Client: City of Petaluma Department of Public Works
Project Location: Lucchesi Park, 320 N McDowell Blvd, Petaluma, CA
Inspection Date: July 17, 2024
Arborist: Ben Anderson

URBAN FORESTRY ASSOCIATES, INC.

Assignment

Josh Minshall, senior civil engineer with the City of Petaluma, asked me to meet him in Lucchesi Park, where the city plans to install a new skatepark. Prior to our meeting, he provided me with the 50% plans for review. My task was to assess the impact of the construction on the existing trees and document their condition.

Observations

Based on the site survey, two trees are in the footprint of the proposed skatepark. The first tree is a Modesto ash (*Fraxinus velutina* 'Modesto') with a trunk diameter of 29 inches. This tree is in fair health, with a sparse upper canopy and twig dieback. This is markedly different than the condition of the tree in 2023 when it was photographed for the Parks Tree Inventory. The second tree is a London plane tree (*Platanus* × *acerifolia*) with a trunk diameter of 15.5 inches. This tree suffers from an anthracnose infection in the canopy, common for American sycamore (*Platanus occidentalis*) and London plane trees in Petaluma. Despite the infection, the tree is in fair health overall. The main trunk exhibits a strong lean to the east, likely resulting from the prevailing winds in the area, a condition also seen in the adjacent London plane trees.

Another Modesto ash is slightly surface-rooted and in good health, with a trunk diameter of 30.5 inches. It is adjacent to the ash being removed. The edge of the proposed concrete is just over 7 feet from the tree's base. Beyond that is an east coast oak (c.f. *Quercus rubra*) in poor to fair condition. Additionally, a red ironbark eucalyptus (Eucalyptus sideroxylon) is in fair health, with a trunk diameter of 19 inches, about 18 feet from the edge of the proposed concrete. A second red ironbark has a trunk diameter of 13 inches and is about 30 feet from the excavation for the park but only about 17 from the path to the park.

Four other London plane trees grow on the berm between the proposed skate park and the existing soccer fields. These trees are all approximately 14 inches in diameter and in fair to good health. None of the trees near the skate park are native to Petaluma. London plane and Modesto ash are common species in Petaluma's urban forest. Red ironbark is much less common but also much less desirable, as it has a higher rate of branch failure, based on my experience.

A bioretention facility is proposed in an open, unused field northwest of the skate park. This area is also suitable for planting remediation trees. Petaluma Relief has planted many trees throughout the park, but there are still a few open areas where replacement trees could be planted. A red maple (Acer rubrum) off the corner of the Boys and Girls Club recently died, and this tree could be removed to make way for a new tree. The red maple directly adjacent to it also looks to be in advanced decline and will likely need to be replaced.

It was not shown on the provided plans, but a third tree will be removed near the parking lot to accommodate the new ADA parking spot. This is a 13-inch diameter deodar cedar (*Cedrus deodora*). The sidewalk will be replaced near a large coast redwood (*Sequoia sempervirens*) and another Modesto ash. This will likely require some additional root pruning. The ash and redwood are much larger than the cedar, which is heavily suppressed by the two larger trees.

Discussion and Conclusions

The construction of the skate park will impact the existing trees, but with proper planning and protection measures, these effects can be mitigated.

Along with the young cedar, the Modesto ash and London plane tree within the skate park footprint will be removed. Due to the two larger trees, the cedar removal will not be noticeable. For the Modesto ash on the south corner, all excavation should ideally stay at least 10 feet from the tree's base. While retaining the tree even without this modification is possible, the outcome will depend on the roots encountered during excavation. Keeping excavation outside this radius greatly increases the likelihood of retaining the tree in a healthy and stable condition.

For the other trees close to the construction area, heavy equipment is likely to drive over their roots. These trees should have tree protection fencing installed 15 feet away from their trunks. This fencing should be a minimum of 4-foot-high metal deer fencing labeled with tree protection signage. Ensuring this protection will help maintain the trees' health and stability.

The proposed bioretention facility in the northwest area offers an excellent opportunity to plant remediation trees. Planting trees in this area will help replace any trees lost due to the skate park construction. Replacing the recently deceased red maple and the adjacent declining red maple with healthy new trees will contribute to the park's overall health and aesthetics. All replacement trees should be planted inside the park. I recommend at least ten replacement trees (15 gallon).

In summary, careful planning and protective measures will help minimize the impact on the existing trees. Proper excavation limits and tree protection fencing are crucial for maintaining the health and stability of the trees in Lucchesi Park. The proposed bioretention facility presents an excellent opportunity for planting new trees, ensuring the park remains green and vibrant.

Recommendations

- Pre-Construction meeting: The project or city arborist should meet with the contractor before work commences to discuss tree protection.
- Tree Removal: Three trees will be removed: the large ash, the London plane, and the deodar cedar.
- Retain Modesto ash: Keep all excavation at least 10 feet from the tree's base to maintain health and stability. If this is not possible, know that the tree may need to be removed, but the contractor could work with the project or city arborist to try to retain it.
- Protect roots: Install tree protection fencing at least 15 feet away from the trunks of trees near the construction area (closer to the skatepark side of the ash above).
- Bioretention field: Use this area to plant remediation trees to replace those impacted by the skate park construction.
- Replace red maples: Remove the recently deceased red maple and the adjacent declining red maple and plant new trees in their place.
- Monitor excavation: Ensure heavy equipment operators are aware of tree protection measures and stop work if roots are encountered during excavation.

Inspection Schedule

Inspection of the site: Before Equipment and Materials Move In, Site Work, Demolition, and Tree Removal: The Project Arborist will meet with the General Contractor, Architect / Engineer, and Owner or their representative to review tree preservation measures, designate tree removals, delineate the location of tree protection / non-intrusion zone fencing, specify equipment access routes and materials storage areas, review the existing condition of trees and provide any necessary recommendations.

Inspection of the site: After installation of TPZ fencing, inspect the site for adequate tree preservation measures. Review any requests by the contractor for access, soil disturbance, or excavation areas within root zones of protected trees. Assess any changes in the health of trees since the last inspection.

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

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

ARBORIST'S CHECKLIST

- An urban forester, certified or consulting arborist shall establish the Tree Protection Zone (TPZ) before starting the demolition. Four-foot-high metal wire deer fencing will be erected by the contractor and inspected by the arborist to limit access to the TPZ. This will protect the trunk and root zone throughout construction.

- The Arborist shall have a pre-demolition meeting with the contractor or responsible party and all other supervisors or crew managers on site before any work to review all work procedures, access and haul routes, and tree protection. The contractor must notify the Arborist if roots are exposed or trunk or branches are wounded.

- For Any trunk and root crown that is not protected by a TPZ where heavy equipment operation is likely to wound the trunk, install a barrel stave-like trunk wrap out of 2 X 4 studs connected with metal straps, attached to the 2 X 4's with driver screws or one-inch nails.

- Storage of equipment shall be as far away from protected trees as possible and optimally on asphalt or ground protected by mulch/plywood.

- Heavy equipment use should be limited around trees and the roots. No equipment may be transported or used on the bare ground within the root zone. A 6-inch-deep layer of mulch and plywood must be placed under the path for access and egress. The protective "bridge' shall be maintained by the contractor and inspected by the arborist when on site.

- Any damage to trees due to demolition or construction activities shall be reported to the arborist within 6 hours so that remedial action can be taken. Any damage done to the trees violating the contract agreement shall be appraised as a casualty loss by the arborist and provided to the tree owner.

- All trenching within the TPZ shall be done pneumatically or by hand, careful not to damage any of the bark of any root encountered.

- An arborist shall inspect all grading, trenching, tunneling, or other excavation within the root zones of trees before backfilling.

- No chemicals or other waste materials shall be dumped within 20' of the base of any tree. There shall be no material storage in the TPZ.

- Pier and at-grade beam foundation construction should be used around the tree to avoid root damage. The top 3' of any pier within approximately 10 feet of an existing tree shall be pneumatically excavated or hand-dug and inspected by the arborist before drilling for piers to avoid major roots. Any minor roots (less than approximately two inches) encountered within this zone can be cut cleanly with a saw after excavation.

- Any tree pruning will be done by ISA standards. The arborist will inspect all pruning.

- The arborist must perform a final inspection to ensure no unmitigated damage and specify any pest, disease, or other health care. The arborist shall specify and oversee any necessary restorative actions.

- Any suspected omissions or conflicts between various plan elements shall be brought to the attention of the arborist and resolved before proceeding with the work.

SCOPE OF WORK AND LIMITATIONS

Urban Forestry Associates has no personal or monetary interest in the outcome of this investigation. All observations regarding trees in this report were made by UFA independently, based on our education and experience. All determinations of the health condition, structural condition, or hazard potential of a tree or trees at issue are based on our best professional judgment. The health and hazard assessments in this report are limited by the visual nature of the assessment. Arborists cannot detect every condition that could lead to a tree's structural failure. Since trees are living organisms, conditions are often hidden within the tree and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specific period of time. Likewise, remedial treatments cannot be guaranteed. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk, and the only way to eliminate all risks associated with trees is to eliminate all trees.

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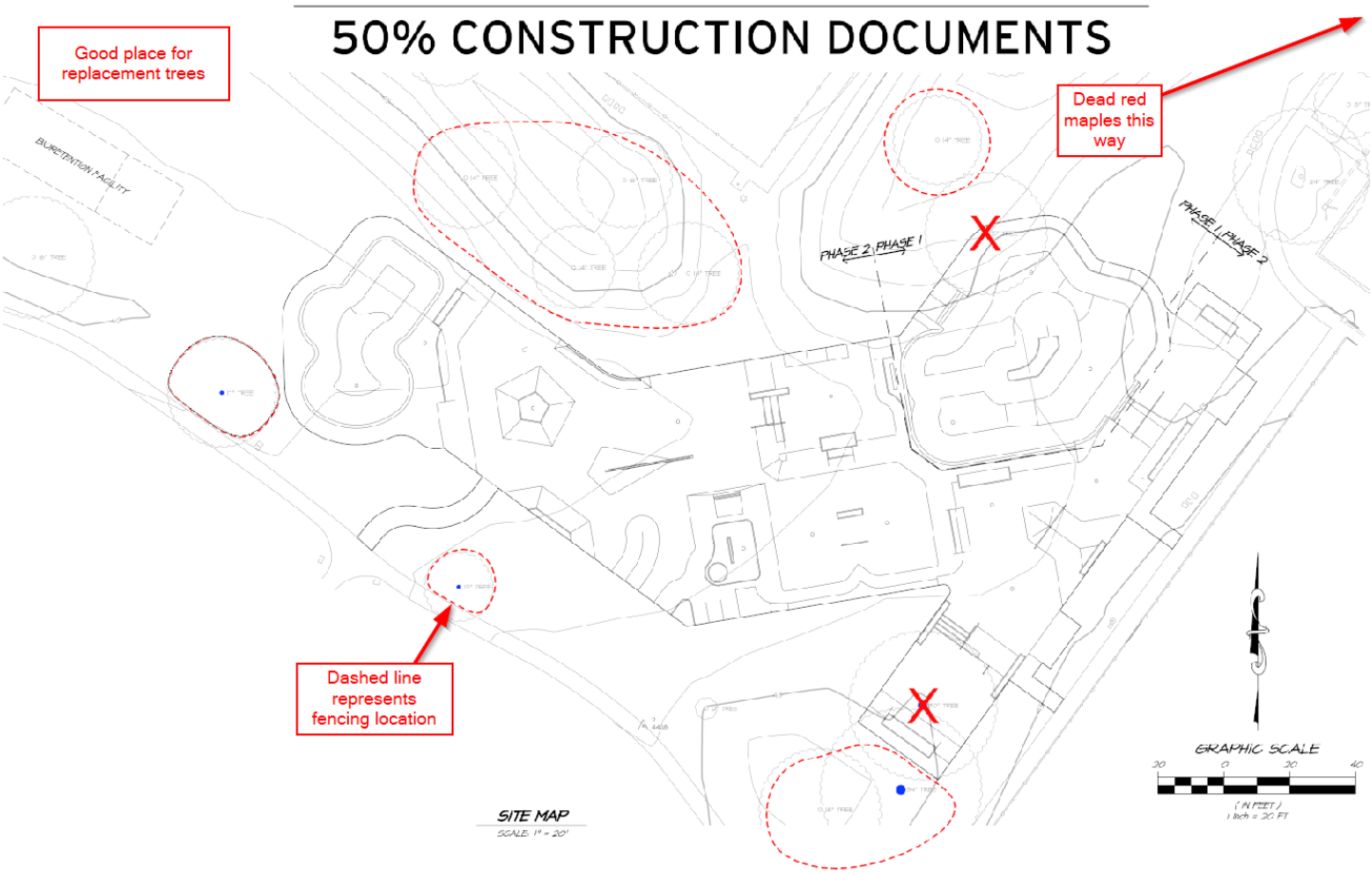
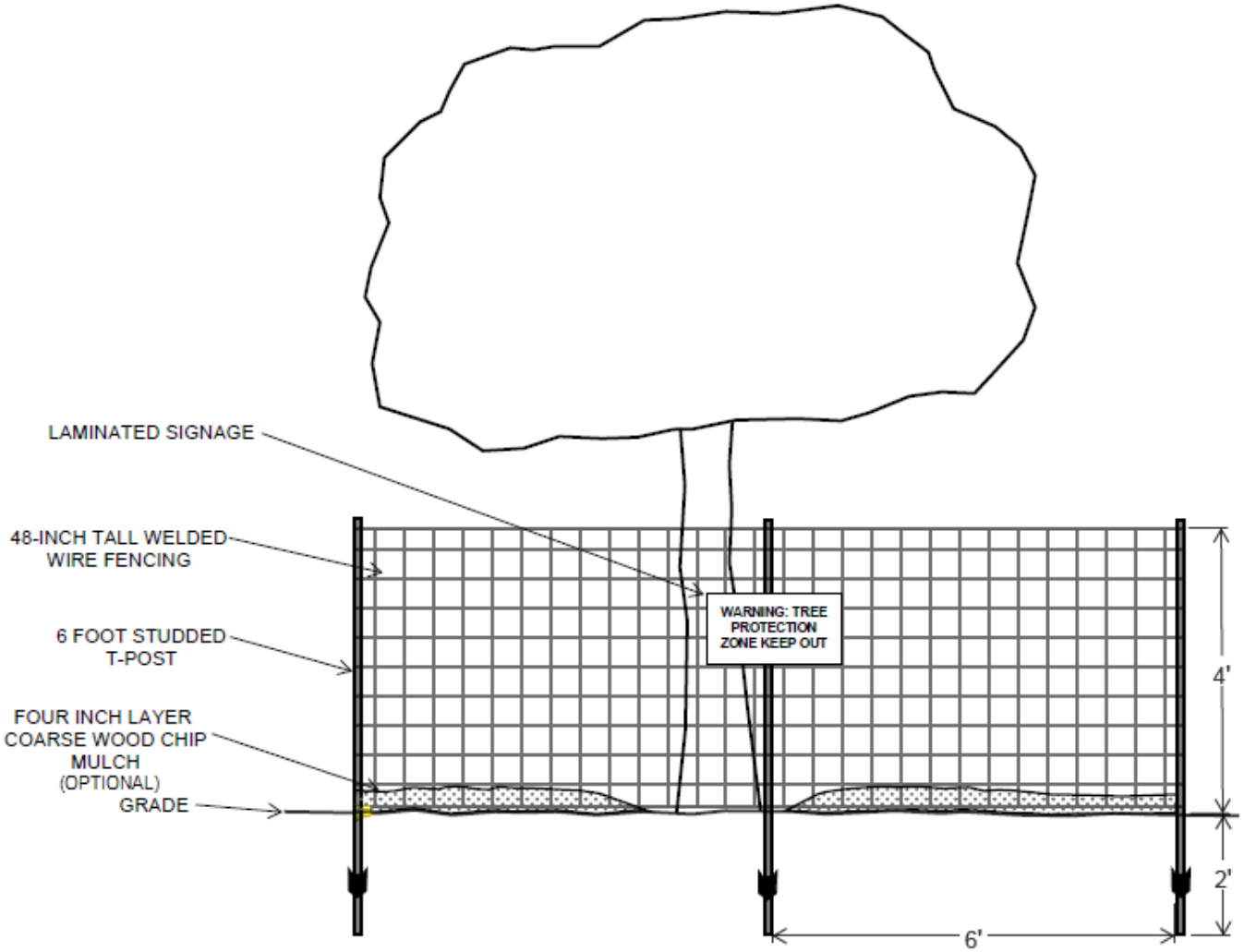


Figure 1. Map showing tree and fencing locations.



TREE PROTECTION FENCING

1. Four foot tall welded wire fencing shall be used to create the Tree Protection Zone (TPZ) as shown on the Arborist's Map. Orange Plastic construction fencing may be placed on the outside of the wire fencing but is not a substitute for the wire fencing.
2. Fencing shall be supported by six foot tall studded metal t-posts installed six feet on center.
3. Material storage is not permitted within the TPZ.
4. Laminated signs shall be attached to fencing and read "Warning: Tree Protection Zone Keep Out" in English and Spanish. Signs shall be kept visible throughout the project. Failure to comply with the tree protection plan may result in a Stop Work order.

Figure 2. Specifications for fencing.

Figure 3. Ash to be removed. The canopy is noticeably sparser than it was in 2023.

Figure 4. London plane to be removed.

Figure 5. Ash to hopefully stay, ideally increasing the clearance from excavation by several feet.