

MEMORANDUM

To: Mandi Misasi, Brookfield Properties

From: Scott Yarger, WRA, Inc.
ISA-Certified Arborist #WE-9300A

cc: Trece Herder, Brookfield Properties

Date: February 29, 2024

Subject: Oyster Cove Surcharge Plan Tree Protection and Preservation Measures

Purpose

The purpose of this memorandum is to provide specific tree protection measures to address potential impacts to protected trees during the demolition, surcharge and site leveling phase of the Oyster Cove Mixed Use Development Project (Project). This memorandum is provided in direct response to the request by the City of Petaluma Community Development Department for tree protection measures to protect trees during the demolition, surcharge and site leveling phase of the Project.

WRA ISA-Certified Arborist, Scott Yarger conducted a comprehensive tree survey within the site in 2022, and updated the survey in February 2024 in preparation of an updated Arborist Report and Tree Protection and Preservation Plan (Plan), which is forthcoming. The Plan will address tree removals, replacement mitigation requirements, and tree protection measures for the full site development. This memorandum is intended as a supplement to the forthcoming Plan and solely addresses anticipated tree removal impacts, and recommended tree protection measures for the Oyster Cover Demolition, Surcharge, and Site Leveling Plans (CBG Civil Engineering 2024).

Summary of Tree Impacts

The demolition, surcharge, and site leveling phase of construction will predominantly impact the parcels south of Copeland Street (Assessor's Parcel Numbers [APNs]: 007-700-003, and -006). The parcel north of Copeland Street (APN 007-005) will undergo limited soil excavation during this phase, and that work will not impact any trees as all trees within that parcel are protected by the existing perimeter fence; no trees are located in the soil excavation areas or within the immediate vicinity of planned soil excavation;. Site work on the parcels south of Copeland Street will remove 14 trees, of which eight (8) will require tree removal permits due to their location on City property in the right-of-way along D Street, or just outside of the private parcels along Petaluma River Park. A summary table including all trees within the vicinity of disturbance during the surcharge phase is included in Attachment A. The summary table shows tree protection zones for trees being preserved during the surcharge phase, tree removals, and replacement mitigation required. Five of the trees being preserved during the demolition, surcharge and site leveling phase are planned for future removal (trees #4, 5, 6, 12, and 100) during full site development. The

corresponding tree protection fencing and tree removals are shown on the Oyster Cove Demolition, Surcharge, and Site Leveling Plans (CBG Civil Engineering 2024), included in Attachment B.

Recommended Tree Protection Measures

The following tree protection measures are provided for the Oyster Cove Mixed Use Development Project full site development, and shall apply to the demolition, surcharge and site leveling phase of construction. In order to avoid and minimize damage to existing trees, which are designated for preservation and not proposed for direct impacts by project activities, the following measures are recommended, before, during, and after construction. These practices will utilize multiple tree protection measures, i.e. restricted ground disturbance work within tree driplines and/or TPZs, implement pruning best practices, reduce relative compaction rates, avoid unnecessary soil disturbance, and adopt a tree health monitoring plan. These measures are intended to comply with the Petaluma Tree Technical Manual (City of Petaluma 2021).

Pre-construction Worker Awareness and Tree Protection Zone Establishment

Contractor and all of its subcontractors shall be briefed by the Project Foreman or Project Arborist on the contents of this Plan and adhere to all tree protection recommendations within this Tree Protection Plan. A Tree Protection Zone (TPZ) equal to the dripline radius plus 1 foot shall be the standard TPZ in which ground disturbance shall be limited to the maximum extent feasible.

Tree Protection Fencing

Temporary protective fencing shall be installed around the TPZ of each tree designated for preservation prior to commencement of any construction activity conducted within 25' of the TPZ, of a tree designated for preservation. Tree fencing shall follow the fencing requirements of the Petaluma Tree Technical Manual (Section 3.10 and 4.10) which calls for 5-6 foot high chain link fences mounted on two-inch diameter galvanized iron posts, driven into the ground to a depth of a least 2-feet. The fencing shall be installed to enclose the perimeter of the TPZ (dripline radius plus 1 foot) to the maximum extent feasible.

However, the majority of existing trees to be preserved during the demolition, surcharge and site leveling phase of construction are situated in narrow planting strips between fence lines and sidewalks, where pre-construction fence installation around the dripline perimeter is infeasible. In those cases, the Tree Technical Manual (City of Petaluma 2021) calls for alternative "Type II" or "Type III" fencing. Type II fencing entails installing protection fencing at the maximum extent of the TPZ feasible given the constraining area of a planting strip or proximity to developed features which will not be replaced. Type III fencing applies to small tree well or sidewalk planter pit trees, in very limited spaces. Those trees shall be wrapped with high visibility temporary fencing (i.e. orange construction fencing) around the tree trunk to signify the tree is to be saved and to alert machine operators to avoid damaging the tree. Extreme caution shall be taken to avoid mechanical injury to tree trunks, scaffold branches and root flares. As soon as required work is complete within the TPZ, temporary protective fencing shall be installed around the TPZ and shall remain in place as long as ground disturbance activities are taking place.

For all other trees selected for preservation, temporary protective fencing shall be placed around the TPZ or the edge of the construction zone if the construction zone encroaches into the TPZ. Heavy equipment

use, excavation, fill, grading, trenching, drainage changes or other soil disturbance shall be limited within the TPZ. Material storage, vehicle parking, and trash disposal shall not occur within the TPZ.

Initial Demolition and Access within TPZ

Work within the TPZ of all trees selected for preservation shall be restricted to the maximum extent feasible. Heavy machinery shall avoid driving through TPZs as much as possible. Ingress/egress routes for structure demolition shall be situated as far of a distance from preserved tree TPZs as possible.

Building and other hardscape removal within the TPZ of preserved trees shall be conducted in the least injurious method possible, and should consider using hand tools where feasible. Buildings and hardscapes to be removed shall be felled or pulled safely away from existing trees to be preserved in order to avoid incidental contact with preserved trees.

Tree and Brush Removal/Site Clearing

All trees requiring removal shall be felled away from preserved trees. Removal of protected or regulated trees per the City of Petaluma Tree Ordinance shall require a removal permit. All brush removal within the TPZ of preserved trees should be performed with hand equipment (e.g. weed-whacker or chainsaw). Brush and wood chips generated from tree removals may be used on-site, and placed within TPZs to a maximum depth of six inches. However, brush and wood chips generated from trees in marginal or poor health should not be used within TPZs to prevent the spread of pathogens.

Construction Traffic, and Materials Staging

After initial demolition within the TPZs or tree driplines, heavy machinery access into those areas shall not be allowed to the maximum extent feasible. Construction materials and heavy machinery shall be properly staged away from existing trees to avoid spillage or damage to trees. If temporary equipment access is required within TPZs or tree driplines prior to final grading, a six-inch layer of clean bark should be placed in those areas requiring access.

Site Grading, Trenching and Root Pruning

Work within the TPZ will not include grading or trenching to the maximum extent feasible. Concrete removal within the TPZ may be done via light machinery, but any other excavation and soil disturbance shall be done by hand. Grading and soil compacting shall be restricted within the TPZ. If any significant roots (2 inch diameter or greater) are uncovered within the TPZ they shall be kept moist at all times with use of damp burlap fabric. Outside of the TPZ, excavation, grading, and compaction is allowed, but shall be done to the minimum extent feasible to achieve desired specifications. If any roots greater than 2 inch diameter require pruning, they shall be cleanly cut perpendicular to the axis using a sharp handsaw. Never rip or tear roots - clean cuts will encourage root regeneration. No roots over four (4) inches in diameter will be severed where ground disturbance is required and allowed to the maximum extent feasible. If roots over four (4) inches in diameter are encountered, the location the ground disturbance will be adjusted to avoid root damage, or the tree may require removal.

Trenching within the TPZ of a preserved tree shall be avoided to the maximum extent feasible. Where trenching within the TPZ of a tree selected for preservation is unavoidable, the Project Arborist shall be

informed and a determination shall be made whether the tree can be saved or not. If possible, where underground utilities cross a preserved tree TPZ, they should be removed by other methods, or capped and abandoned in place rather than trenched, to avoid root disturbance.

Arborist Supervision and Pruning Specifications

All necessary tree work should be performed by an ISA-Certified Arborist or comparable tree specialist. Improper pruning can be harmful to health and structure of trees. No tree pruning will be permitted unless approved by a Certified Arborist. Any pruning of existing trees shall be performed by a licensed tree care professional and shall comply with the ANSI A300 standards and International Society of Arboriculture (ISA) Best Management Practices for Tree Pruning. All tree pruning tools must be cleaned prior to and after use. All branches being removed shall be cut to, but not beyond, the branch collar. All pruning shall be done in a way that maintains the balance and structure of the tree. Additional specific pruning prescriptions may be recommended prior to construction, as determined by a Certified Arborist.

Drainage, Irrigation, and Fills within TPZ

Site drainage should be designed to create positive drainage away from the trunk of preserved trees, and to prevent ponding within the TPZ. Supplemental irrigation of 1 to 2 inches monthly, may be necessary within the TPZ of preserved trees during construction within the dry season.

Monitoring and Tree Damage Mitigation

Periodic tree health monitoring before, during and after construction is a useful method of documenting tree response to construction. Monitoring before construction has been conducted in February 2024 during the updated tree survey and Plan development. Periodic monitoring during construction is recommended to ensure that tree protection guidelines are followed by construction crews, and post-construction monitoring is recommended to document any changes in tree health and inform decisions for remedial actions, if necessary. Monitoring should be carried out by an ISA-Certified Arborist with experience in tree health assessment and remediation. Any trees damaged during construction shall be evaluated by the Certified Arborist.

Feel free to contact me with any questions or concerns.

Sincerely yours,



Scott Yarger
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Attachment A. Tree Survey Table - Oyster Cove Mixed Use Development Project, Demolition, Surcharge, and Site Leveling Phase, Petaluma, California, February 2024

Tree ID	Common Name	Species Name	Multi-trunk	DBH_1	DBH_2	DBH_3	DBH_4	DBH_5	Total DBH (in)	Estimated Dripline Radius (ft)	Estimated Height (ft)	Tree Protection Zone (TPZ)	Health	Structure	Ordinance Status	Removal	Permit	Replacment Ratio (inches removed to inches replaced)	Tree replacment (inches)	Notes
1	California black walnut	<i>Juglans hindsii</i>	no	22.0	0.0	0.0	0.0	0.0	22.0	15	20	N/A	Fair (3)	Fair (3)	Non-protected	Yes	No	N/A	0	minor decay/dieback
2	Weeping willow	<i>Salix babylonica</i>	no	19.5	0.0	0.0	0.0	0.0	19.5	15	22	N/A	Marginal (2)	Marginal (2)	Non-protected	Yes	No	N/A	0	significant crown dieback
3	Weeping willow	<i>Salix babylonica</i>	no	4.0	0.0	0.0	0.0	0.0	4.0	2	12	N/A	Marginal (2)	Marginal (2)	Non-protected	Yes	No	N/A	0	significant crown dieback
4	Red oak	<i>Quercus rubra</i>	no	9.2	0.0	0.0	0.0	0.0	9.2	10	18	11	Good (4)	Good (4)	Protected - City Tree	Future Removal	Yes	nunuu	9.2	young tree; good vigor
5	Red oak	<i>Quercus rubra</i>	no	4.0	0.0	0.0	0.0	0.0	4.0	4	10	5	Fair (3)	Good (4)	Protected - City Tree	Future Removal	Yes	1 to 1	4.0	young tree; fair vigor
6	Red oak	<i>Quercus rubra</i>	no	9.0	0.0	0.0	0.0	0.0	9.0	6	15	7	Good (4)	Good (4)	Protected - City Tree	Future Removal	Yes	1 to 1	9.0	young tree; good vigor
7	Weeping willow	<i>Salix babylonica</i>	yes	7.5	10.0	0.0	0.0	0.0	17.5	6	12	N/A	Marginal (2)	Marginal (2)	Protected - City Tree	Yes	Yes	2 to 1	8.75	significant crown dieback
8	Red oak	<i>Quercus rubra</i>	no	9.5	0.0	0.0	0.0	0.0	9.5	10	15	N/A	Good (4)	Good (4)	Protected - City Tree	Yes	Yes	1 to 1	9.5	young tree; good vigor
9	Evergreen ash	<i>Fraxinus uhdei</i>	yes	10.5	3.5	1.5	1.5	0.0	17.0	12	15	N/A	Fair (3)	Marginal (2)	Protected - City Tree	Yes	Yes	2 to 1	8.5	suppressed, poor growth form; significant dieback
10	Evergreen ash	<i>Fraxinus uhdei</i>	yes	6.0	5.0	4.5	3.0	3.0	21.5	10	18	N/A	Fair (3)	Marginal (2)	Protected - City Tree	Yes	Yes	2 to 1	10.75	suppressed, poor growth form; significant dieback
11	Cherry	<i>Prunus sp.</i>	yes	10.0	9.0	8.0	7.0	7.0	41.0	15	20	N/A	Good (4)	Fair (3)	Non-protected	Yes	No	N/A	0	good leaf color and vigor
12	Olive	<i>Olea europaea</i>	no	8.0	0.0	0.0	0.0	0.0	8.0	9	15	10	Fair (3)	Fair (3)	Protected - City Tree	Future Removal	Yes	1 to 1	8.0	poor location; suppressed
13	Weeping willow	<i>Salix babylonica</i>	no	36.0	0.0	0.0	0.0	0.0	36.0	25	30	26	Marginal (2)	Fair (3)	Non-protected	No	No	N/A	0	major decay/dieback, poor location
14	Pittosporum	<i>Pittosporum sp.</i>	yes	5.0	5.0	0.0	0.0	0.0	10.0	10	20	11	Fair (3)	Marginal (2)	Non-protected	No	No	N/A	0	volunteer tree; poor location
15	Pittosporum	<i>Pittosporum sp.</i>	yes	5.0	5.0	0.0	0.0	0.0	10.0	10	20	11	Fair (3)	Marginal (2)	Non-protected	No	No	N/A	0	volunteer tree; poor location
16	Pittosporum	<i>Pittosporum sp.</i>	no	5.0	0.0	0.0	0.0	0.0	5.0	10	20	N/A	Fair (3)	Marginal (2)	Non-protected	Yes	No	N/A	0	volunteer tree; poor location
17	Pittosporum	<i>Pittosporum sp.</i>	no	5.0	0.0	0.0	0.0	0.0	5.0	10	20	N/A	Fair (3)	Marginal (2)	Non-protected	Yes	No	N/A	0	volunteer tree; poor location
18	Red oak	<i>Quercus rubra</i>	no	6.4	0.0	0.0	0.0	0.0	6.4	10	15	N/A	Fair (3)	Fair (3)	Protected - City Tree	Yes	Yes	1 to 1	6.4	young tree; fair vigor
19	London plane	<i>Platanus x acerifolia</i>	no	9.2	0.0	0.0	0.0	0.0	9.2	12	20	N/A	Fair (3)	Fair (3)	Protected - City Tree	Yes	Yes	1 to 1	9.2	fair vigor and growth form
24	London plane	<i>Platanus x acerifolia</i>	no	8.5	0.0	0.0	0.0	0.0	8.5	15	25	N/A	Fair (3)	Fair (3)	Protected - City Tree	Yes	Yes	1 to 1	8.5	fair vigor and growth form
61	Evergreen ash	<i>Fraxinus uhdei</i>	no	5.5	0	0	0	0	5.5	4	12	N/A	Fair (3)	Marginal (2)	Protected - City Tree	Yes	Yes	2 to 1	2.75	fair vigor; marginal growth form
100	Cork oak	<i>Quercus suber</i>	no	7	0	0	0	0	7	6	12	7	Good (4)	Good (4)	Protected - City Tree	Future Removal	Yes	1 to 1	7.0	good vigor and growth form