fewer trees; an economy of scale. There would also be multiple contractor mobilizations. There could also be some wasted erosion control measures because a future contractor needs to pass through an area previously groomed by the first contractor. Finally, costs are likely to increase over the next five years, not decrease.

Option 4: Removal of Trees Rated "0" Only

Another option is to only remove trees that were rated 0 (deceased) in the Althouse and Meade arborist assessment, but retain trees that were rated 1 (dying or hazardous trees). After careful consideration, staff and consultant team has concluded that this approach would fail to meet the objectives of the project. These trees rated as 1 are distributed throughout the groves, with the exception of the Sandpiper location, and affect nearly all trails that pass under the eucalyptus canopy.

Allowing 1 (dying or hazardous) trees to remain in place would pose a safety risk to the public, which could only be mitigated through a long-term closure of the trails system through the grove. Eucalyptus grove trail closures would be unlikely to fully eliminate the risk, as the area is very popular and the potential for noncompliance with a long-term closure is high. Additionally, allowing the 1-rated trees to remain would place the remaining trees at further risk and stress due to risk of tree falls and additional spread of pests. Thus, removing only the 0-rated trees would not fully protect public safety and would also not fulfil the objective of quickly restoring public access to the eucalyptus groves.

This option could also necessitate the fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Timing and permitting of the tree removal would be the same as for Option 1. Tree removal would occur under an emergency permit immediately upon selection of a qualified contractor. The Habitat Management Plan and restoration program would occur over 3-4 years together with the environmental review and require a CDP and development plan. Costs for the tree removal stage would be lower insofar as fewer trees would be removed. However, at this stage it is unknown if the lower number of trees needing to be removed would result in a higher per tree removal cost. As with the other options, removal of trees already down on the ground, contingencies, construction management, environmental monitoring or arborist costs would need to be added to the tree removal costs.

Option 5: Tree Removal After Habitat Management Plan Approved

Under this option, no immediate removal of deceased, dying, or hazardous trees would be performed. The existing trail closures would be made permanent, likely by fencing the groves to physically prevent access. The groves would remain in this condition until the Habitat Management Plan and an associated Restoration Plan is approved by the City and California Coastal Commission. At that time, the recommendations in the Habitat Management Plan would be used to develop and implement a restoration strategy for the grove. The primary objective of this option is to ensure that detailed study and evaluation of habitat restoration techniques along with public input occurs prior to addressing tree health issues.

However, Option 5 carries a higher level of inherent risk to public safety and the health of the habitat in the groves. The unabated presence of dying and hazardous trees will allow conditions within the grove to deteriorate while the Management Plan is prepared. Living trees within the grove would be at risk of injury due to falling hazard trees and limbs or further damaged by the spread of pests, escalating tree health decline. Management plans can be complex, particularly when multiple stakeholders are involved. Completing a plan that adequately addresses stakeholder input, including the public, City boards and commissions, and other regulatory agencies such as the California Coastal Commission may take several years. Further, while the specifics of a management strategy are not known, it is reasonable to presume that removing the deceased, dying, and hazardous trees will be the first step in any successful restoration effort.

This option could also necessitate the fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Preparation of the Habitat Management Plan and restoration program, along with environmental review and permitting via a CDP and development plan, would occur over 3-4 years. Tree removal would take place following permitting and likely need at least an additional year to complete (4-5 years total). Costs of tree removal would be higher than under the other options because the number of senescent and dead trees would likely increase with the lapse of time.

Bidding and Award Process: Once Council has given direction on the desired removal option, staff will finalize a scope of work while working concurrently with the Coastal Commission and the City of Goleta Planning Department to obtain the emergency permits. The bidding process will be done in two steps. The first step will be to pre-qualify bidders based on their previous experience with similar work and appropriate licensing. The project will then be advertised for formal bids to be submitted by those bidders who have been pre-qualified. Staff will bring an item on the award of contract to the Council for approval as well as an item to allocated funding for the project. , and for allocation of funds.

FISCAL IMPACTS:

Removal of deceased and dying or hazardous eucalyptus trees from the groves on Ellwood Mesa will require the commitment and expenditure of unallocated General Fund monies. Short-term costs would vary depending on the option selected. Option 1 would entail the highest up-front cost because all proposed removals would occur over a two-year period. Options involving phased approaches would spread the expected costs over multiple years, but per-tree costs would likely increase due to smaller quantities of trees removed per contractor mobilization, multiple mobilizations and increased inspection costs.

Exact costs have not yet been determined, but staff has obtained an estimated per tree cost by speaking with several qualified tree removal contractors. For the staff recommended option, the estimated cost would be $1,500 per tree on average. If 907 trees are removed, the cost would be $1.36 million, adding contingency, mobilization and other minor items would bring the total estimated contract to $1.7 million. This does not include the cost of removal of downed trees, or dealing with any access issues the contractor may encounter. The cost of construction management, environmental monitoring and an arborist will depend on how long the work effort takes and how many crews are used, but staff estimates $400,000 - $500,000 per year.

As noted above, staff will finalize a scope of work and advertise for formal bids on the tree removal work and bring refined costs to Council at the time of award of the tree removal contract, and will recommend an appropriation from the General Fund. At that time, Council may wish to appropriate funds from the Contingency Reserve, since funds from that reserve can be used to temporarily fund costs of emergencies. If Council chooses to use Contingency Reserve funds, all aide assistance and grant options will be sought to reimburse the Contingency Reserve, in conformance with a replenishment plan. Use of this reserve may be a better option than using unassigned fund balance in the General

Fund, because it would allow the unassigned fund balance to account for any revenue shortfalls or smaller unanticipated expenditures that could come up during the fiscal year.

ALTERNATIVES:

The Council could choose one of the alternatives summarized above and detailed in the September 5 staff report, request additional information for a different alternative or take no action.

Legal Review By:

Michael Jenkins
Interim City Attorney

Approved By:

Michelle Greene
City Manager

1. September 5, 2017 staff report
2. Tree Removal Options Pros and Cons List

Attachment 1
September 5, 2017 staff report

Agenda Item D.1
DISCUSSION/ACTION ITEM
Meeting Date: September 5, 2017

TO: Mayor and Councilmembers

FROM: Michelle Greene, City Manager

CONTACT: Rosemarie Gaglione, Public Works Director
Anne Wells, Advance Planning Manager

SUBJECT: Emergency Conditions on Ellwood Mesa

RECOMMENDATION:

A. Receive a presentation regarding conditions on Ellwood Mesa which present a public safety emergency due to the presence of dead and dying trees; and
B. Provide feedback to staff the proposed options for scope of work to remedy to the immediate public safety conditions.

BACKGROUND:

Each fall, monarch butterflies (*Danaus plexippus*) in the western United States migrate to the coast of California from various locations throughout western North America. The eucalyptus groves at the City's Ellwood Mesa Open Space/Sperling Preserve (Ellwood Mesa) support these overwintering monarchs on an annual basis. Since purchasing Ellwood Mesa in 2004, the City has conducted monarch population counts and provided monarch butterfly educational programs.

A Monarch Butterfly Inventory and Habitat Management Plan (Habitat Management Plan) project was initiated in 2011, with biological and tree expertise provided by Althouse and Meade, Inc. Field surveys, public outreach, and draft plan preparation were completed, the results of which are included on the City's website at: http://www.cityofgoleta.org/city-hall/planning-and-environmental-review/monarch-butterfly-inventory-and-habitat-management-plan. Management strategies were intended to identify low impact habitat improvement strategies to ensure long-term monarch butterfly population viability.

As noted in surveys conducted by Althouse and Meade, Inc. in 2015 and 2016, recent changes in the monarch butterfly population and distribution patterns, including the local population, prompted staff and the consultant team to conduct new technical studies on the status of the monarch butterfly habitat on Ellwood Mesa. On February 7, 2017, staff and the consultant provided the City Council and public with an update of monarch butterfly distribution and population trends, regional and local habitat condition trends,

habitat condition changes at the Ellwood Mesa, and monarch population stability threats and pressures. At the February meeting, Council requested that further studies of health of the eucalyptus groves that support the monarch butterfly overwintering population be conducted and that the results of the studies be conveyed to Council and the public.

A new contract with Althouse and Meade was approved by City Council on February 21, 2017, to allow for expanded habitat conditions surveys, additional public outreach, and the preparation of new management strategies to address changed conditions in the butterfly habitat on Ellwood Mesa. Survey work focused in the butterfly aggregation sites was completed in June 2017.

In assessing habitat conditions, Althouse and Meade used a tree health rating system to assess individual eucalyptus trees as follows:

Rating	Tree Health Description/Action
0	Deceased Tree / should be removed
1	Dying or Hazardous Tree / should be removed
2	Distressed Tree; Poor Structure, Some Pests, and Poor Health / some may need to be removed depending on their importance to aggregation site
3	Tree with Some Pests and Minor Structural Defects That Can be Mitigated / could stay
4	Tree with Minor Structural Defects and Overall Good Health / could stay
5	Relatively Healthy Tree / can be left in its natural state
6	Healthy Tree / to be left in natural state
7, 8, 9	Tree with Arboricultural Pruning/Attention or Have No Apparent Structural Defect
10	Specimen Tree with Perfect Shape, Structure and Foliage

Althouse and Meade shared the tree survey results with City Planning Department staff in early June 2017. Hundreds of trees focused in and adjacent to the butterfly aggregation sites were ranked as 0 and 1, with no trees exceeding a ranking of 4. Althouse and Meade noted that using infrared imagery and modeling, many of the remaining trees on Ellwood Mesa appeared to be similarly deceased or distressed. Althouse and Meade noted that the age of the trees (some exceeding 120 years), extended drought, and extensive pest infestations have exacerbated the tree health decline. Most notably, Althouse and Meade suggested that without action, the eucalyptus grove and butterfly aggregation sites were at further risk from spreading pests and falling dead or dying trees. These factors would also pose a safety risk to anyone who enters the grove or uses the trails within and around the grove. Further, the increased dead wood fuel load in the grove increases the risk of fire. At the conclusion of the meeting, Althouse and Meade recommended that a team of agency experts and scientists convene to discuss the results of their survey, as well as the conditions of habitats elsewhere in the region.

On June 29, 2017, the City convened a multi-agency scientist meeting and reviewed the survey results. The meeting included representatives from the U.S. Fish and Wildlife Service, the California Coastal Commission, the California State Parks Department, the Xerces Society, and the California Polytechnic State University, Biological Sciences Department. Attendees were briefed regarding the broad decline in the health of the eucalyptus trees, including the hazards to the public posed by the potential for falling trees or branches and increased risk of fire due to flammability of the dead trees. The briefing also included the overall declines in the number of overwintering monarch butterflies in the area, as measured by the 2016-2017 survey data. Finally, the group discussed the potential for dead and dying trees to adversely affect nearby, healthier trees by falling on them or through the spread of harmful insects from the dying trees. Input from the attendees was informative, and underscored the need for short-term alleviation of the risks to public safety and the future health of the eucalyptus groves, coupled with ecological restoration to provide a viable monarch butterfly habitat in the future.

On July 6, 2017, City planning staff and Althouse and Meade representatives presented the survey results and input received from the June 29, 2017 meeting to attendees at a multi-department meeting at City Hall. Outcomes from this meeting included scheduling a site visit with the City's insurance provider (CJPIA), a site visit with the Coastal Commission, consideration of strategies to ensure public safety in the eucalyptus groves, and direction to update the City Council at the upcoming Council meeting.

On July 11, 2017, City staff representing the City Manager's Office, Planning, Public Works, and Neighborhood Services and Public Safety conducted a site visit with CJPIA. During this meeting, as documented in a subsequent letter, dated July 29, 2017, to Todd Mitchell, the City's Risk Manager, CJPIA recommended that the City prepare an action plan to remove dead and dying trees (trees marked as 0 and 1 in the tree survey report), close trails, notify the public of the closures and public safety hazards, install signage, and post hazard and trail closure information on the City's website.

On July 12, 2017, City Manager's Office, Public Works, Planning, and Neighborhood Services/Public Safety staff worked collectively to identify appropriate signage notifying the public of the public safety hazard and resulting trail closures. Temporary signs were created by staff and installed on July 20th and 21st. Barricades were installed at main entry points into the eucalyptus groves to maximize notification. Permanent signs are now posted in English replacing earlier temporary signs. Signs in Spanish for these locations are on order and are expected to be installed the week of August 28. A large parking lot sign in English and Spanish has also been installed. Locations of the signs and closures are mapped as provided in Attachment 7.

On July 18, 2017, staff and the consultant team from Althouse and Meade provided the City Council and public with a status report on the results of the habitat conditions survey, recommendations from CJPIA, and short- and long-term actions to address the hazardous conditions. At that time, the Council was notified of a public workshop scheduled for July 26, 2017, with the purpose of further explaining the Ellwood Mesa habitat conditions, trail closures, and next steps to the community.

A public workshop was hosted at City Hall on July 26, 2017, and was well-attended. City and Althouse and Meade staff presented an updated version of the July 18th Council presentation using the new information that was available. In the presentation, the consultant identified 611 hazardous trees (tree rankings of 0 or 1) requiring removal and 222 trees requiring safety trimming. The consultant also clarified that additional tree surveys were necessary to complete a full inventory of tree health on Ellwood Mesa and the number of tree removals and safety trimming recommendations would likely increase. Public notification occurred following the presentation including a press release, postings on the City's websites (www.CityofGoleta.org and www.GoletaButterflyGrove.com), Nextdoor, social media and physical copies of the closure maps and Frequently Asked Questions (FAQs) were placed at the Ellwood parking lot. Both the July 18th City Council meeting and July 26th public workshop were televised and are available for viewing through our website at www.CityofGoleta.org.

On July 28, 2017, City staff and Althouse and Meade staff met with Jack Ainsworth, Executive Director, and Steve Hudson, District Director, for the California Coastal Commission (CCC) to tour the eucalyptus groves and observe the hazardous conditions of the trees. CCC staff concurred with City staff and Althouse and Meade that emergency conditions were evident, necessitating trail closure and tree removal. Given the unsafe conditions they viewed at the Ellwood Mesa, CCC staff agreed that the City could proceed with applying for an Emergency Permit without the need to also submit a habitat restoration plan at the same time, which would take longer to complete. A full restoration plan will still need to be submitted later, and a Coastal Development Permit (CDP) obtained for both the emergency tree removal work and future restoration work.

Since July 28, 2017, Althouse and Meade has continued with the tree health inventory on Ellwood Mesa. A draft tree action plan was prepared by Althouse and Meade and is included as Attachment 1. Once finalized, it will serve as part of the basis for the bid document needed to proceed with awarding a contract for tree removal work, as will the scope of tree removal work selected by Council. Planning staff and Althouse and Meade are supporting Public Works with the preparation of the bid specifications.

DISCUSSION:

The purpose of this staff report is to present Council with a recommended approach to addressing the hazardous tree conditions on Ellwood Mesa through removal of dead and dying trees and safety trimming. A project need, followed by project objectives are included below that guide the recommended project and methods for removing dead and hazardous trees. Tree removal options are presented and evaluated, and a summary table comparing the various outcomes associated with the staff recommended and alternative options is included.

At this meeting staff would like to receive feedback from the Council and the public on the identified options. A meeting is scheduled for Thursday, September 7, 2017, to resume the discussion of the habitat conditions, the tree removal options, and the ensuing restoration efforts. At that meeting, staff would like to receive direction from Council on the tree removal option to pursue, so that staff can then finalize a scope of work for the project and proceed accordingly.

Project Need

To remedy the existing hazardous conditions at Ellwood Mesa and to protect the remaining trees and butterfly habitat from further harm, it is necessary to remove the dead and dying or hazardous trees from the eucalyptus groves. This recommendation was provided by City staff and Althouse and Meade in the presentation to the City Council on July 18, 2017. This recommendation is supported by the recommendation from CJPIA. The Althouse and Meade arborist's assessment of the trees classified some trees as "deceased" (a score of 0 on the numeric 0-10 arborist's scale) and others as "dying or hazardous" (a score of 1 on the scale). Trees rated 0 and 1 were collectively recommended for removal, for reasons of human safety and risk to the remaining eucalyptus trees on Ellwood Mesa.

Project Objectives

In removing the deceased, dying, and hazardous trees, it is imperative that the short-term and long-term health of the ecosystem, including monarch overwintering habitat, remains a priority. Objectives considered in developing the proposed tree removal approach included:

1. **Protect public health and safety.** The dead and dying trees pose a safety risk to anyone who visits the eucalyptus grove, and an increased risk of fire.

2. **Maximize the potential for prompt restoration of the eucalyptus grove.** As stated in the presentation to the City Council on July 18, 2017, the future of many more drought-stressed eucalyptus trees on Ellwood Mesa is uncertain. It is prudent to allow regeneration or restoration of the habitat as soon as possible in the hope that new growth will provide at least some habitat value if/when additional trees die.

3. **Re-establish public access to the trails system as soon as possible.** The open space on Ellwood Mesa is a valuable asset to the community, and the area gets significant recreational use. This area should be made safe and reopened to the public as soon as possible without compromising butterfly habitat objectives.

Option 1: Staff Recommendation

The staff recommended action is to remove all trees rated as 0 or 1 as determined by Althouse and Meade survey results. This includes the removal of over 900 trees based on a recent survey (shown in Attachment 3). The number of tree removals is expected to increase as tree health decline continues. It is important to note that removal of the trees rated 0 and 1 is an essential first step in managing the current crisis in the eucalyptus grove, but that there is significant flexibility in determining which subsequent restoration and management actions may follow. While the City is currently engaged in preparing a Habitat Management Plan for the Ellwood Mesa butterfly habitats, the plan has not been finalized and will not be available prior to the removal of the dead/hazardous trees. However, the immediate removal of dead and hazardous trees (those rated as 0 or 1) will not foreclose on any viable alternatives or constrain the development of the Habitat

Management Plan. Long-term management actions are beyond the scope of the currently proposed hazardous tree removals, but will be thoroughly considered in the Habitat Management Plan. The Habitat Management Plan will be vetted with the public and with various City boards and commissions along with other regulatory agencies.

Under Option 1, tree removal work could proceed immediately upon selection of a qualified contractor. If possible, conduct tree work prior to monarch butterfly aggregation season which begins on October 1st. Any tree work after October 1st, shall occur in coordination with City's Biologist to avoid aggregation sites and provide a 300-foot buffer. After February 1, a biologist would monitor for bird-nesting sites.

Timing, permits and costs: Option 1, tree removal would begin immediately under an emergency permit following retention of a qualified contractor and continue until all identified 0 and 1-rated trees had been removed. Completion of a Habitat Management Plan and restoration program together with environmental review would proceed over the next 3-4 years and would require both a CDP and development plan (DP). The CDP would also function as a follow-on permit for the tree removal work accomplished under the emergency permit. Costs for the tree removal would total approximately $1.36 million, based on 907 trees and a removal cost per tree of $1,500. This cost does not include contingencies, construction management, environmental monitoring or arborist services.

In addition to the recommended action described above (Option 1), staff evaluated four other alternatives for consideration. These options are described below and generally seek to delay some or all tree removals to a later time in the interest of achieving greater progress on the butterfly Habitat Management Plan prior to removing dead or hazardous trees.

Option 2: Targeted Care for Dying Trees with Significant Value for Monarchs

In response to questions from the public regarding the effects on monarch butterfly habitat from removing all trees rated 0 or 1, the City's contract biologists and arborist from Althouse and Meade evaluated this issue in greater detail and identified a total of 26 trees with a 1 rating that are providing short-term, but significant butterfly habitat. While these trees will ultimately die due to extensive pest damage, dead sections of the trunks, and/or age, they currently provide habitat for butterflies due to their key locations within aggregation sites and presence of enough foliage (although much of it is epicormic) that they may continue to support the species in the upcoming overwintering season.

This option would place the 26 identified trees under an arborist's care, with the intent to extend the length of time for which the trees provide meaningful butterfly habitat. The trees would therefore not be included in any contract issued for tree removal and instead would remain in the grove with oversight by an arborist. The trees that would be cared for under this option occur in the following locations, as illustrated on Attachment 4:

- Sandpiper: 1 trees
- Ellwood North: 5 trees
- Ellwood West: 4 trees

- Ellwood Main: 12 trees
- Ellwood East: 4 trees

Each of the trees receiving targeted care would be inspected by an arborist and maintained through practices, such as pruning, or other methods deemed appropriate, and would be monitored on a quarterly basis. If a tree's condition deteriorates to the point where it no longer provides significant butterfly habitat value, the tree may be removed with concurrence from an Althouse and Meade biologist.

Retention of certain 1-rated trees will necessitate some attendant measures to protect public safety, as these trees are at risk of collapsing or dropping limbs. These measures would likely include limited trail closures or fencing as long as the 1-rated trees remain. It is expected that, as the trees inevitably complete their life cycles, they would be removed and trails would be re-opened.

This option could be applied to staff's recommended action, or to any other option under consideration that would call for the removal of a 1-rated tree identified by Althouse and Meade biologists as having exceptional habitat value for monarch butterflies.

Timing, permits and costs: Permit process and timing would be the same as for the staff's recommended option (Option 1). However, costs of this option are potentially significantly higher if it requires the tree removal contractor to re-mobilize a second time to remove the remaining 26 dying trees after they ultimately expire.

Option 3: Phased Tree Removal Plan

Under this option, the City would select a limited removal area, such as a single grove, and would retain a contractor to remove all deceased/dying/hazardous eucalyptus trees (0s and 1s) from that area using the same means and methods described above for the proposed project. The area between the Ellwood North aggregation site and Devereux Creek would be a suitable area, as it is in proximity to the most popular coastal access trail in the area and is not a known butterfly aggregation site. However, a different area or areas could be selected instead. Removal of hazard trees from the specified area would proceed immediately under an emergency permit and enable a limited re-establishment of public access in the near term, once tree removal was complete. Under this option, removal of dead and dying trees from the balance of the Ellwood Mesa would proceed only after completion of a habitat management and restoration plan and comprehensive environmental review.

However, the majority of the grove (all areas outside the target area selected for this option) would need to remain closed to the public pending a solution to safety hazards. Abating imminent hazards in a portion of the grove would hopefully have the effect of insulating butterfly habitat against risks of fire or disease, although there is some possibility that a fire or pest infestation could spread to the removal area from other nearby portions of the grove. Within the removal area, habitat conditions would be encouraged to improve through passive regeneration or active restoration efforts, and corresponding butterfly habitat suitability and use could be monitored. This option could afford an opportunity to observe and learn from the effects of dead/hazardous tree removals in a smaller area, without immediately exposing the entire Ellwood Mesa grove

to these practices. The locations where trees would be removed under this option are illustrated in Attachment 5.

This option could also necessitate fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Removal of trees from the initial area would happen immediately under an emergency permit. Removal of dead and dying trees from the balance of the Ellwood Mesa would proceed only after completion of a habitat management and restoration plan and comprehensive environmental review, once a CDP and DP had been obtained, which could take 3-4 years. Costs per tree for this option would be higher than for Option 1, because a larger removal area with more trees usually results in a lower cost per tree than areas with fewer trees; an economy of scale. There would also be multiple contractor mobilizations. There could also be some wasted erosion control measures because a future contractor needs to pass through an area previously groomed by the first contractor. Finally, costs are likely to increase over the next five years, not decrease.

Option 4: Removal of Trees Rated "0" Only

Another option is to only remove trees that were rated 0 (deceased) in the Althouse and Meade arborist assessment, but retain trees that were rated 1 (dying or hazardous trees). After careful consideration, staff and consultant team has concluded that this approach would fail to meet the objectives of the project. These trees rated as 1 are distributed throughout the groves, with the exception of the Sandpiper location, and affect nearly all trails that pass under the eucalyptus canopy.

Allowing 1 (dying or hazardous) trees to remain in place would pose a safety risk to the public, which could only be mitigated through a long-term closure of the trails system through the grove. Eucalyptus grove trail closures would be unlikely to fully eliminate the risk, as the area is very popular and the potential for noncompliance with a long-term closure is high. Additionally, allowing the 1-rated trees to remain would place the remaining trees at further risk and stress due to risk of tree falls and additional spread of pests. Thus, removing only the 0-rated trees would not fully protect public safety and would also not fulfil the objective of quickly restoring public access to the eucalyptus groves.

This option could also necessitate fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Timing and permitting of the tree removal would be the same as for Option 1. Tree removal would occur under an emergency permit immediately upon selection of a qualified contractor. The Habitat Management Plan and

restoration program would occur over 3-4 years together with the environmental review and require a CDP and development plan. Costs for the tree removal stage would be lower insofar as fewer trees would be removed. However, at this stage it is unknown if the lower number of trees needing to be removed would result in a higher per tree removal cost. As with the other options, contingency, construction management, environmental monitoring or arborist costs would need to be added to the tree removal costs.

Option 5: Tree Removal After Habitat Management Plan Approved

Under this option, no immediate removals of deceased, dying, or hazardous trees would be performed. The existing trail closures would be made permanent, likely by fencing the groves to physically prevent access. The groves would remain in this condition until the Habitat Management Plan and an associated Restoration Plan is approved by the City and California Coastal Commission. At that time, the recommendations in the Habitat Management Plan would be used to develop and implement a restoration strategy for the grove. The primary objective of this option is to ensure that detailed study and evaluation of habitat restoration techniques along with public input occurs prior to addressing tree health issues.

However, Option 5 carries a higher level of inherent risk to public safety and the health of the habitat in the groves. The unabated presence of dying and hazardous trees will allow conditions within the grove to deteriorate while the Management Plan is prepared. Living trees within the grove would be at risk of injury due to falling hazard trees and limbs or further damaged by the spread of pests, escalating tree health decline. Management plans can be complex, particularly when multiple stakeholders are involved. Completing a plan that adequately addresses stakeholder input, including the public, City boards and commissions, and other regulatory agencies such as the California Coastal Commission may take several years. Further, while the specifics of a management strategy are not known, it is reasonable to presume that removing the deceased, dying, and hazardous trees will be the first step in any successful restoration effort.

This option could also necessitate fencing off of areas where work is not occurring to protect the public from the risk of dead and dying trees, as well as to allow for additional protection of the habitat in these areas. Fencing would prevent homeless encampments from being set up in these areas which causes a risk for those individuals and staff who have to clean up the camps.

Timing, permits and costs: Preparation of the Habitat Management Plan and restoration program, along with environmental review and permitting via a CDP and development plan, would occur over 3-4 years. Tree removal would take place following permitting and likely need at least an additional year to complete (4-5 years total). Costs of tree removal would be higher than under the other options because the number of senescent and dead trees would likely increase with the lapse of time.

Attachment 2 provides a comparison of the options.

Contractor Selection The selection of a qualified contractor will be critical. A list of possible tree vendors was compiled using input from the U.S. Forest Service, California

Department of Forestry, Santa Barbara County Fire, and the City's prior Community Wildlife Prevention Plan consultant, GEO Elements. A Request for Qualifications letter will go out to contractors who are interested in bidding on the tree removal. Each contractor will have to submit a Statement of Qualifications detailing their past experience with similar jobs with sensitive habitat. This will allow staff to determine which contractors have the expertise and experience in tree removal without harming existing trees and habitat. Skill and experience in removing trees in dense, environmentally sensitive habitats will be an important evaluation criterion to be used in qualifying the tree removal contractor. Contractors who are pre-qualified will receive an invitation to submit competitive bids on the project, once the scope of work is selected by the Council. The contract will be awarded to the lowest responsible and pre-qualified bidder.

Proposed Methods for Removing Dead/Hazardous Trees

While there is a demonstrated need to remove trees rated as 0 and 1 from the Ellwood Mesa, any tree removals must be conducted in a way that minimizes environmental impacts. The City's methods for the tree removals will be included in the contractor's bid specifications. Generally, the trees would be removed as follows:

- Securing areas where tree removal work will be conducted from public access during the time that work is being conducted. Ensuring the safety of workers and the community at large is of paramount importance.

- Construction notification signs will be posted at the staging and access areas alerting the public to the presence of heavy equipment and tree work.

- The removal operation is expected to require up to four work crews: a crew cutting trees, a crew transporting the cut material to a grinding/processing area outside the grove, a crew operating the grinding/processing equipment, and a crew spreading the ground mulch.

- All trees to be removed will be specified by the City in consultation with Althouse and Meade and in conformance with their recommendations, and will only include deceased and dying/hazardous trees (as determined by the Althouse and Meade arborist's assessment presented to the City Council on July 18, 2017, or as updated). The tree removal contractor will not be expected, nor authorized, to make determinations as to whether a particular tree should be removed.

- Safety trimming of trees rated 2 or higher may be authorized, if warranted by safety concerns and directed by the City in consultation with Althouse and Meade and in conformance with their recommendations.

- Trees will be cut approximately flush with the ground, in a manner that encourages stump-sprouting.

- The contractor will propose best management practices for tree disposal, including options such as chipping, hauling, burning, and incinerating. Grinding and spreading material on-site is preferred, because this method neutralizes pests, helps to control erosion, and maintains air quality (no fire required).

- Cut material will be processed promptly, and will not be stockpiled on-site for more than two weeks, unless weather conditions or an emergency situation pauses working days.

- Staging areas and access routes will be designated by the City, and will be sited to minimize damage to trees and understory vegetation. The proposed staging areas and access routes are illustrated on Attachment 6.

- Onsite construction vehicle use will be minimized to the extent practicable. Vehicles will utilize rubber tires to minimize soil disturbance. Existing roads and dirt paths will be utilized for access.

- Use of the parking area off of Hollister Avenue for work crews will be limited to five spaces. Carpooling will be required.

Environmental Protection During Project Implementation

The bid specifications will include requirements for environmental protection measures, including, but not limited to, the items described below. For purposes of these measures, the following definitions apply:

- **Althouse and Meade Biologist** – Dr. Dan Meade, or a biologist under Dr. Meade's direct supervision.

- **City-approved Biologist** – A biologist approved by the City of Goleta to conduct biological compliance inspections.

- **City-approved Arborist** – An International Society of Arboriculture (ISA)-certified arborist approved by the City of Goleta to monitor tree removal work and make recommendations regarding tree health and treatment.

- **Environmental Monitor** – A professional contracted by the City to oversee compliance with environmental conditions during project implementation.

Environmental protection measures include, but are not limited to, the following:

- Worker environmental sensitivity training will be conducted for all onsite workers prior to start of work. Training will be provided by the City and the City's consulting specialists, including representatives from Althouse and Meade.
- Pre-construction nesting bird surveys will be conducted by the City's biologist prior to start of work during the nesting bird season (March 1 through August 31). If nesting birds are observed, tree removal will avoid the nesting area and a protective buffer at the recommendation of the City-approved biologist.
- Butterfly aggregation surveys will be conducted throughout the work effort in the months of October through March. Tree removal activity will avoid all active aggregation sites, including a protective buffer, at the recommendation of the City's biologist from Althouse and Meade.

- A City-approved arborist will use Althouse and Meade's data to mark the trees to be removed. The markings will be clearly delineated with paint or flagging. If paint fades or flagging is removed, the arborist will remark the trees prior to any/all removals.
- The contractor will be directed to take extreme care to ensure that non-target trees (i.e., healthy trees that are not identified for removal) are not inadvertently damaged during the tree removals. A City-approved arborist will be onsite to ensure that the removals are consistent with the Althouse and Meade tree survey results. The arborist will maintain daily logs noting the tree number, progress, and any incidental impacts to adjacent trees (including roots, canopies, and trunks). Should the arborist determine that an unlisted tree has been damaged and needs removal, the arborist will document and photograph the tree condition and the justification for proposed removal. Actual removal must be authorized by both the Planning and the Public Works Directors.
- Soil disturbance will be minimized and appropriate erosion controls will be used.
- Construction equipment staging, fueling, and storage areas shall be located outside of the eucalyptus groves (the outer dripline plus 5 feet), and no closer than 100 feet from Devereux Creek.
- Equipment utilized for tree removals will not create ruts in the soil or cause soil erosion on the trails, roads, or undisturbed ground. Wooden boards or other protective devices (rubber matting) should be placed within groves and under heavy equipment to distribute the weight of any heavy machinery used during removal (trucks, cranes, etc.). Should ruts form, the contractor will be required to restore the grade to as close to pre-project as possible and install appropriate erosion control measures.
- Pesticides and herbicides will not be used.
- Fire suppression equipment will be onsite at each work area.
- The contractor will follow the instruction of the City's onsite construction manager, arborist and/or environmental monitor in an effort to minimize tree removal impacts to adjacent habitat and public access.
- No work will be done on days when the risk of forest fire is highest. The tree removal contractor will monitor wind speeds for worker safety.

Permitting and Environmental Review

The proposed removal activities would be subject to review and approval by a number of regulatory agencies. However, due to the severity of the current conditions in the eucalyptus groves, combined with the popularity of this area and the recreational use that is occurring on trails within the groves despite the posted closures, the current situation is an "emergency" as defined by the California Environmental Quality Act (CEQA), California Coastal Act, the City's Municipal Code, and other pertinent statutes. As summarized below, treatment of the project as an emergency allows for expedited processing and exemption from environmental review.

CEQA defines "emergency" as:

> *A sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.* (Pub. Resources Code, § 15359.)

The definition found in the California Coastal Commission's Coastal Act regulations is nearly identical, defining an emergency as:

> *A sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential public services.* (14 CCR §13009)

The City's Municipal Code defines an emergency as:

> *A sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services. The definition extends to efforts by a public agency or utility performing a public service to restore, repair or maintain public works, utilities or services which have been destroyed, damaged, or interrupted by natural disaster, serious accident, or in other cases of emergency*. (Coastal Zoning Ordinance § 35-58).

CEQA, the Coastal Act, and the City's Municipal Code acknowledge the importance of allowing response activities to occur expeditiously in the event of an emergency, and provide expedited procedures to accommodate emergency activities. Under CEQA, expedited processing of emergency responses is afforded by language in the statute providing that an agency need not perform environmental review prior to approving "specific actions necessary to prevent or mitigate an emergency." (Public Resources Code Section 21080(b)(4)). The time savings from using this provision is significant: an Initial Study/Mitigated Negative Declaration process typically takes four to six months, and an Environmental Impact Report (EIR) process can take 18 months or more.

Under Section 30611 of the Coastal Act, the requirement to obtain a Coastal Development Permit may be waived in cases of emergency. Notice to the Executive Director of the Coastal Commission is required and the City provided this notification to the Executive Director at a site visit on July 27, 2017. In this case, a traditional Coastal Development Permit is not issued and instead, the City will obtain an Emergency Permit consistent with the Coastal Act and the City's Municipal Code.

If work within the channel of Devereux Creek is necessary, authorization from the California Department of Fish and Wildlife (CDFW) and/or U.S. Army Corps of Engineers (USACE) may be required, as these agencies administer federal and state programs regulating activities that impact waters and streams. However, both of these agency programs allow for the abatement of emergency conditions on an expedited basis. The USACE has an established Regional General Permit for emergency activities, which allows an applicant addressing an emergency to submit an abbreviated notification form, rather than the more detailed package that the agency typically requires. Emergency

authorizations from the USACE are frequently granted within 48 hours. The CDFW allows its regulatory process to be completed after the fact where emergencies are concerned, thereby avoiding any potential delays.

Based on the various applicable definitions of “emergency” by the permitting and regulatory bodies, the current situation constitutes an emergency. The emergency situation means that the typical permitting and environmental review is not required for the tree removal work. Follow-up restoration and the Habitat Management Plan, however, will require permitting and CEQA.

GENERAL PLAN/COASTAL LAND USE PLAN CONSISTENCY:

Neither staff’s recommended action nor either of the alternatives considered in this staff report would involve the construction of permanent development or changes in land use. Accordingly, the selected project would not conflict with any policies in the General Plan/Coastal Land Use Plan (GP/CLUP) regarding allowable land uses or the siting of development. However, certain GP/CLUP policies protect resources against short-term disruption; consistency with these policies is addressed below.

Policy OS 2: Vertical Access to the Shoreline [GP/CP]. This policy seeks to expand and enhance public vertical access to Goleta’s shoreline. The Ellwood Mesa is transected by a network of publicly accessible trails, several of which connect to beach access points. Although the any selected project would close certain segments of this trails network until safety concerns can be addressed, the network is robust enough that the closures would not inhibit vertical access between the coast and the parking area or nearby residences. The proposed action is consistent with Policy OS 2.

Policy OS 3.2: Coastal Access Parking. [GP/CP]. This policy requires that adequate public parking for coastal access be provided and maintained. The Ellwood Mesa has limited parking, and is served primarily by a single parking lot off Hollister Avenue. If the selected project includes tree removal, there may be a need to utilize a portion of the parking space within this lot for worker parking. The project would be conditioned to require carpooling, and will be prohibited from using more than five (5) parking spaces within the Ellwood Mesa lot. These restrictions would ensure that parking or coastal access remains adequate, and that the project is consistent with Policy OS 3.2.

Policy CE 1.6: [GP/CP] and Coastal Act Section 30240: Protection of ESHAs. This policy and section of the Coastal Act require that Environmentally Sensitive Habitat Areas (ESHA) be protected against significant disruption of habitat values and specify that only certain resource-dependent uses may be allowed within ESHA. The eucalyptus groves on Ellwood Mesa are designated as ESHA, because they support nesting raptors and overwintering aggregations of monarch butterflies. The removal of deceased, dying, and hazardous trees from the eucalyptus grove is being proposed as a habitat enhancement measure, in direct response to observations and expert opinion that butterfly habitat conditions in the grove have deteriorated, and will likely continue to worsen in the presence of these trees. Any selected project would enhance ESHA values, and is consistent with Policy CE 1.6 and Section 30240 of the Coastal Act.

Consistent with this policy, tree removal work could proceed immediately upon selection of a qualified consultant. During the butterfly overwintering period, tree removal work would avoid areas of known butterfly aggregations. At the onset of the overwintering period, monarchs would avoid aggregating in areas where work is being performed. Beginning in February, a biologist would monitor the grove for bird nesting sites and let the contractor know to avoid those areas.

Policy CE 1.10: Management of ESHAs. [GP/CP]. This policy directs that the use of herbicides, pesticides, and other toxic substances that may have the potential to degrade ESHAs be minimized. Using chemicals of this nature is not proposed, and the proposed options would be consistent with Policy CE 1.10.

Policy CE 2.3: Allowable Uses/Activities in Streamside Protection Areas. [GP/CP]. This policy sets forth allowable uses that may be approved within Stream Protection Areas. Portions of the eucalyptus grove on Ellwood Mesa fall within a Stream Protection Area, as Devereux Creek and its tributary drainages flow through the grove in several locations. Policy CE 2.3 specifies that resource restoration or enhancement projects are allowable uses within Stream Protection Areas, and the proposed options meet this definition because its primary objective is to preserve and enhance monarch butterfly habitat. Any proposed action is consistent with Policy CE 2.3.

Policy CE 4.4: Protection of Monarch Butterfly ESHAs. [GP/CP]. This policy protects monarch butterfly ESHAs against significant disruption of habitat values, and specifies that only certain compatible uses are allowed within these ESHAs or their buffers. The policy specifies that removal of vegetation within monarch ESHAs is prohibited, except for minor pruning of trees or removal of dead trees and debris that are a threat to public safety. In all cases, the trees proposed for removal are deceased, dying, and/or pose a hazard to public safety. Further, their removal would serve to alleviate an existing threat to the remaining trees and habitat values within the ESHAs. Accordingly, removal of these trees is consistent with Policy CE 4.4.

Consistent with this policy, tree removal work could proceed immediately upon selection of a qualified consultant, should the Council choose an option that includes tree removal. As noted above in the report, during the butterfly overwintering period tree removal work would avoid areas of known butterfly aggregations.

CONCLUSION:

In summary, staff has evaluated a range of options for addressing the current safety emergency and eucalyptus tree health crisis on Ellwood Mesa. Option 1, staff's recommended option, is the only alternative that offers a rapid abatement of the hazardous conditions, and associated re-establishment of public access on recreational trails within the groves. This option would also qualify for emergency permitting, expediting the start of implementation. Once the hazard is abated, remaining habitat is better protected and the tong-term restoration and management of the groves would be addressed by a separate Habitat Management Plan under a CDP.

The combination of Option 2 with Option 1 would add additional environmental protection for butterfly habitat areas, particularly in the upcoming overwintering season, at a

relatively modest additional cost. Should Council direct staff to proceed with Option 1, Option 2 can be included if Council elects to do so.

FISCAL IMPACTS:

Removal of deceased and dying or hazardous eucalyptus trees from the groves on Ellwood Mesa will require the commitment and expenditure of unallocated General Fund monies. Short-term costs would vary depending on the option selected. Option 1 would entail the highest up-front cost because all proposed removals would occur over a two-year period. Options involving phased approaches would spread the expected costs over multiple years, but per-tree costs would likely increase due to smaller quantities of trees removed per contractor mobilization, multiple mobilizations and increased inspection costs. With each mobilization the contractor would have to move in a lot of equipment, and that cost gets spread out over the number of trees removed.

Exact costs have not yet been determined, but staff has obtained an estimated per tree cost by speaking with several qualified tree removal contractors. For the staff recommended option, the estimated cost would be $1,500 per tree on average. If 907 trees are removed, the cost would be $1.36 million, adding contingency, mobilization and other minor items would bring the total estimated contract to $1.7 million. The cost of construction management, environmental monitoring and an arborist will depend on how long the work effort takes and how many crews are used.

Once Council has given direction on the desired removal option, staff will finalize a scope of work and advertise for formal bids on the tree removal work. Staff will bring refined costs to Council at the time of award of the tree removal contract, and will recommend an appropriation from the General Fund. At that time, Council may wish to appropriate funds from the Contingency Reserve, since funds from that reserve can be used to temporarily fund costs of emergencies. If Council chooses to use Contingency Reserve funds, all aide assistance and grant options will be sought to reimburse the Contingency Reserve, in conformance with a replenishment plan. Use of this reserve may be a better option than using unassigned fund balance in the General Fund, because it would allow the unassigned fund balance to account for any revenue shortfalls or smaller unanticipated expenditures that could come up during the fiscal year.

Legal Review By:

Michael Jenkins
Interim City Attorney

Approved By:

Michelle Greene
City Manager

ATTACHMENTS:

Attachment 1: Tree Action Plan

Attachment 2: Comparison of Options

Attachment 3: Map of Option 1

Attachment 4: Map of Option 2

Attachment 5: Map of Option 3

Attachment 6: Staging Areas

Attachment 7: Current Trail Closures

Attachment 1

Tree Action Plan

Draft
Ellwood Mesa Open Space / Sperling Preserve
Tree Safety Action Plan

August 8, 2017

Prepared for:

CITY OF GOLETA

Prepared by:

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

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Contents

Draft
City of Goleta Ellwood Mesa Open Space / Sperling Preserve Tree Safety Action Plan

1.0 Introduction

1.1 Document Preparers

This Ellwood Mesa Open Space/Sperling Preserve (Ellwood Mesa) Tree Safety Action Plan (Plan) was prepared by Althouse and Meade, Inc. Primary authors were from Althouse and Meade staff including Daniel E. Meade, Ph.D. in Biology, and Cory Meyer, certified arborist. City of Goleta staff provided review and input to Althouse and Meade, Inc.

1.2 Problem of Immediate Concern

The eucalyptus grove (Figure 1) on Ellwood Mesa suffered during an historic five-year drought from 2011 to 2016 as evidenced by damaged and dead trees. The loss of living trees and the reduction in canopy and cover has degraded the habitat value for monarch butterflies, birds and other wildlife. Disease from insect pests and pathogens continues to affect the health of the forest. Dead and dying/hazardous trees reduce opportunities for recruitment and re-growth of young trees. Concurrently, these dead and dying trees present an immediate wildfire hazard to adjacent residences and tree fall hazard to members of the public who extensively use the Ellwood Mesa trails, open space, and beach. They also present a fall hazard for healthy trees in the area. Preservation and protection of the spectacular monarch butterfly overwintering natural phenomenon balanced with a safely managed forest is a primary driver of this action plan.

This Plan is intended to protect and enhance habitat for monarch butterflies and the suite of other species known to occupy the Ellwood Mesa eucalyptus forest. This would be accomplished by safe removal of trees that have become a hazard and risk the viability of Monarch butterfly aggregation sites. This Plan presents three categories of tree conditions: (1) action directly related to public safety (wildfire hazard and falling trees in public areas), (2) action related to butterfly aggregation site trees (wildfire hazard, falling trees, pest damage), and (3) tree health outside of the aggregation sites in the greater Ellwood Mesa eucalyptus forest. A proposed schedule of actions to be taken is provided (Table 1).

1.3 Environmental Setting

Ellwood Mesa contains approximately 78 acres of eucalyptus forest and windrow habitat. Three species of eucalyptus are present, blue gum (*Eucalyptus globulus*), river red gum (*E. camaldulensis*), and red iron bark (*E. sideroxylon*). Blue gum eucalyptus is the dominant species on Ellwood Mesa. Within the eucalyptus forest there are five locations know to regularly harbor monarch butterfly aggregations through the overwintering period

from October 1st through March 31st. Four of these locations, Ellwood Main, Ellwood West, Ellwood North, and Sandpiper are on City property. A portion of the Sandpiper aggregation site and Ellwood East aggregation site are located on private property (Figure 2). The Ellwood Monarch Butterfly groves (Figure 3), especially the aggregation site known as Ellwood Main are well-known and visited by thousands of people each year. Ellwood Main has been specifically designated as a location for visitors to view the butterflies and has been configured with rope barriers, trails, and viewing areas for the public.

1.4 Tree Condition Assessment

Each tree within Ellwood Mesa monarch butterfly aggregation sites (East, Main, West, North, and Sandpiper (eastern portion on City property) was evaluated for health by Certified Arborist Cory Meyer, and for use by monarch butterflies by Daniel E. Meade, Ph.D. Individual trees were tagged with metal tree tags, measures and condition documented, their location recorded using a sub-meter accuracy Trimble GeoXT GPS, and locations plotted for all tagged trees using ArcGIS. Trees were rated using the following tree health rating system:

Rating	Tree Health Description/Action
0	Deceased Tree / should be removed
1	Dying or Hazardous Tree / should be removed
2	Distressed Tree; Poor Structure, Some Pests, and Poor Health / some may need to be removed depending on their importance to aggregation site
3	Tree with Some Pests and Minor Structural Defects That Can be Mitigated / could stay
4	Tree with Minor Structural Defects and Overall Good Health / could stay
5	Relatively Healthy Tree / can be left in its natural state
6	Healthy Tree / to be left in natural state
7, 8, 9	Tree with Arboricultural Pruning/Attention or Have No Apparent Structural Defect
10	Specimen Tree with Perfect Shape, Structure and Foliage

Maps of the assessment area showing numbered tagged trees are provided on 14 pages as Exhibit A. Trees that have epicormic growth are, in some cases, recommended to remain for further evaluation, unless they are in imminent danger of falling, or are distressed beyond recovery. This Plan does not include all the tree rankings for every tree in the assessment area, because the survey is on-going.

To determine the extent of tree die-off and dying/hazardous trees on Ellwood Mesa, Certified Arborist Cory Meyer tallied dead trees throughout the eucalyptus groves and windrow. Each dead tree was marked with a temporary chalk “x” to assure an accurate count. A total of 907 dead trees were tallied within the survey area on the City’s Ellwood

Mesa (Table 2 and Exhibit A). Dying trees were also tallied but efforts to catalogue the results of the survey are underway and not yet complete at the time of this report preparation.

1.5 Exclusion of Monarch Butterfly Habitat from this Action Plan

A portion of the Ellwood East monarch butterfly aggregation site is not on City of Goleta property (Figure 3).Therefore tree condition information for Ellwood East and surrounding private property is presented separately in Table 5. Dead and dying trees were also documented on the Coronado Butterfly Preserve, owned by the Santa Barbara Land Trust and related tree condition information is provided in Table 6. Decisions regarding trees that are not on City property, but are part of the Ellwood Mesa environmentally sensitive habitat (ESH) will be made by the property owners in consultation with Althouse and Meade and the City.

1.6 About Tree Health Ratings

Arborist tree health ratings for trees associated with aggregation areas and trails do not constitute a tree fall risk. They are health ratings only. The risk of trees falling involves multiple factors including eucalyptus tree root strength, canopy height and weight load, percent trunk rot, wind, topographic position of the trunk, erosion, and other factors that were not included in this assessment. Trees with relatively good health ratings can still fall unexpectedly, as evidenced in Ellwood Main by previous loss of large living trees that fell across the entrance trail to Ellwood Main and Devereux Creek channel in years past.

Arborist Disclaimer Statement

> *Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance their beauty and health, and attempt to reduce the risk to neighboring healthy trees. Clients may choose to accept of disregard the recommendations of the arborist or seek additional advice.*
>
> *Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi, and other forces of nature. Conditions are often hidden within the tree or below ground and a tree may fail in ways we may not fully understand. Arborists cannot guarantee that a tree will be healthy or safe, or fail for that matter, under all circumstances, or for a given period. Likewise, remedial treatments, like any medicine, cannot be guaranteed.*
>
> *Treatments, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, sight lines, disputes between neighbors, landlord-tenant matters, etc. An arborist cannot take such issues into account unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.*

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

This consultant does not verify the safety or health of any tree for any period of time. Construction activities are hazardous to trees and cause many short and long-term injuries, which can cause trees to topple and die.

Even when every tree is inspected, inspection involves sampling; therefore some areas of decay or weakness may be missed. Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength that can cause even a healthy tree to fail. Weather, winds and the magnitude and direction of storms are not predictable and some failures may still occur despite the best application of high professional standards.

1.7 Vegetation Management Plans

The California drought, increased temperatures, and an increase in pests and disease have affected many species of trees in California (see USFS reports https://www.fs.fed.us/news/releases/new-aerial-survey-identifies-more-100-million-dead-trees-california). Along with Ellwood Mesa, other areas in California are experiencing significant die-offs of eucalyptus trees. The example of the Sutro Forest in San Francisco provides pertinent information regarding management of a California eucalyptus forest.

Sutro Forest Management Plan

The Sutro Forest Reserve is a 61-acre forest located on the University of San Francisco property on Forest Hill near the geographic center of San Francisco. The site contains approximately 10,000 live and 3,500 dead eucalyptus trees. After extensive work, a Vegetation Management Plan was developed for the Reserve that includes management directives. Many of the management directives in the UCSF Mount Sutro Open Space Reserve Vegetation Management Plan can apply to management and restoration of the Ellwood Mesa eucalyptus forest and should be considered for the restoration plan to be prepared prior to large scale tree removals (see Sutro Executive Summary for Forest Treatment excerpt in Exhibit A, attached). The Sutro Forest Management Plan provides information that should be considered regarding management practices at Ellwood.

Ellwood Mesa Open Space/Sperling Preserve Monarch Habitat Management Plan

The Ellwood Mesa Monarch Butterfly Habitat Management Plan (Habitat Management Plan) provides guidance on the management of eucalyptus trees and includes recommendations for maintenance of the eucalyptus forest. Recommendations for the restoration of areas affected by hazard tree removals should be included in the Final Habitat Management Plan and apply to areas where dead and dying trees are removed. The Habitat Management Plan will include restoration of tree removal areas for future implementation.

2.0 Order of Work

This Plan for Ellwood Mesa includes an approach to removal of hazardous trees, focusing on dead and dying trees. Hazard trees are defined as dead standing trees or trees that are severely leaning or diseased that may topple at any time (trees ranked as 0 and 1).

2.1 Priorities and timing or work

A limited window of opportunity exists each year for working in areas where monarch butterflies aggregate and where birds are nesting. Tree removal must avoid the monarch butterfly aggregation season (October 1st through March 1st). Figure 4 identifies the previously occupied butterfly aggregation site locations, including a 300 foot protective buffer. Tree removal must avoid nesting bird season (March 1st to August 31st). Where active nests are identified, the nests and a protective buffer, typically 300 feet, will be protected from tree removal activity.

Given the butterfly and bird nesting season limitations, September is the best month for tree removal activity. Work during the butterfly aggregation season or nesting bird season can only occur at the authorization of the City biologist. The City biologist will be pre-approved by the City and will have the appropriate credentials for the target species under survey.

The prioritization of work area order, as directed by the City biologist, will provide greater assurance that monarch butterfly aggregations and nesting birds are protected while still allowing work to occur in other areas not occupied by these species.

3.0 Goals, Objectives, Actions

3.1 Goal 1 – Protect Public Health and Safety Balanced with Protecting Habitat

Objectives:

- Remove trees with health ratings of 0 (dead) and 1 (dying) as shown on Tables 3 and 4 (note that these tables are a work in progress)
- Identify tree removal staging areas and vehicle and equipment access routes that minimize impacts to Ellwood Mesa and public access.
- Coordinate with tree removal teams to ensure that all actions used to remove or trim hazard trees will minimize and avoid damage or loss of living trees, and will avoid nesting birds.

Actions

Action 1: The City of Goleta shall select a qualified tree management firm(s) experienced in working in sensitive habitat areas.

Action 2: The City of Goleta shall ensure that the selected tree management firm(s) have worker safety and liability insurance.

Action 3: Tree removal shall avoid nesting birds and aggregating monarchs, consistent with the City's Biologist and Arborists direction.

Timing: Immediately

3.2 Goal 2 – Maximize Potential for Restoration: Aggregation Sites

Ensure the long-term health of habitat in Ellwood Mesa, with a focus on monarch butterfly aggregation sites.

Objectives

- Identify and remove trees that are so badly damaged that tree loss is imminent or their presence could affect the growth or recruitment of healthy trees (remove trees with health ratings of 0 or 1), as stated in Goal 1.
- Develop a habitat restoration and tree recovery plan as part of the Habitat Management Plan with a focus on restoring habitat functions suitable for monarch butterfly aggregation.

Actions

Action 4: Develop a habitat restoration plan for Ellwood Mesa that details restoration activities at each aggregation site and for the Ellwood forest. This plan will be included in the Habitat Management Plan.

Action 5: Trim or remove trees determined to be detrimental to aggregation habitat, after completing Actions 1-3 listed above.

Action 6: To enable retention of living trees vital to aggregation habitat at Ellwood Main, consider the permanent closure of the trail along western bank at the recommendation of the City's Arborist.

Action 7: Utilize tree chips as mulch at the direction of the City's Biologist and City's Arborist.

Timing: Immediately. Conduct tree work prior to monarch butterfly aggregation season beginning on October 1st. Any tree work after October 1st shall occur at the approval of the City's Biologist and shall avoid aggregating butterflies and a 300-foot buffer.

3.3 Goal 3 – Maximize Potential for Restoration: Outside Aggregation Areas

Ensure the long-term health of habitat in Ellwood Mesa. Manage tree health to ensure public safety and to re-establish public access to the trails system.

Objectives

- Identify and remove trees that are so badly damaged that tree loss is imminent or their presence could affect the growth or recruitment of healthy trees as stated in Goals 1 and 2.
- Following tree removal activity, restore public access.
- Develop a habitat restoration plan and public access maintenance plan as part of the Habitat Management Plan.

Action 8: Remove trees with health ratings of 0 or 1.

Action 9: Utilize tree chips as mulch at the direction of the City's Biologist and City's Arborist.

Action 10: Remove trail closure barricades and signage.

Timing: Immediately. Conduct tree removal as part of Goals 1 and 2.

3.4 Restoration Plan

A Habitat Restoration Plan (HRP) will be prepared as part of the development of the Ellwood Mesa Monarch Butterfly Habitat Management Plan. An example of a potential restoration approach was developed for the Sutro Forest Reserve and is provided as Exhibit B. The Draft Monarch Butterfly Habitat Management Plan, including the HRP, will be presented for public input and agency comment. A recommended HRP framework is provided below that describes components to be included to meet public expectations for communication and input and to assure recovery of the eucalyptus groves.

Components of an HRP should include the following sections:

1. Responsible parties (including point of contact for implementation by City, Contractors, Resource Monitors, and responsible agencies).
2. Detailed description of habitats impacted during tree removal (including parking, staging areas and ingress/egress to/from the site and on public roads).
3. Complete description of impacts and project timing.

4. Methods used to prevent intrusion into eucalyptus grove zones and other protected resources that are not to be impacted.
5. Restoration plant palette approved by responsible agencies such as the California Coastal Commission and the California Department of Fish and Wildlife. Plant palette will include details regarding erosion control seed mixes, revegetation seed mixes, and container stock sizes
6. Restoration planting plan conceptual layout approved by the responsible agencies.
7. Final planting and temporary irrigation plan consistent with the conceptual plan and approved by the City of Goleta.
8. Site preparation plan.
9. Weed management plan (Identify weeds present in and near the proposed restoration areas and prioritize management and eradication using CALIPC and CDFA lists).
10. Financial assurances (e.g. endowment or allocated budget approved by responsible agencies)
11. Site protection instrument provided to responsible agencies, as requested (e.g. open space easement, restrictive covenant, or conservation easement).
12. Schedule of restoration implementation.
13. Performance criteria that include plant size (aerial extent, count, height, density, distribution).
14. Maintenance plan.
15. Monitoring plan that includes implementation monitoring on a weekly basis, restoration installation completion report, or annual report until installation of restoration plantings and irrigation is completed, annual reports that include monitoring dates and weather/site conditions present on those days, restoration planting data related to performance criteria and monarch use data from site visits during monarch aggregation season (e.g. October, December, January/February) for 5 to 10 years.

4.0 Work Approach

Work would consist of coordinated tree removal operations based in staging area(s) approved by the City of Goleta. Proposed work includes removal of dead/dying trees that present a danger of falling in areas used by the public or on living trees, and for fire risk reduction. All work will be completed by a professional tree service company under the supervision of City staff and monitored by a certified arborist. Hand tools are preferred when feasible to avoid damage from large equipment.

4.1 Work Priorities

1. *Reduction of safety hazards to the public, aggregation, and nesting bird sites.*

   Safety hazards include trees that can fall and damage monarch butterfly aggregation trees, and trees that pose a risk to public safety and habitat values.

Trees have been identified that pose a risk to habitat and persons within Ellwood Main, Ellwood West, Sandpiper, and Ellwood North aggregation areas (Table 3). Dead trees have also been identified in non-aggregation areas (Table 4), and within the Ellwood forest on private property (Table 5 for Ellwood East and Table 6 for the Coronado Butterfly Preserve). Additional dead and dying trees posing threats to public safety and habitat values are under assessment and the tree lists will be updated to reflect results of the complete tree inventory for dead and dying (trees ranked as 0 and 1) on Ellwood Mesa.

The first goal of this action plan is to protect the public along trails, and to protect monarch butterfly aggregation sites and nesting bird habitat from further loss and damage of trees. Dead and dying trees are recommended for removal.

2. *Removal of dead or dying trees that provide no current habitat value for monarch butterflies.*

   This step includes removing trees that are dead, or are in very poor condition (trees ranked as 0 and 1 respectively) that currently do not provide habitat benefit to overwintering monarch butterflies. Trees ranked as 1, may be prone to stump resprouts and rapid growth. These trees would be cut to ground level and allowed to resprout. Stump sprouts would be monitored and the most vigorous stem(s) retained to promote a tree that enhances habitat value for the aggregation site.

3. *Forest health restoration and Fire Safety Fuel Load reduction*

   To reduce the potential for catastrophic fire, dead and dying trees (trees ranked as 0 and 1) may be removed from the Ellwood Mesa eucalyptus groves. This removal of dead and dying trees from forest areas will help to promote the establishment of new trees and habitat while reducing the potential fire hazards to the forest and neighboring communities.

4.2 Pre-work Biological Surveys

Pre-construction nesting bird surveys will be conducted by the City's biologist prior to start of work during the nesting bird season (February 1 through August 31). If nesting birds are observed, tree removal will avoid the nesting area and a protective buffer at the recommendation of the City-approved biologist. Survey areas will be sufficient to identify setback and buffer areas from active nests. The City's biologist will provide results in writing with maps showing any setback areas to the contractor, the City's arborist, and monarch butterfly biologist. All tree removal activities should demonstrate avoidance of nesting birds and use necessary setbacks appropriate to avoid disturbance of nesting birds.

Monarch butterfly aggregation surveys will be conducted throughout the work effort in the months of October through March. Tree removal activity will avoid all active aggregation sites, including a protective buffer, at the recommendation of the City's biologist.

4.3 Procedure for Tree Removal

Monarch butterfly aggregation areas

Locations that are in, or adjacent to monarch butterfly aggregation sites (Figure 3) require special care in determining whether trees, living or dead, should be removed. Trees in these areas are tagged with individual numbers. For aggregation areas, all trees subject to trimming or removal have been evaluated by the City's arborist and by the City's biologist to determine tree condition and determine the effect of removal to monarch butterfly habitat (Table 3). Prior to the tree removal activities, the City's biological monitor will be present to record the tree number and confirm the presence of a red X mark for removal placed by the City's arborist.

Ellwood forest areas outside aggregation areas

Hazardous trees (trees ranked as 0 or 1) outside of monarch butterfly aggregation areas have been or are in the process of being identified by the City's arborist from Althouse and Meade. Table 4 presents a partial list of dead or dying trees located in the Ellwood forest areas outside of the aggregation areas. Each of these trees is tagged with an individually numbered blue metal tag. Blue tagged trees counted at the time of the preparation of this Draft Plan include 292 dead and 6 in severely degraded condition (rated as 1) that are deemed hazardous by the City's arborist from Althouse and Meade. The list will be updated upon completion of field surveys and is expected to increase to as many of 958 based on a field count of hazard trees located outside of the aggregation site.

For any trees designated for removal or safety trimming, the City's biologist will verify that appropriate surveys for nesting birds have been conducted within appropriate buffer areas. A paint mark shall be placed on the tree by the City's arborist within one week prior to the removal date. In the field and prior to work, the tag number shall be verified by the City's arborist.

Selected dead snags that are situated in the interior of the grove and away from public trails that pose small risk of damaging other trees and limited fire danger should be preserved for cavity nesting birds at the direction of the City's biologist. Safety trimming of these trees can be conducted to remove hazardous branches or tree tops, but leave standing trunks. These trees would be evaluated by the City's arborist and biologist and marked for preservation.

4.4 Monitoring program

To assure correct removals, each tree to be removed must have been tagged by the City's arborist with an individual number. The City's biologist will be present onsite during all work activities to confirm the trees designated for removal by the City's arborist are the only trees removed during the work. No tree can be removed without prior confirmation from the biological monitor for removal.

The City's biologist will also check work areas for wildlife and sensitive biological resources prior to and during work. The City's biologist will have the authority to stop work at any time if birds or other wildlife are at risk.

City staff and/or City monitors shall be present to inform the public. The City's tree contractor shall inform the public as necessary and prevent public access to work areas.

The City's arborist and biologist shall be present to verify individual tree removals and provide guidance as necessary during tree work.

4.5 Tree removal methods

All work must be accomplished by tree removal professionals (the City's tree contractor) using practices that minimize damage to surrounding trees and vegetation. Hand work and the use of small equipment is preferred when feasible to minimize impacts. Best professional standards will be employed at all times. Whenever possible, trees must be removed by sectioning and lowered to the ground by rope. Care must be taken to prevent trees from falling onto any living trees or understory shrubs. Chipping/grinding of branches and cut wood shall be allowed in designated locations outside the eucalyptus forest. Staging areas, ingress and egress paths shall be approved by the City of Goleta and the City's biologist prior to implementation. All work areas shall be inspected by the City's biologist prior to the start of work. Areas to be protected from disturbance shall be clearly marked by the City's tree contractor prior to start of work within 100 feet of protected zone.

Trees shall be cut to the ground and stumps left in place, except in specific cases as directed by the City's arborist where re-sprouting is possible or removal is necessary for restoration.

Generally, the trees should be removed by the City's tree contractor as follows:

- Securing areas where tree removal work will be conducted from public access during the time that work is being conducted. Ensuring the safety of workers and the community at large is of paramount importance.

- Construction notification signs will be posted at the staging and access areas alerting the public to the presence of heavy equipment and tree work.

- The removal operation is expected to require up to four work crews: a crew cutting trees, a crew transporting the cut material to a grinding/processing area outside the grove, a crew operating the grinding/processing equipment, and a crew spreading the ground mulch.

- All trees to be removed will be specified by the City in consultation with Althouse and Meade, and will only include deceased and dying/hazardous trees (trees ranked as 0 or 1). The City's tree contractor will not be expected, nor authorized, to make determinations as to whether a particular tree should be removed.

- Safety trimming of trees rated 2 or higher may be authorized, if warranted by safety concerns and directed by the City in consultation with Althouse and Meade.

- Trees will be cut approximately flush with the ground, in a manner that encourages stump-sprouting.

- The contractor will propose best management practices for tree disposal, including options such as chipping, hauling, burning, and incinerating. Grinding and spreading material on-site is preferred, because this method neutralizes pests, helps to control erosion, and maintains air quality (no fire required).

- Cut material will be processed promptly, and will not be stockpiled on-site for more than two weeks, unless weather conditions or an emergency situation pauses working days.

- Staging areas and access routes will be designated by the City, and will be sited to minimize damage to trees and understory vegetation. The proposed staging areas and access routes are illustrated on Figure 6.

- Onsite construction vehicle use will be minimized to the extent practicable. Vehicles will utilize rubber tires to minimize soil disturbance. Existing roads and dirt paths will be utilized for access.

- Use of the parking area off of Hollister Avenue for work crews will be limited to five spaces. Carpooling will be required.

4.6 Environmental Protection Measures

The following Environmental Protection Measures will be implemented as part of project implementation:

- Worker environmental sensitivity training will be conducted for all onsite workers prior to start of work. Training will be provided by the City and the City's consulting specialists, including representatives from Althouse and Meade.
- A City-approved arborist will use Althouse and Meade's data to mark the trees to be removed. The markings will be clearly delineated with paint or flagging. If paint fades or flagging is removed, the arborist will remark the trees prior to any/all removals.
- The City's tree contractor will be directed to take extreme care to ensure that non-target trees (i.e., healthy trees that are not identified for removal) are not inadvertently damaged during the tree removals. A City-approved arborist will be onsite to ensure that the removals are consistent with the Althouse and Meade tree survey results. The City's arborist will maintain daily logs noting the tree number, progress, and any incidental impacts to adjacent trees (including roots, canopies, and trunks). Should the City's arborist determine that an unlisted tree has been damaged and needs removal, the arborist will document and photograph the tree condition and the justification for proposed removal.
- Soil disturbance will be minimized and appropriate erosion controls will be used as directed by the City's Public Works Director or representative.

- Construction equipment staging, fueling, and storage areas shall be located outside of the eucalyptus groves (the outer dripline plus 5 feet), and no closer than 100 feet from Devereux Creek.
- Equipment utilized for tree removals will not create ruts in the soil or cause soil erosion on the trails, roads, or undisturbed ground. Wooden boards or other protective devices (rubber matting) should be placed within groves and under heavy equipment to distribute the weight of any heavy machinery used during removal (trucks, cranes, etc.). Should ruts form, the contractor will be required to restore the grade to as close to pre-project as possible and install appropriate erosion control measures.
- Pesticides and herbicides will not be used.
- Fire suppression equipment will be onsite at each work area.
- The contractor will follow the instruction of the City's arborist, biologists, and/or environmental monitor in an effort to minimize tree removal impacts to adjacent habitat and public access.
- No work will be done on days when the risk of forest fire is high. The tree removal contractor will monitor wind speeds for worker safety.

5.0 Suggested Schedule

TABLE 1. Draft Schedule of Tasks for the Ellwood Mesa Tree Safety Action Plan.

Task	Responsible Party	Timing
1. Completion of tree health assessment and update Tree Safety Action Plan tables	Cory Meyer, Dan Meade, Althouse & Meade	September 15
2. Butterfly Aggregation Surveys	City's Arborist and/or Dan Meade, Althouse & Meade	October 1 – March 1
3. Nesting Bird Surveys	Storrer Environmental	Survey one week prior to work conducted in bird nesting season (February–September)
4. Restoration Plan in Habitat Management Plan	City of Goleta and Althouse and Meade	Pending Council-direction

6.0 Tree Condition Data

Total counts of dead and dying trees were made in the Ellwood eucalyptus groves by individual tallying of each dead or dying tree (Table 1), also referred to as trees with health ratings of 0 or 1. Dead trees were counted by a Certified Arborist and marked with a chalk "X" to provide an accurate count. Marking of dying trees was underway at the time this report was under preparation. Dead and dying trees located within aggregation sites are listed in Table 3, and along public trails outside of monarch butterfly aggregation areas are listed in Table 4. Tables 5 and 6 list dead and dying trees on private property within the Ellwood forest and are provided for informational purposes only and are not included in this Tree Action Plan. All tables and maps reflecting trees within the jurisdiction of the City of Goleta will be updated by Althouse and Meade at the completion of the tree survey.

TABLE 2. Summary table providing count of dead or dying trees located on Ellwood Mesa. A total count is provided and then counts are given for each monarch butterfly aggregation site. Then the count of dead and dying trees outside of the aggregation sites is provided. All trees were examined by a Certified Arborist and are potential safety risks along public trails and/or monarch butterfly aggregation locations.

Location	Dead Trees (Health Ranking 0)	Dying Trees (Health Ranking 1)	Total
Total Ellwood Forest trees on City of Goleta property	907	Survey Underway	907
Total within Monarch Butterfly Aggregation Sites (a subset of the total Ellwood Forest trees as listed above)	59	20	79

TABLE 3. **List of trees tagged in monarch aggregation areas**. This table lists by individual tree tag number one-hundred-nine (109) aggregation site trees rated at 0 or 1 for health (0 = dead, 1 = dying or hazard). Rankings are for the date of the assessment. Dead trees (0) are listed first in the table, followed by dying trees rated as 1. Other trees in the aggregation sites with higher rating are not included in this table as they are not recommended for action at this time. Each tree was individually assessed by Certified Arborist Cory Meyer and monarch butterfly biologist Daniel E. Meade. Work priority column lists trees as 1) immediate removal recommended by Certified Arborist for safety, 2) removal recommended for habitat protection, but condition to be reassessed prior to removal, 3) removal not recommended at this time, but may be in the future. Twenty-one (21) trees ranked as 1 are recommended for retention and are designated as "Keep with Safety Trim". Justification for retention of these trees is given in the Notes column. All trees in this table are blue gum eucalyptus (*Eucalyptus globulus*). Tree count in this list for removal is 73.

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
1	101	Ellwood North	3/16/17	15.5	-	-	50	20	0	Severe lean termites	Remove	1
2	104	Ellwood North	3/16/17	7.0	7.0	-	30	-	0	-	Remove	1
3	105	Ellwood North	3/16/17	16.5	17.5	-	90	-	0	-	Remove	1
4	106	Ellwood North	3/16/17	25.0	7.0	-	70	-	0	-	Remove	1
5	108	Ellwood North	3/16/17	8.5	16.0	-	70	-	0	None	Remove	1
6	112	Ellwood North	3/16/17	12.0	-	-	90	-	0	Leans into tree #105	Remove	1
7	114	Ellwood North	3/16/17	3.0	-	-	20	-	0	Removed by others	Missing	N/A
8	116	Ellwood North	3/16/17	12.0	12.0	12.0	70	-	0	None	Remove	1

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
9	120	Ellwood North	3/16/17	35.0	17.0	-	100	60	0	One trunk leans.	Remove	1
10	121	Ellwood North	3/16/17	9.0	16.0	-	90	-	0	Co-dominant trunks.	Remove	1
11	123	Ellwood North	3/16/17	15.0	15.0	-	50	-	0	Co-dominant trunks.	Remove	1
12	126	Ellwood North	3/16/17	30.0	-	-	110	60	0	-	Remove	1
13	127	Ellwood North	3/16/17	18.0	-	-	100	-	0	-	Remove	1
14	130	Ellwood North	3/16/17	16.0	-	-	60	-	0	None	Remove	1
15	133	Ellwood North	3/16/17	20.0	-	-	70	-	0	Leaning. Does not lean into aggregation site.	Remove	1
16	140	Ellwood North	4/4/17	14.0	-	-	65	15	0	Slight lean	Remove	1
17	141	Ellwood North	3/16/17	7.0	12.0	-	40	-	0	-	Remove	2
18	210	Ellwood North B	4/11/17	6	-	-	50	6	0	No threat to other trees	Remove	2
19	214	Ellwood North B	4/11/17	22			50		0	-	Remove	1
20	219	Ellwood North B	4/11/17	24.5	-	-	90		0	-	Remove	1

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
21	232	Ellwood North B	4/11/17	~6	-	-	20		0	Top broke off	Remove	1
22	251	Ellwood West	4/11/17	9.5	-	-			0	Threat to other trees	Remove	1
23	254	Ellwood West	4/11/17	16.5	-	-	75		0	Threat to other trees	Remove	1
24	290	Ellwood West	4/11/17	16	-	-	65		0	Threat to other trees	Remove	2
25	292	Ellwood West	4/11/17	26	-	-	100		0	Other trees, public safety	Remove	1
26	300	Ellwood West	4/11/17	10.5	-	-	70		0	Other trees, public safety	Remove	2
27	303	Ellwood Main	4/13/17	17	-	-	60		0	Known cluster tree.	Remove	1
28	304	Ellwood Main	4/13/17	24	-	-	90		0	Severe lean across drainage Known cluster tree	Remove	1
29	305	Ellwood Main	4/13/17	26	-	-	60		0	Severe lean across drainage Known cluster tree.	Remove	1
30	312	Ellwood Main	4/13/17	12	-	-	55		0		Remove	2
31	330	Ellwood Main	4/13/17	16	-	-	80		0	Moderate lean away from trail	Remove	1
32	336	Ellwood Main	4/13/17	13.5	-	-	50		0	Severe lean into another large dead tree.	Remove	1

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
33	337	Ellwood Main	4/13/17	14	-	-	50		0	Slight lean over trail. Another dead tree leaning into it.	Remove	1
34	338	Ellwood Main	4/13/17	9	-	-	45		0	Slight lean over trail.	Remove	1
35	341	Ellwood Main	4/13/17	39	-	-	100		0	Co-dominant trunks; one trunks has slight lean over trail	Remove	1
36	342	Ellwood Main	4/13/17	36	-	-	100		0	Leave 12” stump	Remove	1
37	343	Ellwood Main	4/13/17	12.5	-	-	80		0	Severe lean over trail.	Remove	1
38	344	Ellwood Main	4/13/17	17	-	-	60		0	Severe lean into another tree	Remove	1
39	345	Ellwood Main	4/13/17	10	14	-	90		0	Co-dominant trunks	Remove	1
40	346	Ellwood Main	4/13/17	9.5	-	-	60		0	Trunk rotting at base.	Remove	1
41	349	Ellwood Main	4/13/17	4.5	-	-	60		0		Remove	2
42	355	Ellwood Main	4/13/17	30	-	-	50		0	Severe lean over trail.	Remove	1
43	376	Ellwood Main	4/13/17	12	-	-	75		0	Co-dominant trunk. Slight lean.	Remove	1
44	381	Ellwood Main	4/13/17	15	14	8	80		0	Hazard tree (right next to trail).	Remove	1
45	387	Ellwood Main	4/13/17	5.5	-	-	60		0	-	Remove	1

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
46	399	Ellwood Main	4/13/17	14	6	4	80		0	Next to trail.	Remove	1
47	400	Ellwood Main	4/13/17	14	14	-	90		0	Leaning toward trail. Honey bee hive in base of one trunk.	Remove	1
48	403	Ellwood Main	4/20/17	9	2.5	-	55		0		Remove	1
49	412	Ellwood Main	4/20/17	14	-	-	60		0	Leaning over drainage	Remove	1
50	422	Ellwood Main	4/20/17	5	-	-	50		0	Slight lean	Remove	2
51	424	Ellwood Main	4/20/17	9	-	-	60		0		Remove	1
52	466	Ellwood Main	4/20/17	16	-	-	70		0		Remove	1
53	469	Ellwood Main	4/20/17	23	-	-	85		0	Slight lean.	Remove	1
54	470	Ellwood Main	4/20/17	15	-	-	65		0		Remove	1
55	472	Ellwood Main	4/20/17	20	-	-	90		0	Moderate lean.	Remove	1
56	474	Ellwood Main	4/20/17	22.5	-	-	90		0	Slight lean.	Remove	1
57	478	Ellwood Main	4/20/17	15	6	-	50		0	Moderate lean.	Remove	2
58	479	Ellwood Main	4/20/17	8	8	-	50		0	Codominant trunks. Severe lean over trail.	Remove	1
59	506	Ellwood North	5/18/17	8	10.5		40	30	0	Dead	Remove	1
60	113	Ellwood North	3/16/17	12.0	-	-	30	12	1	Leans into tree #112	Remove	1
61	119	Ellwood North	3/16/17	13.0	-	-	70	10	1	Extreme lean Tree has fallen since evaluation	Fallen	n/a

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
62	128	Ellwood North	3/16/17	13.0	14.0	-	60	18	1	Co-dominant trunks. Top half of tree is dead. Regrowth on remaining tree.	Keep and Safety Trim	3
63	139	Ellwood North	4/4/17	26.0	-	-	55	25	1	Slight lean Tree almost entirely dead	Remove	1
64	143	Ellwood North	3/16/17	25.0	13.5	-	80	31	1	Co-dominant trunks	Remove	2
65	148	Sandpiper	4/4/17	17	-	-	90	30	1	60% of the tree is dead	Remove	2
66	149	Sandpiper	4/4/17	8	-	-	40	20	1	Significant lean. Habitat value.	Keep and Safety Trim	3
67	222	Ellwood North B	4/11/17	23.5		-	50	60	1	Severe lean, away from clearing, leaning on other trees	Keep and Safety Trim	3
68	229	Ellwood North B	4/11/17	6.5	-	-	18	9	1	Trunk broke 12 feet up, trunk re-sprouted	Keep and Safety Trim	3
69	233	Ellwood North B	4/11/17	6.5	-	-	50	18	1	Bad trunk decay; co-dominant trunks. Main spar is dead	Keep and Safety Trim	3
70	238	Ellwood North B	4/11/17	7	-	-	50	30	1	Hollow trunk, severe lean	Keep and Safety Trim	3
71	240	Ellwood North B	4/11/17	18.5	2	-	70	10	1	Hollow spot and rot at base; leaning away from clearing. Dead crown.	Keep and Safety Trim	3
72	256	Ellwood West	4/11/17	12	-	-	65	15	1	Regrowth occurring Provides important cover	Keep and Safety Trim	3

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
73	258	Ellwood West	4/11/17	16	-	-	60	25	1	Dead crown, bad die back	Remove	2
74	281	Ellwood West	4/11/17	5.5	-	-	50	10	1	Canopy with dead branches, regrowth	Keep and Safety Trim	3
75	293	Ellwood West	4/11/17	18.5	-	-	100	10	1	Regrowth occurring	Keep and Safety Trim	3
76	299	Ellwood West	4/11/17	23.5	-	-	100	20	1	Canopy with dead branches, regrowth	Keep and Safety Trim	3
77	316	Ellwood Main	4/13/17	48.5	-	-	60	-	1	3 large dead trunks, one with a hazard lean	Remove	1
78	322	Ellwood Main	4/13/17	24.5	-	-	40	25	1	Leans away from path.	Keep and Safety Trim	3
79	326	Ellwood Main	4/13/17	14	-	-	45		1	Main trunk is dead. Leave 12” stump	Remove	2
80	334	Ellwood Main	4/13/17	8	-	-	40	12	1	Trunk damage Crown mostly dead.	Remove	2
81	335	Ellwood Main	4/13/17	5.5	8.5	-	50	20	1	Poor shape but alive. Prominent landmark. Clean up and retain. Not large or dangerous and provides cover.	Keep and Safety Trim	3
82	339	Ellwood Main	4/13/17	22	-	-	100	20	1	Severe lean over drainage. Leave stump at 12”	Remove	2
83	348	Ellwood Main	4/13/17	15	-	-	60	15	1	Severe lean over drainage. Important cluster tree. Dead tree leaning on it. Mature leaves on top.Previously, crown broken. Leans away from trail.	Keep and Safety Trim	3

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
84	356	Ellwood Main	4/13/17	12	-	-	40	30	1	Severe lean. Tree has died since rating.	Remove	1
85	360	Ellwood Main	4/13/17	14.5	-	-	60	30	1	Severe lean into another tree Crown dead.	Remove	1
86	370	Ellwood Main	4/13/17	8	-	-	50	20	1	Nearly dead 8-3-17	Remove	2
87	383	Ellwood Main	4/13/17	12.5	-	-	35	12	1	Mostly dead 8-3-17 Leave 12” stump	Remove	1
88	392	Ellwood Main	4/13/17	6.5	-	-	40	6	1	Dead	Remove	2
89	394	Ellwood Main	4/13/17	7.5	-	-	60	25	1	Abundant regrowth. Value to aggregation habitat	Keep and Safety Trim	3
90	404	Ellwood Main	4/20/17	27	6	-	65	20	1	Abundant regrowth. Very important aggregation tree.	Keep and Safety Trim	3
91	405	Ellwood Main	4/20/17	18	-	-	60	10	1	Very important aggregation tree. Recovering growth	Keep and Safety Trim	3
92	408	Ellwood Main	4/20/17	14	9	-	50	10	1	Co-dominant trunks. Smaller trunk is dead. Moderate lean toward trail.	Remove dead trunk only	3
93	409	Ellwood Main	4/20/17	17	-	-	65	15	1	Moderate lean over trail.	Keep with trail closure	3

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
94	413	Ellwood Main	4/20/17	23.5	-	-	90	45	1	Severe lean over drainage Crown dead.	Remove	3
95	414	Ellwood Main	4/20/17	32	-	-	65	45	1	Severe lean over trail. Co-dominant trunks. Other trees leaning on to it. Crown dead. Strong regrowth with mature leaves	Keep with safety trim and trail closure. Important cover	3
96	416	Ellwood Main	4/20/17	13	13	-	20	40	1	Tree has regrowth, not hazardous or near trail.	Keep and Safety Trim	3
97	419	Ellwood Main	4/20/17	4.5	3.5	-	35	30	1	Sever lean over trail.	Remove	1
98	420	Ellwood Main	4/20/17	7.5	8	-	50	40	1	One trunk has severe lean over trail; other has moderate lean.	Remove	3
99	425	Ellwood Main	4/20/17	7	-	-	45	30	1	Severe lean over drainage. Wound on trunk. Trunk rot.	Remove	3
100	434	Ellwood Main	4/20/17	8.5	-	-	20	10	1	No hazard. Still alive. Small tree arched over creek.	Keep	3
101	457	Ellwood Main	4/20/17	24	-	-	70	15	1	Moderate lean over trail. Crown dead.	Remove	1

Count	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
102	463	Ellwood Main	4/20/17	18	-	-	70	20	1	Moderate lean. Entire crown dead.	Remove	1
103	464	Ellwood Main	4/20/17	11.5	7.5	-	70	30	1	Codominant trunks. Entire crown dead. Leave 12” stump	Remove	1
104	465	Ellwood Main	4/20/17	18	-	-	100	40	1	Entire canopy dead.	Keep and Safety Trim	3
105	467	Ellwood Main	4/20/17	14	-	-	45	25	1	Moderate lean. Entirely dead, except for stump sprouting. Leave 12” stump.	Remove	1
106	468	Ellwood Main	4/20/17	10	-	-	45	25	1	Moderate lean. Crown mostly dead. Lean has increased since evaluation	Remove	2
107	471	Ellwood Main	4/20/17	15	-	-	70	25	1	Small epicormics, rest of tree dead. Leave 12” stump	Remove	1
108	510	Ellwood North	5/18/17	3.5	2	1.5	25	15	1	Poor quality Broken and poor regrowth, crown died back	Remove	3
109	501	Ellwood North	5/18/17	24.5			80	35	1	Mostly dead	Remove	1

TABLE 4. **List of Trees in Non-Aggregation Site Areas.** Dead or hazard trees on City property at Ellwood Mesa outside of aggregation sites are tagged with blue anodized tree tags. These trees are all rated at 0 for health (0 = dead), except for six trees rated 1 that are dying trees. Each tree was individually assessed by Certified Arborist Cory Meyer and reviewed by Dr. Daniel E. Meade. All trees in this table are Blue Gum Eucalyptus (*Eucalyptus globulus*). There are 298 trees identified in this list grouped by the closest aggregation site or other known location. These trees are not within monarch butterfly aggregation sites since trees within aggregation sites are listed in Table 3. This tree list will be updated as the tree survey is not yet complete.

Count	Blue Tag	General Vicinity	Date	DBH (in)	DBH2	DBH3	DBH4	DBH5	DBH6	Height (ft.)	Health (1-10)	Notes
1	301	Ellwood Main	7/25/17	17.5						15	0	2 ft from trail
2	302	Ellwood Main	7/25/17	2.5						30	0	
3	303	Ellwood Main	7/25/17	10						25	0	
4	304	Ellwood Main	7/25/17	2	4.5	9				50	1	
5	305	Ellwood Main	7/25/17	10						35	0	
6	306	Ellwood Main	7/25/17	10.5						50	1	Trunk rot 6-7' from ground
7	307	Ellwood Main	7/25/17	13.5						50	0	
8	308	Ellwood Main	7/25/17	12						55	0	
9	309	Ellwood Main	7/25/17	11.5						25	0	
10	310	Ellwood Main	7/25/17	10.5						50	0	
11	311	Ellwood Main	7/25/17	8.5						45	0	
12	312	Ellwood Main	7/25/17	2.5	6					25	0	
13	313	Ellwood Main	7/25/17	6						25	0	
14	314	Ellwood Main	7/25/17	24						20	0	
15	315	Ellwood Main	7/25/17	17.5						40	0	
16	316	Ellwood Main	7/25/17	3.5						25	0	
17	317	Ellwood Main	7/25/17	14						22	0	
18	318	Ellwood Main	7/25/17	14.5						18	0	
19	319	Ellwood Main	7/25/17	2	7	4				45	0	

20	320	Ellwood Main	7/25/17	8						60	0	
21	321	Ellwood Main	7/25/17	10						60	0	
22	322	Ellwood Main	7/25/17	11.5						40	0	
23	323	Ellwood Main	7/25/17	24						55	0	
24	324	Ellwood Main	7/25/17	13.5						65	0	
25	325	Ellwood Main	7/25/17	7.5	6	2				50	0	
26	326	Ellwood Main	7/25/17	6						20	0	
27	327	Ellwood Main	7/25/17	16	20					60	0	
28	328	Ellwood Main	7/25/17	7.5						50	0	
29	329	Ellwood Main	7/25/17	7						60	0	
30	330	Ellwood Main	7/25/17	6.5						35	0	
31	331	Ellwood Main	7/25/17	14						75	0	
32	332	Ellwood Main	7/25/17	8.5						55	0	
33	333	Ellwood Main	7/25/17	18						75	0	
34	334	Ellwood Main	7/25/17	22						60	0	
35	335	Ellwood Main	7/25/17	3.5						35	0	
36	336	Ellwood Main	7/25/17	9.5						60	0	
37	337	Ellwood Main	7/25/17	20	5	7	6			22	0	
38	338	Ellwood Main	7/25/17	16	13					50	0	
39	339	Ellwood Main	7/25/17	4						40	0	
40	340	Ellwood Main	7/25/17	14						80	0	
41	341	Ellwood Main	7/25/17	9						60	0	
42	342	Ellwood Main	7/25/17	17						40	0	
43	343	Ellwood Main	7/25/17	12.5						40	0	
44	344	Ellwood Main	7/25/17	16						70	0	
45	345	Ellwood Main	7/25/17	7.5						50	0	Honey bees next to tree
46	346	Ellwood Main	7/25/17	17						75	0	
47	347	Ellwood Main	7/25/17	14						50	0	
48	348	Ellwood Main	7/25/17	16						75	0	

49	349	Ellwood Main	7/25/17	30						70	0	
50	350	Ellwood Main	7/25/17	7						20	0	
51	351	Ellwood Main	7/25/17	11						65	0	
52	352	Ellwood Main	7/25/17	15	16	5					-	Remove 16", 5" trunks
53	353	Ellwood Main	7/25/17	8.5						80	0	
54	353	Ellwood North	7/25/17	8.5						50	0	
55	354	Ellwood North	7/25/17	18	5					70	0	
56	355	Ellwood North	7/25/17	9.5						50	0	
57	356	Ellwood North	7/25/17	16.5						70	0	
58	357	Ellwood North	7/25/17	13.5						40	0	
59	358	Ellwood North	7/25/17	6.5						35	0	
60	359	Ellwood North	7/25/17	12						50	0	
61	360	Ellwood North	7/25/17	8.5						20	0	
62	361	Ellwood North	7/25/17	7.5						40	0	
63	362	Ellwood North	7/25/17	31						70	0	
64	363	Ellwood North	7/25/17	22						80	0	
65	364	Ellwood North	7/25/17	9.5						30	0	
66	365	Ellwood North	7/25/17	10.5						22	0	
67	366	Ellwood North	7/25/17	18						70	0	
68	367	Ellwood North	7/25/17	16	4					75	0	
69	368	Ellwood North	7/25/17	27						75	0	
70	369	Ellwood North	7/25/17	9	8					65	0	
71	370	Ellwood North	7/25/17	9						60	0	
72	371	Ellwood North	7/25/17	13	9.5					35	0	
73	372	Ellwood North	7/25/17	40						90	0	
74	373	Ellwood North	7/25/17	7.5	2.5	5				60	0	
75	374	Ellwood North	7/25/17	5.5						75	0	
76	375	Ellwood North	7/25/17	6.5						80	0	
77	376	Ellwood North	7/25/17	37						90	0	

78	377	Ellwood North	7/25/17	3						55	0	
79	378	Ellwood North	7/25/17	3						60	0	
80	379	Ellwood North	7/25/17	3						55	0	
81	380	Ellwood North	7/25/17	2						40	0	
82	381	Ellwood North	7/25/17	9						60	0	
83	382	Ellwood North	7/25/17	4						40	0	
84	383	Ellwood North	7/25/17	7						80	0	
85	384	Ellwood North	7/25/17	15.5	9					70	0	
86	385	Ellwood North	7/25/17	7						75	0	
87	386	Ellwood North	7/25/17	20						65	0	
88	387	Ellwood North	7/25/17	28						90	0	
89	388	Ellwood North	7/25/17	14						40	0	
90	389	Ellwood North	7/25/17	14	4	9				65	0	
91	390	Ellwood North	7/25/17	17						80	0	
92	391	Ellwood North	7/25/17	12.5	14					70	0	
93	392	Ellwood North	7/25/17	15						75	0	
94	393	Ellwood North	7/25/17	13.5						50	0	
95	201	Ellwood North	7/25/17	25						85	0	
96	202	Ellwood North	7/25/17	9.5	12.5					80	0	
97	203	Ellwood North	7/25/17	27						80	0	
98	204	Ellwood North	7/25/17	16						20	0	
99	205	Ellwood North	7/25/17	4.5						50	0	
100	206	Ellwood North	7/25/17	13.5	6					70	0	
101	207	Ellwood North	7/25/17	13.5	15					70	0	
102	208	Ellwood North	7/25/17	12						75	0	
103	209	Ellwood North	7/25/17	4	4.5					50	0	
104	210	Ellwood North	7/25/17	14	7					80	0	
105	211	Ellwood North	7/25/17	2.5						40	0	
106	212	Ellwood North	7/25/17	11						75	0	
107	213	Ellwood North	7/25/17	7						70	0	

108	214	Ellwood North	7/25/17	5						50	0	
109	215	Ellwood North	7/25/17	3.5						55	0	
110	216	Ellwood North	7/25/17	5						40	0	
111	217	Ellwood North	7/25/17	7.5	2	3	6.5	4		55	0	
112	218	Ellwood North	7/25/17	7	3	4	3			50	0	
113	219	Ellwood North	7/25/17	15	17	16				75	0	
114	220	Ellwood North	7/25/17	10.5	6.5					55	0	
115	221	Ellwood North	7/25/17	12.5						50	0	
116	222	Ellwood North	7/25/17	7	9					65	0	
117	223	Ellwood North	7/25/17	10	4					70	0	
118	224	Ellwood North	7/25/17	14	7.5					70	0	
119	225	Ellwood North	7/25/17	9						75	0	
120	226	Ellwood North	7/25/17	5.5	6					65	0	
121	227	Ellwood North	7/25/17	12						80	0	
122	228	Ellwood North	7/25/17	17						70	0	
123	229	Ellwood North	7/25/17	7						65	0	
124	230	Ellwood North	7/25/17	12	10					65	0	
125	231	Ellwood North	7/25/17	12	7	14	6	3		60	0	
126	232	Ellwood North	7/25/17	25	20					65	0	
127	233	Ellwood North	7/25/17	15						60	0	
128	234	Ellwood North	7/25/17	9	6	4	3	16	5	60	0	
129	235	Ellwood North	7/25/17	23						90	0	
130	236	Ellwood North	7/25/17	16	6	10	21			100	0	
131	237	Ellwood North	7/25/17	21						90	0	Tree removed
132	238	Ellwood North	2-Aug	16						60	0	
133	239	Ellwood North	8/2/2017	4						55	0	
134	240	Ellwood North	8/2/2017	7	4.5					60	0	
135	241	Ellwood North	8/2/2017	24						80	0	
136	242	Ellwood North	8/2/2017	15						70	0	

137	243	Ellwood North	8/2/2017	11						70	0	
138	244	Ellwood North	8/2/2017	5						50	0	
139	245	Ellwood North	8/2/2017	19	9					75	0	
140	246	Ellwood North	8/2/2017	13						75	0	
141	247	Ellwood North	8/2/2017	4	3					20	0	
142	248	Ellwood North	8/2/2017	2						20	0	
143	249	Ellwood North	8/2/2017	11	5					60	0	
144	250	Ellwood North	8/2/2017	17						70	0	
145	251	Ellwood North	8/2/2017	16						75	0	
146	252	Ellwood North	8/2/2017	7	6					50	0	
147	253	Ellwood North	8/2/2017	6						30	0	
148	254	Ellwood North	8/2/2017	3	2					30	0	
149	255	Ellwood North	8/2/2017	13	7	6	9	4		75	0	
150	256	Ellwood North	8/2/2017	12	13	9	3	3.5		60	0	
151	257	Ellwood North	8/2/2017	5						20	0	
152	258	Ellwood North	8/2/2017	36						90	0	
153	259	Ellwood North	8/2/2017	12	5					65	0	
154	260	Ellwood North	8/2/2017	13	12					50	0	
155	261	Ellwood North	8/2/2017	6.5						60	0	
156	262	Ellwood North	8/2/2017	13						50	0	
157	263	Ellwood North	8/2/2017	21						50	0	
158	264	Ellwood North	8/2/2017	12	7					60	0	
159	265	Ellwood North	8/2/2017	13						60	0	
160	266	Ellwood North	8/2/2017	16						80	0	
161	267	Ellwood North	8/2/2017	24						65	0	
162	268	Ellwood North	8/2/2017	24						65	0	
163	269	Ellwood North	8/2/2017	20						75	0	
164	270	Ellwood North	8/2/2017	17	13					75	0	
165	271	Ellwood North	8/2/2017	16	19					80	0	
166	272	Ellwood North	8/2/2017	10						65	0	

167	273	Ellwood North	8/2/2017	12						60	0	
168	274	Ellwood North	8/2/2017	5	1.5					30	0	
169	275	Ellwood North	8/2/2017	17						85	0	
170	276	Ellwood North	8/2/2017	8						50	0	
171	277	Ellwood North	8/2/2017	15						70	0	
172	278	Ellwood North	8/2/2017	19	11					65	0	
173	279	Ellwood North	8/2/2017	11						60	0	
174	280	Ellwood North	8/2/2017	10	6					55	0	
175	281	Ellwood North	8/2/2017	21	10					45	0	
176	282	Ellwood North	8/2/2017	6	3	5.5	5			30	0	
177	283	Ellwood North	8/2/2017	14	13	6				50	0	
178	284	Ellwood North	8/2/2017	14	12	5				65	0	
179	285	Ellwood North	8/2/2017	6						25	0	
180	286	Ellwood North	8/2/2017	9	5					55	0	
181	287	Ellwood North	8/2/2017	9	12					60	0	
182	288	Ellwood North	8/2/2017	9						55	0	
183	289	Ellwood North	8/2/2017	12	5					65	0	
184	290	Ellwood North	8/2/2017	3	2					45	0	
185	291	Ellwood North	8/2/2017	14						80	0	
186	292	Ellwood North	8/2/2017	6.5	10					65	0	
187	293	Ellwood North	8/2/2017	9						50	0	
188	294	Ellwood North	8/2/2017	5	3.5	5				45	0	
189	295	Ellwood North	8/2/2017	14	13					60	0	
190	296	Ellwood North	8/2/2017	9						50	0	
191	297	Ellwood North	8/2/2017	7	1.5	6	1.5			50	0	
192	298	Ellwood North	8/2/2017	15	19					80	0	
193	299	Ellwood North	8/2/2017	9	9	16	15			75	0	
194	300	Ellwood North	8/2/2017	15	4	20	7			65	0	
195	401	Ellwood North	8/2/2017	10						50	0	
196	402	Ellwood North	8/2/2017	24	10					75	0	

197	403	Ellwood North	8/2/2017	15	4					65	0	
198	404	Ellwood North	8/2/2017	13	16					80	0	
199	405	Ellwood North	8/2/2017	4	4					35	0	
200	406	Ellwood North	8/2/2017	9	12					60	0	
201	407	Ellwood North	8/2/2017	14	10	5.5	4			60	0	
202	408	Ellwood North	8/2/2017	10						70	0	
203	409	Ellwood North	8/2/2017	12						50	0	
204	410	Ellwood North	8/2/2017	8	12					60	0	
205	411	Ellwood North	8/2/2017	12						50	0	
206	412	Ellwood North	8/2/2017	17						80	0	
207	413	Ellwood North	8/2/2017	14	9					80	0	
208	414	Ellwood North	8/2/2017	8.5						50	0	
209	415	Ellwood North	8/2/2017	16						75	0	
210	416	Ellwood North	8/2/2017	14						70	0	
211	417	Ellwood North	8/2/2017	15						75	0	
212	418	Ellwood North	8/2/2017	13	13	4	6			65	0	
213	419	Ellwood North	8/2/2017	18	10	6	1.5			80	0	
214	420	Ellwood North	8/2/2017	12						75	0	
215	421	Ellwood North	8/2/2017	14	5					90	0	
216	422	Ellwood North	8/2/2017	16	3.5	4.5	9			100+	0	
217	423	Ellwood North	8/2/2017	18						100+	0	
218	424	Ellwood North	8/2/2017	14						20	0	
219	425	Ellwood North	8/2/2017	14	3					85	0	
220	426	Ellwood North	8/2/2017	8.5						40	0	
221	427	Ellwood North	8/2/2017	12	4					70	0	
222	428	Ellwood North	8/2/2017	21	9					75	0	
223	429	Ellwood North	8/2/2017	15	7	14				75	0	
224	430	Ellwood North	8/2/2017	5	3					25	0	
225	431	Ellwood North	8/2/2017	21						100+	0	
226	432	Ellwood North	8/2/2017	13	10					65	0	

227	433	Ellwood North	8/2/2017	17	5	7	2			80	0	
228	434	Ellwood North	8/2/2017	19	18	7				90	0	
229	435	Ellwood North	8/2/2017	10.5	13					90	0	
230	436	Ellwood North	8/2/2017	7	7					50	0	
231	437	Ellwood North	8/2/2017	7.5						60	0	
232	438	Ellwood North	1/12/1900	12	1.5	1.5	1			45	0	
233	439	Ellwood North	8/2/2017	16	3.5					70	0	
234	440	Ellwood North	8/2/2017	13						65	0	
235	441	Ellwood North	8/2/2017	9						75	0	
236	442	Ellwood North	8/2/2017	13						65	0	
237	443	Ellwood North	8/2/2017	16	5	4	4			75	0	
238	444	Ellwood North	8/2/2017	3.5						30	0	
239	445	Ellwood North	8/2/2017	25	3.5					80	0	
240	446	Ellwood North	8/2/2017	36						90	0	
241	447	Ellwood North	8/2/2017	7	6	2.5				50	0	
242	448	Ellwood North	8/2/2017	7	5					55	0	
243	449	Ellwood North	8/2/2017	13						60	0	
244	450	Ellwood North	8/2/2017	19	15	17				65	0	
245	451	Ellwood North	8/2/2017	14	15	12				85	0	
246	452	Ellwood North	8/2/2017	20						90	0	
247	453	Ellwood North	8/2/2017	9	17					80	0	
248	454	Ellwood North	8/2/2017	9	3.5	15	15			75	0	
249	455	Ellwood North	8/2/2017	24						70	0	
250	456	Ellwood North	8/2/2017	21						80	0	
251	457	Ellwood North	8/2/2017	18						75	0	
252	458	Ellwood North	8/2/2017	27	16	16	24			80	0	
253	459	Ellwood North	8/2/2017	7	3.5					50	0	
254	460	Ellwood North	8/2/2017	8						50	0	
255	461	Ellwood North	8/2/2017	7	3	5	11			40	0	
256	462	Ellwood North	8/2/2017	24						70	0	

257	463	Ellwood North	8/2/2017	23						75	0	
258	464	Ellwood North	8/2/2017	7	6					50	0	
259	465	Sand Piper	8/2/2017	14	12	12	24	18	3	70	0	
260	466	Sand Piper	8/2/2017	9	4	4				70	0	
261	467	Sand Piper	8/2/2017	7	11	4				60	0	
262	468	Sand Piper	8/2/2017	22						80	0	
263	469	Sand Piper	8/2/2017	18	17	5	4	14	12	85	1	
264	470	Sand Piper	8/2/2017	26	24	10				75	0	
265	482	N Path of Main	8/2/2017	16						65	0	
266	483	Ellwood West	8/2/2017	55						75	0	
267	484	Ellwood West	8/2/2017	8	9	7				65	0	
268	485	Ellwood West	8/2/2017	10						75	0	
269	486	Ellwood East	8/2/2017	13						60	0	
270	487	Ellwood East	8/2/2017	9.5						35	0	
271	488	Ellwood East	8/2/2017	18						70	0	
272	489	Ellwood East	8/2/2017	16						75	1	
273	490	Ellwood East	8/2/2017	10						35	0	
274	491	Ellwood East	8/2/2017	5	3					40	0	
275	492	Ellwood East	8/2/2017	18						50	0	
276	493	Ellwood East	8/2/2017	13	14.5					75	1	
277	494	Ellwood East	8/2/2017	17						75	0	
278	495	Ellwood East	8/2/2017	7.5						50	0	
279	496	Ellwood East	8/2/2017	10						50	0	
280	497	Ellwood East	8/2/2017	6						45	0	
281	498	Ellwood East	8/2/2017	14						70	0	
282	499	Ellwood East	8/2/2017	13						75	0	
283	500	Ellwood East	8/2/2017	13						65	0	
284	501	Ellwood East	8/2/2017	33						80	0	
285	502	Ellwood East	8/2/2017	9						40	0	
286	503	Ellwood East	8/2/2017	8						22	0	

287	504	Ellwood East	8/2/2017	11						65	0	
288	505	Ellwood East	8/2/2017	16						60	0	
289	506	Ellwood East	8/2/2017	6.5						50	0	
290	507	Ellwood East	8/2/2017	31						90	0	
291	508	Ellwood East	8/2/2017	5.5						35	0	
292	509	Ellwood East	8/2/2017	8						50	0	
293	510	Ellwood East	8/2/2017	9.5						18	0	
294	511	Ellwood East	8/2/2017	6						10	0	
295	512	Ellwood East	8/2/2017	18						80	0	
296	513	Ellwood East	8/2/2017	13						40	0	
297	514	Ellwood East	8/2/2017	3.5	2					35	0	
298	515	Ellwood East	8/2/2017	7						70	0	

Table 5. **Trees located within the Ellwood East** monarch butterfly aggregation site that are rated as Dead (0) or Dying Hazard Tree (1). These trees are not on City of Goleta property and are not included in this Tree Action Plan other than for informational purposes.

	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
1	186	Ellwood East	4/4/17	11.5	-	-	50	-	0	Extreme lean toward clearing.	Remove	1
2	187	Ellwood East	4/4/17	20	-	-	80		0	-	Remove	1
3	190	Ellwood East	4/4/17	12.5	-	-	70	-	0	Leaning into another live tree (tree 191)	Remove	1
4	193	Ellwood East	4/4/17	40	-	-	75	30	1	Rotting at base. Leans into tree 191. Cluster tree.	Keep	3
5	194	Ellwood East	4/4/17	8	-	-	50	15	1	Slight lean	Remove	1
6	197	Ellwood East	4/4/17	9	-	-	60	10	1	Slight lean toward clearing. Cluster tree	Keep	3
7	202	Ellwood East	4/4/17	9	-	-	50	8	1	Co-dominant trunk broke off and left a hole. Tree rot.	Keep	3
8	497	Ellwood East	4/20/17	34	-	-	100	60	1	Slight lean. Trunk rot.	Keep	3
Ellwood East (Along Trails and to be Updated Following Additional Survey Work)												
	Tag	**Location**	**Assess date**	**DBH**	**DBH 2**	**DBH 3**	**Ht.**	**Wd.**	**Health**	**Structural/Notes**	**Remove, Keep and/or Trim**	**Work priority**

	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
1	516	Ellwood East	8/2/2017	12	-	-	60	-	0		Remove	
2	517	Ellwood East	8/2/2017	30	-	-	85	-	0		Remove	
3	518	Ellwood East	8/2/2017	8	-	-	10	-	0		Remove	
4	519	Ellwood East	8/2/2017	13	-	-	40	-	0		Remove	
5	520	Ellwood East	8/2/2017	8	-	-	50	-	0		Remove	
6	521	Ellwood East	8/2/2017	9	7	-	80	-	0		Remove	
7	522	Ellwood East	8/2/2017	11	-	-	75	-	0		Remove	
8	523	Ellwood East	8/2/2017	14	-	-	30	-	0		Remove	
9	524	Ellwood East	8/2/2017	7	7	-	50	-	0		Remove	
10	525	Ellwood East	8/2/2017	12	-	-	60	-	0		Remove	
11	526	Ellwood East	8/2/2017	14	-	-	70	-	0		Remove	
12	527	Ellwood East	8/2/2017	4.5	5.5	-	50	-	0		Remove	
13	528	Ellwood East	8/2/2017	11.5	-	-	65	-	0		Remove	

	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
14	529	Ellwood East	8/2/2017	7	5.5	-	60	-	0		Remove	
15	530	Ellwood East	8/2/2017	12	7	-	55	-	0		Remove	
16	531	Ellwood East	8/2/2017	6	4	6.5	18	-			Remove	
17	532	Ellwood East	8/2/2017	7	-	-	50	-	0		Remove	
18	533	Ellwood East	8/2/2017	6	7	2.5	30	1	0		Remove	
19	534	Ellwood East	8/2/2017	7	-	-	50	-	0		Remove	
20	535	Ellwood East	8/2/2017	6	-	-	40	-	0		Remove	
21	536	Ellwood East	8/2/2017	7.5	-	-	50	-	0		Remove	
22	537	Ellwood East	8/2/2017	6	-	-	35	-	0		Remove	
23	538	Ellwood East	8/2/2017	9	-	-	40	-	0		Remove	
24	539	Ellwood East	8/2/2017	4	-	-	45	-	0		Remove	

Table 6. **Coronado Area Dead/Dying Trees.** These trees are not on City of Goleta property and any work arrangements must be made with the property owner, Santa Barbara Land Trust. These trees are not on City of Goleta property and are not included in this Tree Action Plan other than for informational purposes.

	Tag	Location	Assess date	DBH	DBH 2	DBH 3	Ht.	Wd.	Health	Structural/Notes	Remove, Keep and/or Trim	Work priority
1	471	Coronado	8/2/2017	4.5	3.5	5	2.5		0	-	Remove	1
2	472	Coronado	8/2/2017	4					0	-	Remove	1
3	473	Coronado	8/2/2017	9	4				0	-	Remove	1
4	474	Coronado	8/2/2017	9					0	-	Remove	1
5	475	Coronado	8/2/2017	9.5					0	-	Remove	1
6	476	Coronado	8/2/2017	4					0	-	Remove	1
7	477	Coronado	8/2/2017	6					0	-	Remove	1
8	478	Coronado	8/2/2017	8	7.5				0	-	Remove	1
9	479	Coronado	8/2/2017	9	9.5				0	-	Remove	1
10	480	Coronado	8/2/2017	20					1	-	Remove	1
11	481	Coronado	8/2/2017	12	6				0	-	Remove	1

7.0 Figures

Figure 1. The Ellwood Forest

0 250 500 1,000 1,500 Feet

N

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City of Goleta
Ellwood Grove Restoration

Map Updated: August 08, 2017 07:42 AM
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Figure 2. Property Boundaries

0 250 500 1,000 1,500 Feet

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Figure 3. Monarch Butterfly Aggregation Locations

0 250 500 1,000 1,500 Feet

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Figure 4. Aggregation Setbacks

0 250 500 1,000 1,500 Feet

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Figure 5. Canopy Health

0 250 500 1,000 1,500 Feet

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Staging Areas and Access Routes

0 250 500 1,000 1,500 Feet

N

City of Goleta
Ellwood Mesa Open Space

8.0 Exhibits

Exhibit A – Tagged Tree Locations – 14 pages

Exhibit B – Excerpt of the UCSF Mount Sutro Open Space Reserve Vegetation Management Plan, Executive Summary

Exhibit C – Draft Butterfly Aggregation Tree Removal Form

Exhibit D – Draft Non-Aggregation Area Tree Removal Form

Exhibit A – Tagged tree locations – 14 pages

Ellwood Mesa Hazardous Dead Trees - Page 1

0 25 50 100 150 Feet

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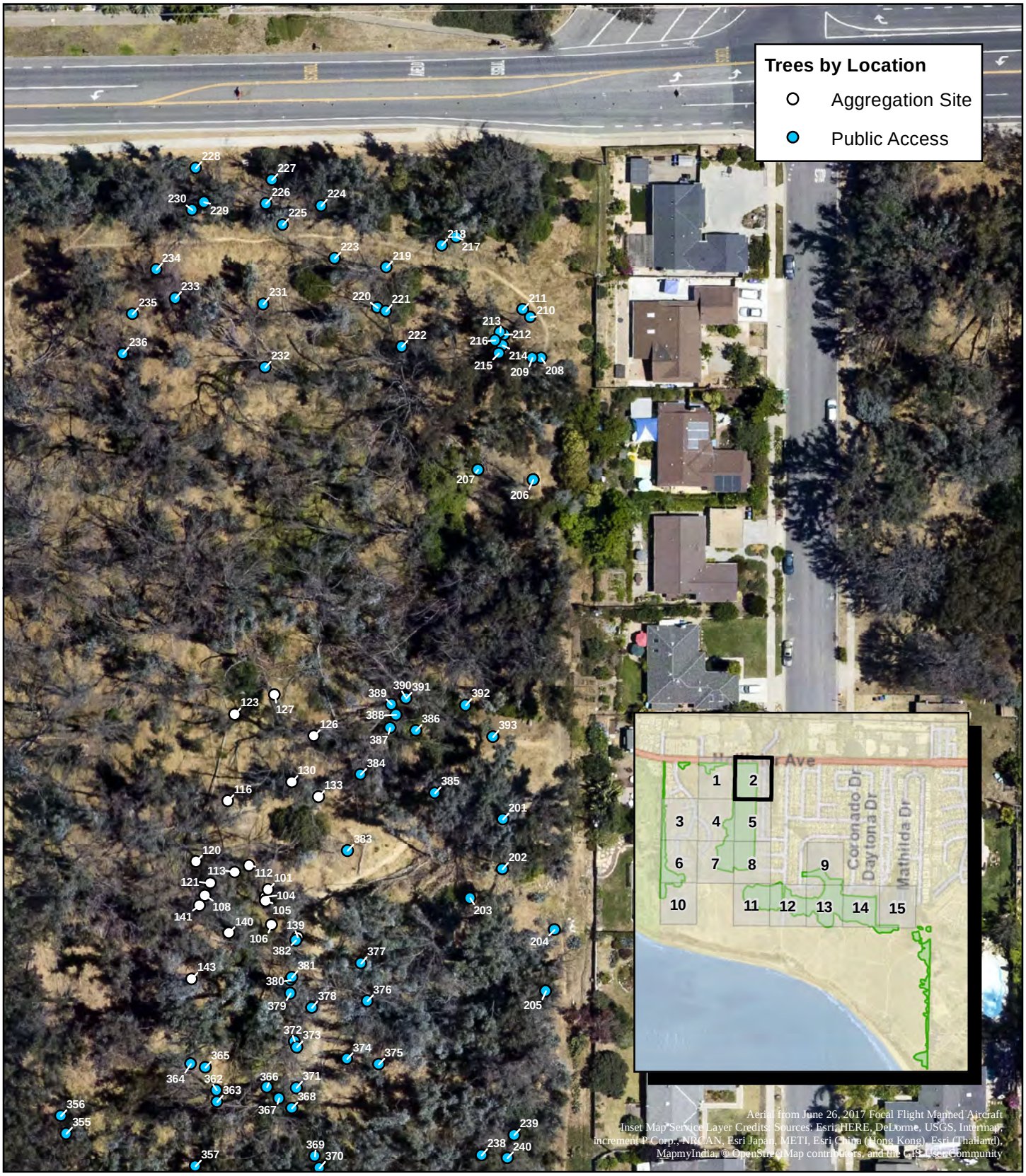
Ellwood Mesa Hazardous Dead Trees - Page 2



0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 3

0 25 50 100 150 Feet

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Ellwood Mesa Hazardous Dead Trees - Page 4

0 25 50 100 150 Feet

N

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Map Updated: August 06, 2017 05:24 PM
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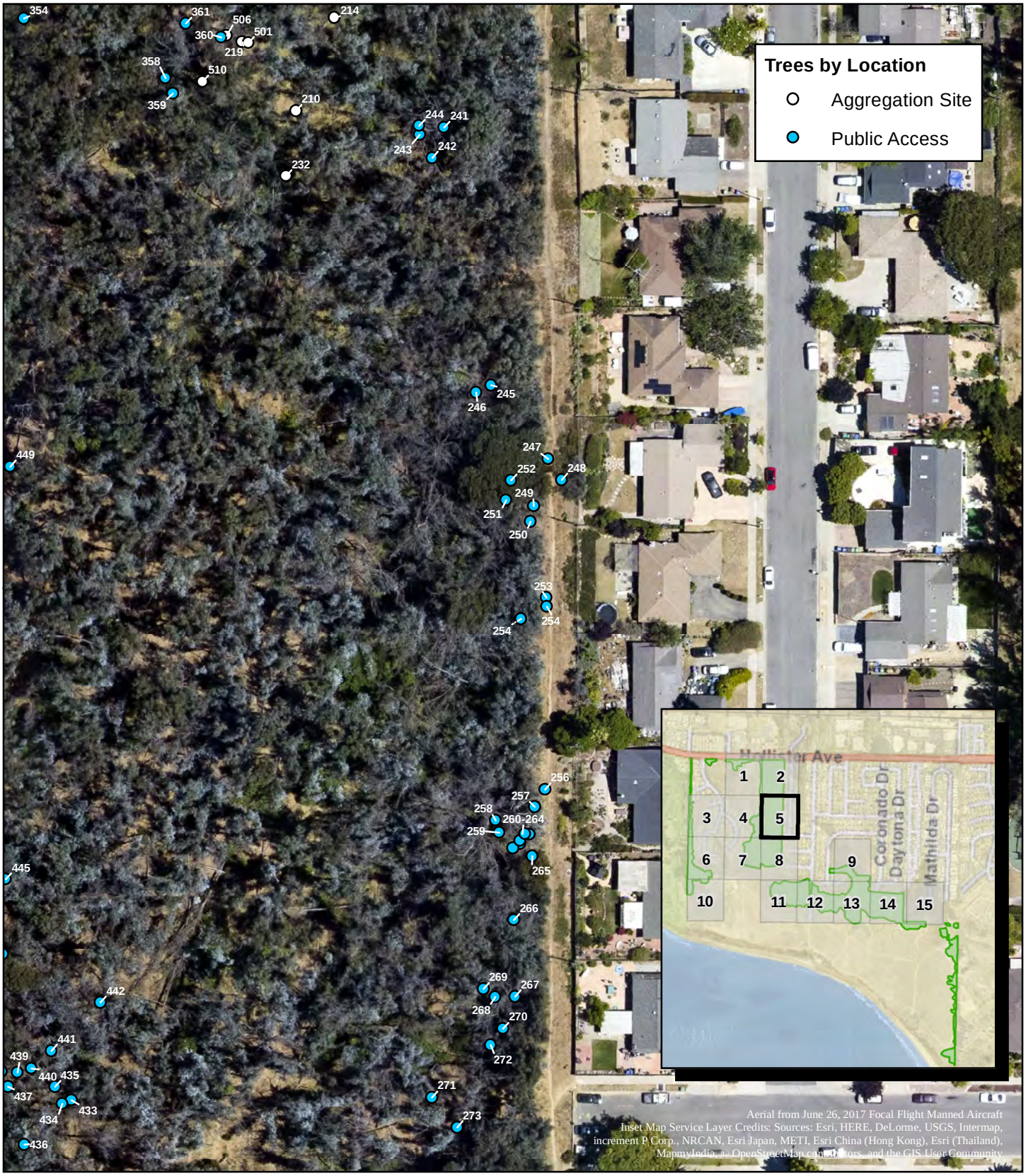
Ellwood Mesa Hazardous Dead Trees - Page 5



0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 6

0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 7

0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 8

0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 9

0 25 50 100 150 Feet

N

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Ellwood Mesa Hazardous Dead Trees - Page 10

0 25 50 100 150 Feet

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Ellwood Mesa Hazardous Dead Trees - Page 11

0 25 50 100 150 Feet

N

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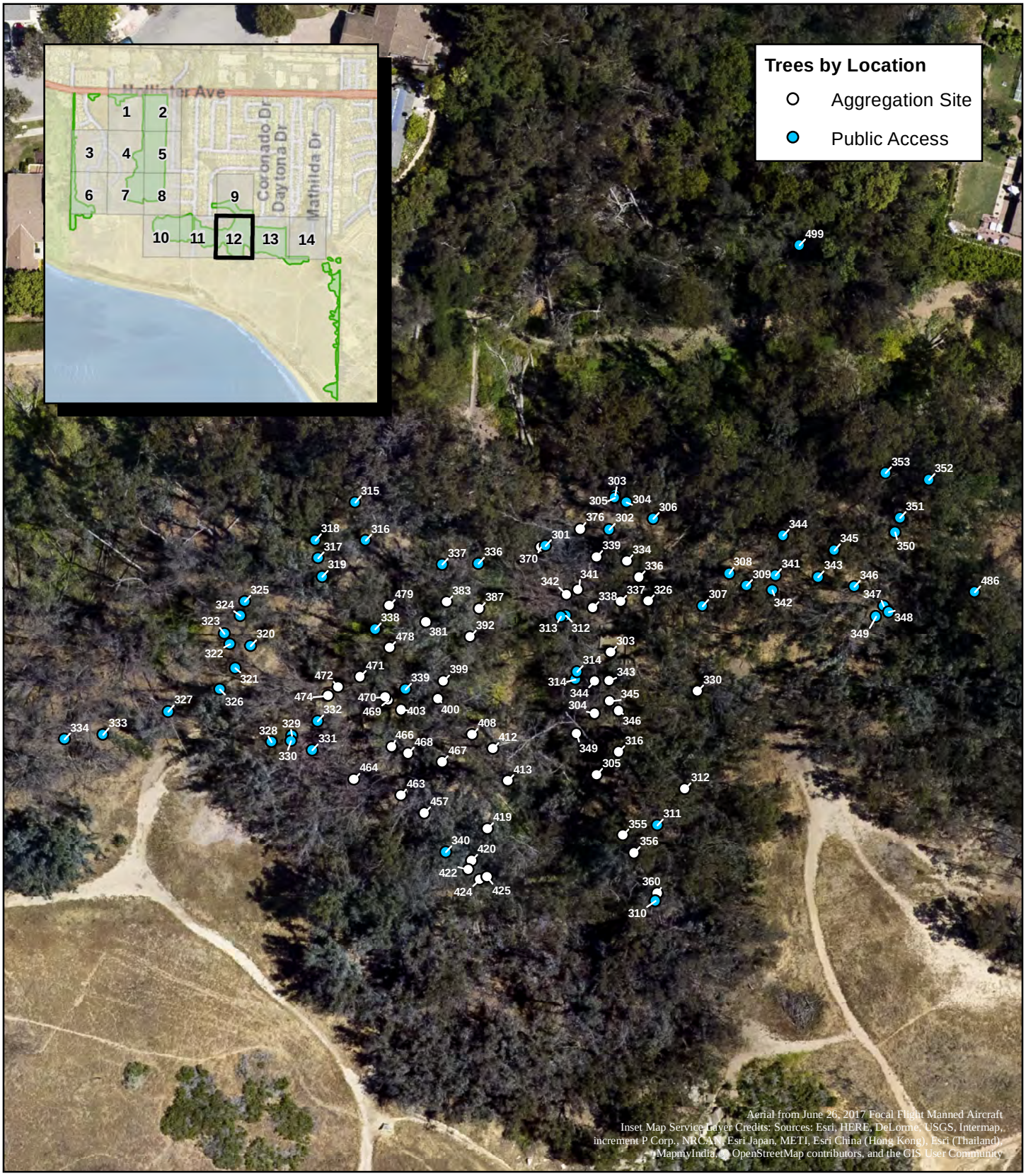
Ellwood Mesa Hazardous Dead Trees - Page 12



0 25 50 100 150 Feet

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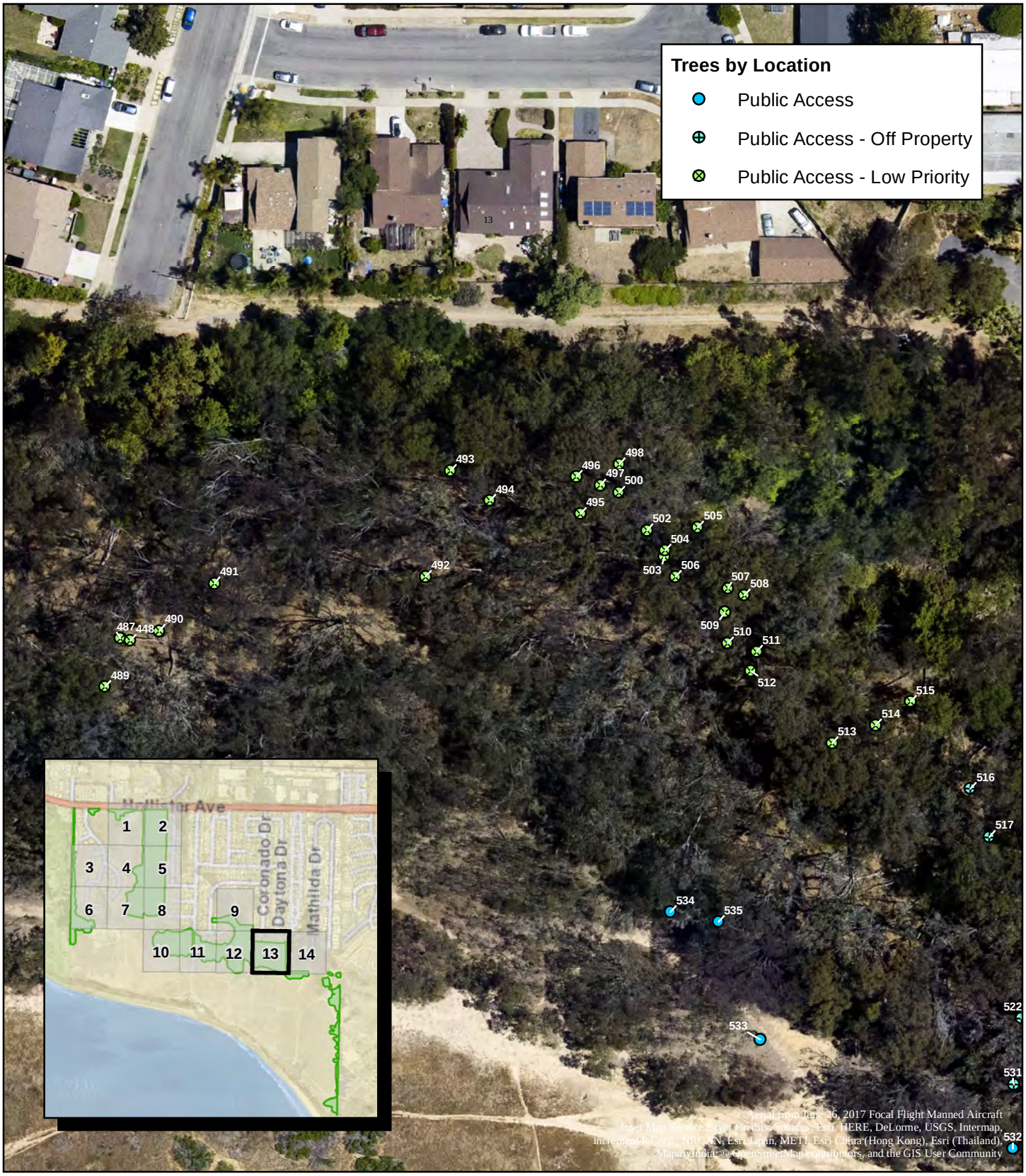
Ellwood Mesa Hazardous Dead Trees - Page 13



0 25 50 100 150 Feet

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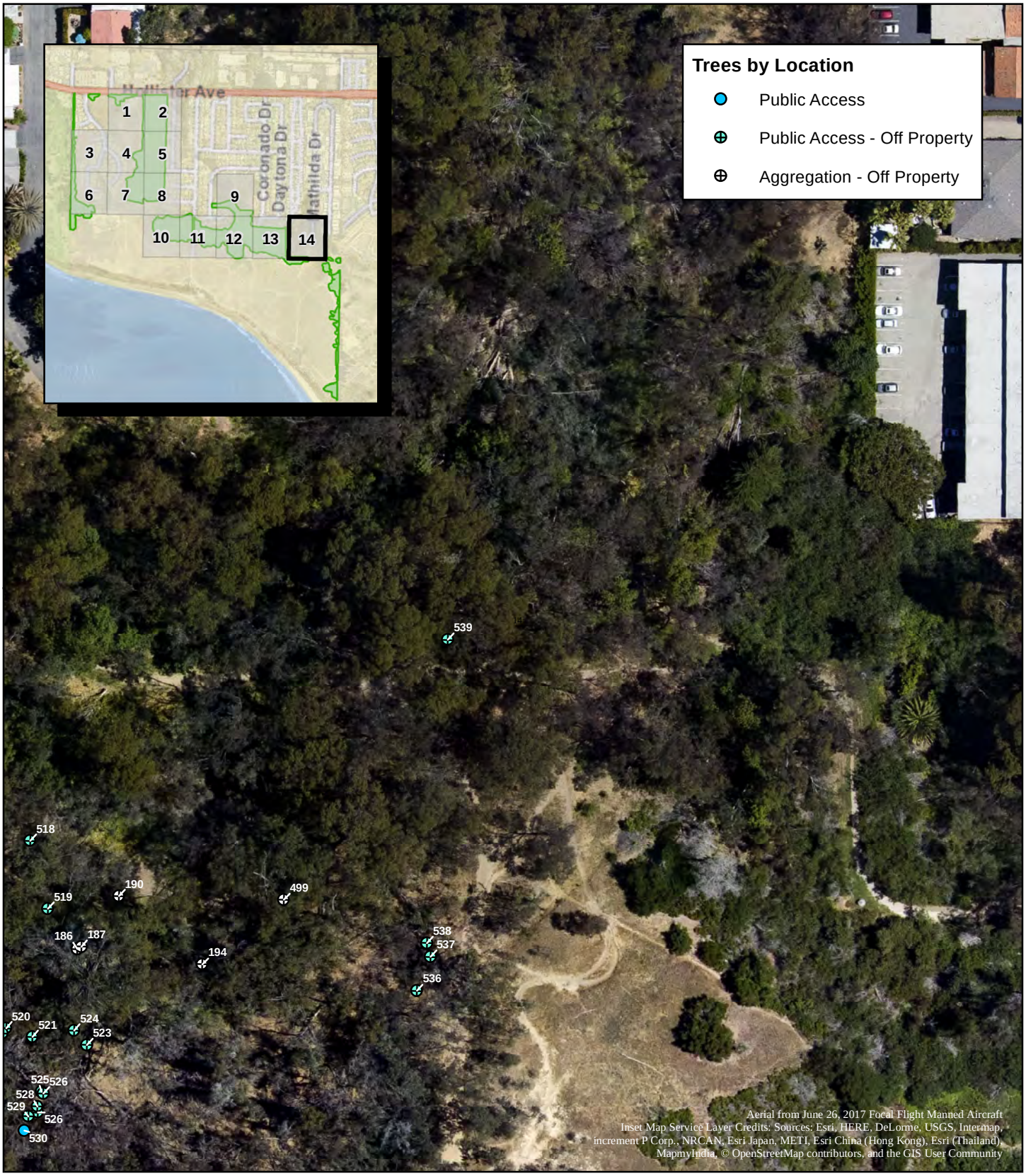
Ellwood Mesa Hazardous Dead Trees - Page 14



0 25 50 100 150 Feet

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Exhibit B – Excerpt of the UCSF Mount Sutro Open Space Reserve Vegetation Management Plan, Executive Summary

Table 2.2-1 Forest Treatments by Phase

Treatment Phase	Treatment
Phase 1 *Initial 5 years* *Focuses on managing risk of hazard trees and initiating forest treatments*	• Establish two seed tree treatment areas (1.05 acres in total) in Forest Type 1 and eight group selection treatment areas (1.75 acres in total) in Forest Types 1, 3, and 4 to remove dead and dying trees • Plant blue gum and other species of eucalyptus across Forest Types 1, 2, and 3 with an approximately 20-foot by 20-foot spacing • Manage tree risk by removing individual dead and dying structurally unsound trees in all four forest types • Control invasive low-growing vines and shrubs that compete with native plants in all four forest types • Continue conservation and enhancement of native plants, and expand native plant conservation from 2 to 5 acres • Remove and/or trim trees to maintain defensible space between buildings and Reserve vegetation • Remove and/or trim vegetation along trails to maintain trails and public access
Phase 2 *6 to 10 years* *Focuses on forest restoration and regeneration*	• Remove dead and dying trees across Forest Types 1, 3, and 4 • Establish group selection or seed tree treatments in areas of low tree density in all four forest types • Plant blue gum, other species of eucalyptus, and native species in Forest Types 1, 2, and 3 with an approximately 20-foot by 20-foot spacing • Continue treatments started in Phase 1 (manage tree risk, plant natives, maintain defensive space, maintain trails) in all forest types
Phase 3 *11+ years* *Focuses on diversifying forest canopy and establishing new generation of trees*	• Update forest inventory prior to starting treatments • Continue removing dead and dying trees in all four forest types • Treat with a mix of individual tree selection, group selection, and seed tree treatments in all forest types • Plant blue gum, other species of eucalyptus, and native species across the Reserve with an approximately 20-foot by 20-foot spacing • Continue treatments started in Phase 1 (manage tree risk, plant natives, maintain defensive space, maintain trails) in all forest types

Methods to Implement Forest Treatments

Vegetation Management Methods

Vegetation would be managed to:

- Remove dead, dying, unhealthy and structurally unsound trees,
- Control invasive low-growing vines and shrubs that would compete with desired vegetation,
- Prevent diseased eucalyptus trees and stumps of trees from re-sprouting (these sprouts would also contain decay), and
- Plant new trees.

Work would be completed using manual and mechanical methods only. No herbicides would be used. Equipment used to implement the treatments would include, but would not be limited to, hand saws, pole saws, chainsaws, D-6 tractors or similar, excavators, backhoes, loaders,

masticators, feller bunchers, pick-up trucks, skidders, forwarders, water trucks, log trucks, chip vans, chippers, tub grinders, stump grinders, and cranes.

A maximum of 35 personnel would be on site at any given time. Typically, up to three crews of up to five workers each would implement the vegetation management activities, including tree removal. They would operate up to two pieces of larger equipment per crew. Vegetation management activities would occur yearly, beginning in September after the end of the nesting season and continue through February. No ground-disturbing activities would occur during a rain event (defined as 0.01 inch or more or precipitation).

Access, Staging, and Water Usage

Temporary access roads would be established in the Reserve to facilitate management activities. Access road creation may require tree and/or stump removal (grinding down stumps below the surface) and surface grading or excavation. Two existing trails would be widened to accommodate equipment.

Temporary landing areas (also known as staging areas) would be created to stage heavy equipment, store hand-held equipment, and store logs and chipped/masticated materials before they are hauled off-site. Landing areas would be no larger than 0.25 acre each, large enough to allow for log trucks and chip vans to turn around. Felled trees would be removed either by chipping the trees and dispersing the chipped vegetation materials on site or bucking and transporting the logs or chips to a disposal facility in log or chip trucks. These trucks would transport materials to an appropriate facility, located outside of San Francisco.

The plan currently does not include irrigation in the initial years of forest treatment. The goal is to establish new trees by planting just prior to the wet season so that irrigation is not needed. If planting and restoration efforts were unsuccessful, plants may receive supplemental water using backpack sprayers. Other options for a water source may include the SFPUC's water tank in Rotary Meadow or other nearby potable water sources. Water may be distributed using temporary, aboveground piping or a temporary water storage tank at the summit that could be used to fill watering trucks. No permanent storage structures would be built in association with the plan, as no permanent structures are allowed to be added to the Reserve.

Mitigation Measures from 2014 LRDP Relevant to the Plan

An EIR was prepared for the 2014 LRDP which was certified by the Regents in November 2014 (State Clearinghouse Number 2013092047). The UCSF 2014 LRDP EIR identified the environmental impacts of the implementation of the 2014 LRDP, including any envisioned plans or activities that could occur across the UCSF campus sites. UCSF is bound to implement these mitigation measures where relevant to the work that it undertakes on its campus sites. Several of the measures are relevant to the plan for the Reserve. These measures are identified throughout Section 4 of this EIR, with the text of the measures included here. Note that only the relevant parts of the measures are shown.

Exhibit C – Aggregation Tree Removal Form

City of Goleta

Monarch Butterfly Aggregation Are Tree Removal Form
To be completed with all required personnel present.

Monarch Butterfly Aggregation Area (Select One)

□ Ellwood North □ Ellwood Main □ Ellwood West

□ Sandpiper □ Ellwood East

Date of Inspection: _____ Date of removal:_____ Tree Tag #:_____

Verification of individual tree to be removed. The undersigned have inspected this individual tree and verified that it is the correct tree to be removed. Removal is to occur on the day stated above.

Certified Arborist to check all that apply

□ Tree is Dead □ Safety Pruning only □ Tree to be cut 6" - 12" above ground

□ Crown is Dead □ Tree to be removed to ground

Likelihood of failure □ Improbable □ Possible □ Probable □ Imminent

The undersigned acknowledge the work action prescribed for this tree.

Printed Name and Title of Required Personnel	Signature	Date
Wildlife Biologist[1]		
Monarch butterfly Ecologist[2]		
Certified Arborist[3]		
Tree Crew Lead[4]		
City Representative[5]		

[1] Wildlife biologist certifies that tree removal will not take nesting birds or other wildlife.

[2] Monarch butterfly Ecologist recommends action specified.

[3] Certified Arborist to check appropriate action on this form.

[4] Tree Crew Lead confirms tree identification for removal or pruning.

[5] City concurs with recommendation

Exhibit D – Trail Tree Removal Form

Blue Tag Trees for safety removal – Working List. Initials are required from the Certified Arborist, Monarch Biologist, City of Goleta, Tree Management Project Manager, and City Biologist at the time each tree is marked for removal.

Blue Tag	Location	DBH (in)	DBH2	DBH3	DBH4	DBH5	DBH6	Ht. (ft.)	Certified Arborist	Monarch Biologist	City of Goleta	Tree Mngmnt	City Biologist
301	Ellwood Main	17.5						15					
302	Ellwood Main	2.5						30					
303	Ellwood Main	10						25					
304	Ellwood Main	2	4.5	9				50					
305	Ellwood Main	10						35					
306	Ellwood Main	10.5						50					
307	Ellwood Main	13.5						50					
308	Ellwood Main	12						55					
309	Ellwood Main	11.5						25					
310	Ellwood Main	10.5						50					
311	Ellwood Main	8.5						45					
312	Ellwood Main	2.5	6					25					
313	Ellwood Main	6						25					
314	Ellwood Main	24						20					
315	Ellwood Main	17.5						40					
316	Ellwood Main	3.5						25					
317	Ellwood Main	14						22					
318	Ellwood Main	14.5						18					
319	Ellwood Main	2	7	4				45					
320	Ellwood Main	8						60					
321	Ellwood Main	10						60					
322	Ellwood Main	11.5						40					
323	Ellwood Main	24						55					
324	Ellwood Main	13.5						65					
325	Ellwood Main	7.5	6	2				50					
326	Ellwood Main	6						20					
327	Ellwood Main	16	20					60					
328	Ellwood Main	7.5						50					
329	Ellwood Main	7						60					

Blue Tag Trees for safety removal – Working List. Initials are required from the Certified Arborist, Monarch Biologist, City of Goleta, Tree Management Project Manager, and City Biologist at the time each tree is marked for removal.

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306	Ellwood Main	10.5						50					
307	Ellwood Main	13.5						50					
308	Ellwood Main	12						55					
309	Ellwood Main	11.5						25					
310	Ellwood Main	10.5						50					
311	Ellwood Main	8.5						45					
312	Ellwood Main	2.5	6					25					
313	Ellwood Main	6						25					
314	Ellwood Main	24						20					
315	Ellwood Main	17.5						40					
316	Ellwood Main	3.5						25					
317	Ellwood Main	14						22					
318	Ellwood Main	14.5						18					
319	Ellwood Main	2	7	4				45					
320	Ellwood Main	8						60					
321	Ellwood Main	10						60					
322	Ellwood Main	11.5						40					
323	Ellwood Main	24						55					
324	Ellwood Main	13.5						65					
325	Ellwood Main	7.5	6	2				50					
326	Ellwood Main	6						20					
327	Ellwood Main	16	20					60					
328	Ellwood Main	7.5						50					
329	Ellwood Main	7						60					

Attachment 2

Comparison of Options

Attachment 2 – Comparison of Options

	Option 1 (Staff Recommendation) **Hazardous Tree Removal Before Habitat Management Plan** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP**	**Option 2** **Targeted Care for Dying Trees with Significant Value** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP or Monarchs**	**Option 3** **Phased Tree Removal Plan** ***Timing*: begin tree removal immediately in target area, timing on remainder of grove uncertain** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, CDP and DP**	**Option 4** **Removal of Trees Rated "0" Only** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP**	**Option 5** **Tree Removal After Habitat Management Plan Approved** ***Timing*: begin 4 to 5 Years** ***Permit Type*: CDP and DP**
1	All trees rated 0 and 1 would be removed over the next 1-2 years, beginning immediately. Removal areas would be prioritized by safety, habitat, and recreation factors.	All trees rated 0 and 1, would be removed over the next 1-2 years, beginning immediately, except for 26 trees rated 1, which would remain under arborist care through the upcoming winter season. Removal areas would be prioritized by safety, habitat, and recreation factors.	All trees rated 0 and 1 would be removed from a single area, south of Ellwood North. Future actions and methods for 0 and 1 tree removal activity would be approved separately.	All trees rated 0 would be removed over the next 1-2 years, beginning immediately. Removal areas would be prioritized by safety, habitat, and recreation factors.	No trees rated 0 and 1 would be removed until a Habitat Management Plan is approved.
2	Trees rated 0 and 1 would be removed.	All trees rated 0 and 1 would be removed. Removal of 26 trees with a 1 rating that provide short-term, but significant butterfly habitat would be delayed.	Trees rated 0 and 1 would be removed from the area south of Ellwood North.	Only trees rated 0 would be removed.	No trees would be removed at this time.
3	Partial public access would be restored within 3-4 months, with full public access restored within 2 years.	Partial public access would be restored within 3-4 months, with full public access restored within 2 years.	Public access to some areas may be closed for up to 5 years. Earliest access restored to some areas in 3-4 months.	Partial public access would be restored within 3-4 months. Full public access would be delayed indefinitely due to danger posed by remaining 1-rated trees.	Public access to some areas may be closed for up to 10 years. Earliest access restored to some areas in 3 years.
4	Stumps begin to sprout; replacement habitat begins to form. Some regrowth of young trees in localized areas following removal of dead/dying trees.	Stumps begin to sprout; replacement habitat begins to form. Some regrowth of young trees in localized areas following removal of dead/dying trees.	Some growth of young trees in localized areas following removal of dead/dying trees.	Some growth of young trees in localized areas following removal of dead/dying trees. Presence of dying (1-rated) trees inhibits new growth in other areas.	Growth and regeneration expected to be limited, due to fallen debris and shading. Delay in start of stump sprouting, lesser quality of replacement habitat.
5	No fencing necessary.	No fencing necessary.	Cost to fence around select groves, and heightened risk due to noncompliance of visitors.	Significant cost to fence around groves.	Significant cost to fence around groves.
6	Healthy trees protected from falling dead trees.	Healthy trees protected from falling dead trees.	Healthy trees may be damaged/killed by falling dead trees in some areas	Healthy trees damaged/killed by falling dying trees	Healthy trees damaged/killed by falling dead trees
7	Reduction in fire risk due to the reduction of fuels which includes removing downed limbs, tree debris and understory.	Reduction in fire risk due to the reduction of fuels which includes removing downed limbs, tree debris and understory.	Build-up of dry fuels in some areas, risk of fire spreading from those areas.	Build-up of dry fuels, increased fire risk.	Build-up of dry fuels, increased fire risk.
8	Reduction in pests, maximizing the potential for remaining trees to resist pest damage.	Reduction in pests, maximizing the potential for remaining trees to resist pest damage.	Existing pests remain, further stressing health of trees.	Existing pests remain, further stressing health of trees.	Existing pests remain, further stressing health of trees.
9	Ability to patrol grove for homeless encampments.	Ability to patrol grove for homeless encampments.	Ability to patrol portions of grove for homeless encampments.	Crews cannot patrol looking for homeless encampments. Would need special groups of three or more so there are lookouts for falling trees and limbs.	Crews cannot patrol looking for homeless encampments. Would need special groups of three or more so there are lookouts for falling trees and limbs.
10	Hazard addressed, restoration completed over time. Apply for grants to augment funding, enabling areas to be quickly restored.	Hazard addressed, restoration completed over time. Apply for grants to augment funding, enabling areas to be quickly restored.	Hazard largely not addressed, restoration deferred except in removal area. Immediate restoration cost reduced due to small area of tree removal.	Hazard largely not addressed, restoration deferred. Seek grant funding to assist in Habitat Management Plan implementation when complete.	Hazard largely not addressed, restoration deferred. Seek grant funding to assist in Habitat Management Plan implementation when complete.

Attachment 2 – Comparison of Options

	Option 1 (Staff Recommendation) **Hazardous Tree Removal Before Habitat Management Plan** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP**	**Option 2** **Targeted Care for Dying Trees with Significant Value** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP or Monarchs**	**Option 3** **Phased Tree Removal Plan** ***Timing*: begin tree removal immediately in target area, timing on remainder of grove uncertain** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, CDP and DP**	**Option 4** **Removal of Trees Rated "0" Only** ***Timing*:** **Tree Removal: Immediate** **Habitat Management Plan and restoration 3 to 5 years** ***Permit* Type: Emergency Permit, Follow-on CDP and DP**	**Option 5** **Tree Removal After Habitat Management Plan Approved** ***Timing*: begin 4 to 5 Years** ***Permit Type*: CDP and DP**
11	Cost effective, but removal costs concentrated over a 1 to 2-year period.	Cost effective, but removal costs concentrated over a 1 to 2-year period. Additional costs for second contractor mobilization to remove 26 remaining dying trees.	Costs for initial removal area spread over multiple years, but per-tree costs likely higher due to scale.	Initial removal costs concentrated over a 1 to 2-year period. Additional costs for subsequent contractor mobilization(s) likely to remove additional dead trees.	Removals and restoration likely to be coordinated and more complex; likely more expensive and long-term.
12	Imminent threats to grove abated, butterfly habitat persists. Restoration initiated to develop replacement habitat.	Imminent threats to grove abated, butterfly habitat persists. Restoration initiated to develop replacement habitat.	Threats to grove removed and restoration initiated in some areas.	Imminent threats to grove persist, increased risk of grove loss due to fire or pests. No immediate restoration. Butterfly conditions likely to deteriorate.	Imminent threats to grove persist, increased risk of grove loss due to fire or pests. No immediate restoration. Butterfly conditions likely to deteriorate.
13	Expedited emergency processes with no CEQA review required (Immediate-1 month).	Expedited emergency processes with no CEQA review required (Immediate-1 month).	Full permitting processes and CEQA (minimum of 1 year)	Expedited emergency processes with no CEQA review required (Immediate-1 month).	Full permitting processes and CEQA (minimum of 1 year after the Habitat Management Plan is prepared)

Attachment 3

Map of Option 1

Tree Removal Locations - Option 1

0 250 500 1,000 1,500 Feet

N

City of Goleta
Ellwood Mesa Open Space

Attachment 4

Map of Option 2

Trees Proposed for Targeted Care - Option 2

0 250 500 1,000 1,500 Feet

N

City of Goleta
Ellwood Mesa Open Space

Attachment 5

Map of Option 3

Tree Removal Locations - Option 3

0 250 500 1,000 1,500 Feet

N

City of Goleta
Ellwood Mesa Open Space

Attachment 6

Staging Areas

Staging Areas and Access Routes

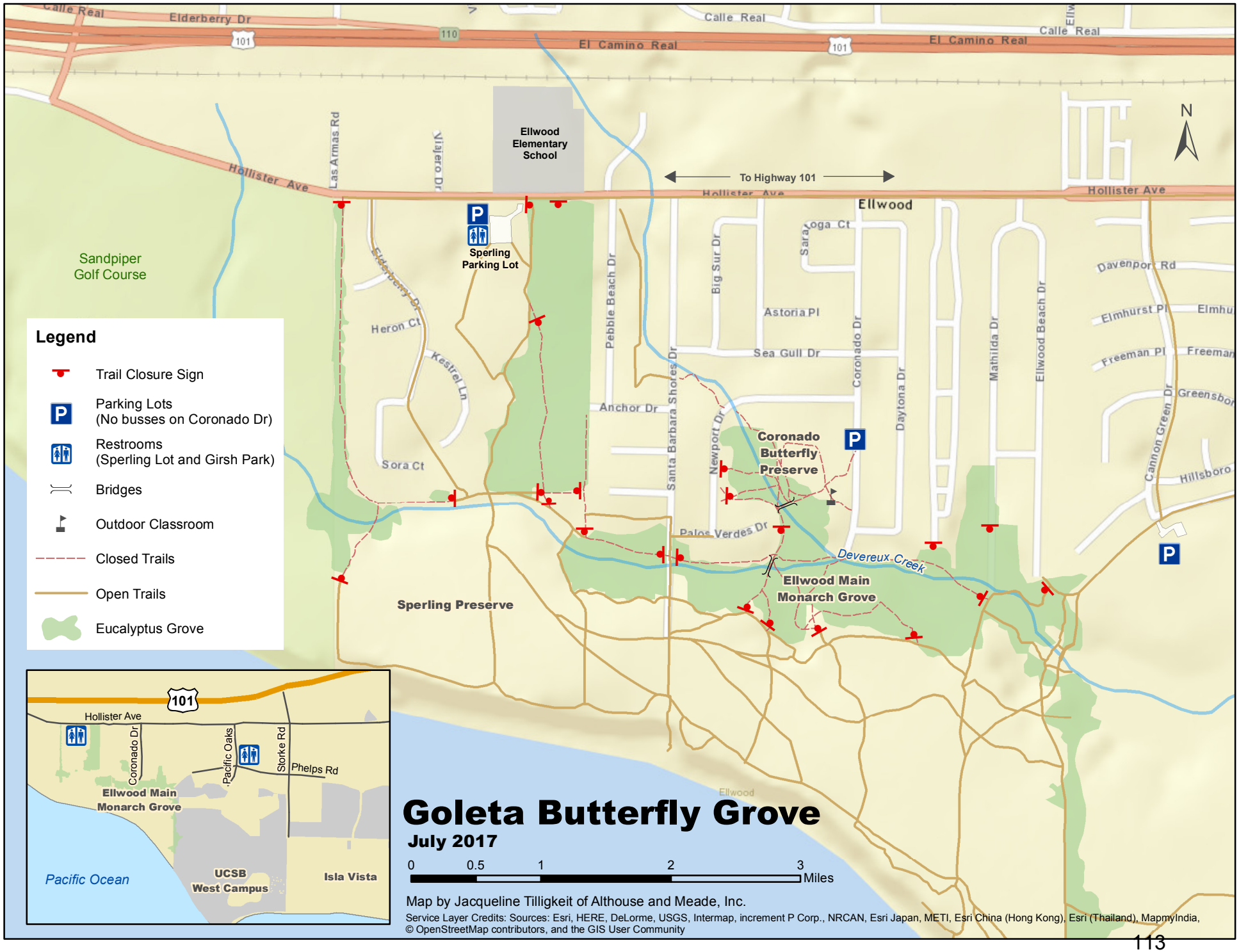
0 250 500 1,000 1,500 Feet

N

City of Goleta
Ellwood Mesa Open Space

Attachment 7

Current Trail Closures


Legend
Trail Closure Sign
Parking Lots
(No busses on Coronado Dr)
Restrooms
(Sperling Lot and Girsh Park)
Bridges
Outdoor Classroom
Closed Trails
Open Trails
Eucalyptus Grove
Goleta Butterfly Grove
July 2017
0 0.5 1 2 3 Miles
Map by Jacqueline Tilligkeit of Althouse and Meade, Inc.
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia,
© OpenStreetMap contributors, and the GIS User Community
Ellwood Elementary School
Sperling Parking Lot
Coronado Butterfly Preserve
Ellwood Main Monarch Grove
Sperling Preserve
Sandpiper Golf Course
To Highway 101
Hollister Ave
Calle Real
El Camino Real
Elderberry Dr
Las Armas Rd
Pebble Beach Dr
Big Sur Dr
Astoria Pl
Sea Gull Dr
Coronado Dr
Daytona Dr
Mathilda Dr
Ellwood Beach Dr
Anchor Dr
Santa Barbara Shores Dr
Newport Dr
Palos Verdes Dr
Devereux Creek
Heron Ct
Kestrel Ln
Sora Ct
Davenport Rd
Elmhurst Pl
Freeman Pl
Greensboro
Cannon Green Dr
Hillsboro
Ellwood
Pacific Ocean
UCSB West Campus
Isla Vista
Pacific Oaks
Storke Rd
Phelps Rd
101

Attachment 2
Tree Removal Options Pros and Cons List

ELLWOOD MESA TREE REMOVAL OPTIONS: PROS AND CONS

Option 1: Remove trees rated as 0 or 1 in the near-term (starting as soon as possible and continue removal efforts over the next year). Habitat Management Plan and restoration to follow.

Pros:

- Protects remaining existing butterfly and wildlife habitat from further degradation.
- Reduces risks and impacts on healthy trees (spread of pests/insects, fire, falling trees and limbs).
- Increases the potential for young trees to grow and for some re-growth in tree removal areas.
- Removes the immediate risk to the public of falling trees.
- Expedites the re-opening of closed trails. Maximizes public access. Trails to be opened as soon as the immediate danger is eliminated.
- No fencing or daily monitoring of signage necessary.
- Hazard removal allows City and law enforcement to safely patrol grove for homeless encampments.
- Reduces fire risk due to fuel reduction.
- Lower unit cost per tree expected with immediate removal of larger number of all dead/dying trees.
- Expedites hazard removal and start of restoration.

Cons:

- Quick implementation period means limited review and public input.
- No comprehensive environmental review of tree removal and habitat restoration together at the outset.
- Will impact visitors to the aggregate locations for the 2017/18 Butterfly Season.

Option 2: Targeted Care. Same as Option 1, but retain 26 select trees with significant habitat value to key aggregation sites.

Pros:

- May provide some additional protection to remaining existing butterfly habitat.
- Reduced risks and impacts on healthy trees (spread of pests/insects, fire, falling trees and limbs).
- Potential for young trees to grow and for stump sprouting/re-growth sooner than with other options.
- Remove the immediate risk to the public of falling trees.
- Maximizes public access. Trails to be opened as soon as the immediate danger is eliminated.
- No fencing necessary.
- Hazard removal allows City and law enforcement to safely patrol grove for homeless encampments.
- Fire risk decreased due to the reduction in fuels.
- Lower cost per tree expected with immediate removal of most l dead/dying trees.
- Hazard addressed with restoration to follow.

Cons:

- Quick implementation period means limited review and public input.
- No comprehensive environmental review of tree removal and habitat restoration together at the outset.
- Will impact visitors to the aggregate locations for the 2017/18 Butterfly Season.
- More expensive than Option 1 with the targeted care for the 26 trees under the arborist care. Potential for significant additional costs related to second contractor mobilization to remove the 26 trees at a later date.

Option 3: Phased-tree removal starting with one canopy this year. Habitat Management Plan to follow.

Pros:

- Smaller initial tree removal area provides an opportunity to observe results and apply these to future removals.
- Council approval for each future project.
- Opportunity for additional public input.
- Comprehensive environmental review of majority of tree removal and habitat restoration at the outset.
- Allows the City to patrol portions of the grove where dead/dying trees are removed for homeless encampments.
- Lower initial project cost, but higher long-term costs.

Cons:

- Will impact visitors to the aggregation locations for the 2017/18 Butterfly Season and future seasons by limiting public access until the dead and dying trees in those areas are removed.
- Public access may be restricted for up to 5 years.
- Potential for more extensive damage to and/or loss of butterfly habitat, if dead and dying trees not removed soon.
- Loss of healthy trees from spread of pests and dead trees falling on healthy ones.
- Further tree decline from poor health.
- Fencing around certain groves will be necessary.
- Greater fire risk due to continued build-up of dry fuels and delay in removing dead/dying trees.
- Expected higher per-tree removal cost and therefore greater overall cost.
- Hazard largely not addressed; restoration deferred except for in removal area.
- City staff will not be able to safely patrol closed areas for homeless encampments.

Option 4: Removal of Trees Rated "0" Only

Pros:

- All trees rated 0 would be removed over the next 1-2 years, beginning immediately.
- Some growth of localized areas following removal of dead trees.
- Partial public access would be restored within 3-4 months.

Cons:

- Potential loss of healthy trees from spread of pests and dead trees falling on healthy ones.
- Full public access would be delayed indefinitely due to danger posted by remaining 1-rated trees.
- Presence of dying (1-rated) trees inhibits growth in other areas.
- City staff will not be able to safely patrol for homeless encampments.
- Increased fire risk due to build-up of dry fuels and failure to remove dying trees.
- Significant cost to fence around groves.
- Hazard largely not addressed; restoration deferred.
- Higher overall cost of tree removal.

Option 5: Removal After Habitat Management Plan Approval

Pros:

- Comprehensive plan development and environmental review.
- Opportunity for extensive public input.

Cons:

- Potential for more extensive damage to and/or loss of butterfly habitat, if dead and dying trees not removed soon.
- Potential loss of healthy trees from spread of pests and dead trees falling on healthy ones.
- Limited growth and regeneration due to fallen debris and shading.
- Full public access would be delayed up to 10 years due to danger posed by 0 and 1-rated trees.
- Increased fire risk due to build-up of dry fuels and failure to remove dead/dying trees.
- Expected higher per-tree removal cost and therefore greater overall cost.

**This information represents a simplified version of information provided in the September 5th staff report presented to Council.*