APPENDIX A. Establishing Tree Canopy Goals

Implementation:
Management Policy: Action 1E.2, Action 1D.1, Action 1D.10, Action 1F.11
Funding and Authority: Action 3D.7
Inventories and Plans: Action 4C.4, Action 4C.8, Action 4D.10
Community Engagement: Action 6D.5, Action 6A.10

The following information summarizes the recommended approaches to achieve Tacoma’s tree canopy goals.

Table 1. Assumptions and outcomes of canopy goal and tree planting targets

<table>
<thead>
<tr>
<th>Category</th>
<th>Assumption/Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tacoma Land Acres</td>
<td>31,607 acres</td>
</tr>
<tr>
<td>Existing Tree Canopy</td>
<td>20%</td>
</tr>
<tr>
<td>Canopy Goal</td>
<td>30%</td>
</tr>
<tr>
<td>Timeframe</td>
<td>10-year goal</td>
</tr>
<tr>
<td>Number of Trees</td>
<td>104,264 or 10,426 trees per year</td>
</tr>
<tr>
<td>Tree Size at Maturity</td>
<td>Large tree at maturity with a 41-foot canopy spread                        (USFS PNW Community Tree Guide)</td>
</tr>
<tr>
<td></td>
<td>▪ 1,320.5 ft²</td>
</tr>
<tr>
<td>Tree Mortality</td>
<td>No mortality</td>
</tr>
<tr>
<td>Tree Replacement</td>
<td>No-net-loss</td>
</tr>
<tr>
<td>Estimated Benefits of Future Trees</td>
<td>358,875,333 gallons of stormwater runoff prevented</td>
</tr>
<tr>
<td></td>
<td>▪ $2,871,420 stormwater savings</td>
</tr>
<tr>
<td></td>
<td>▪ 53,038,896 pounds of carbon sequestered</td>
</tr>
<tr>
<td></td>
<td>▪ 9,279,461 kilowatt hours saved</td>
</tr>
<tr>
<td></td>
<td>▪ $1,300,167 energy savings</td>
</tr>
<tr>
<td></td>
<td>▪ 320,714,853 kBtu in natural gas reductions</td>
</tr>
<tr>
<td></td>
<td>▪ $4,747,122 in natural gas savings</td>
</tr>
<tr>
<td></td>
<td>▪ $8,918,709 Total Benefits</td>
</tr>
</tbody>
</table>

Based on the total land area of Tacoma, the 30% tree canopy goal, and the recommendation to plant large-statured trees when possible, a total of 104,264 trees are needed over a 10-year timeframe. This assumes the City establishes a no-net-loss policy—replacing trees that are removed—and proper post-planting care and routine maintenance is conducted. If the City achieves this target of 30% tree canopy, it is estimated that these new trees would provide nearly $9 million in additional annual benefits at maturity.
Table 2. Recommended tree canopy cover goals by NBD using the 2009/2011 assessment.

<table>
<thead>
<tr>
<th>Neighborhood Business District (NBD)</th>
<th>Percentage of Right-of-Way (ROW) in NBD</th>
<th>Actual NBD Cover</th>
<th>NBD Cover Needed</th>
<th>Actual NBD ROW Cover</th>
<th>NBD ROW Cover Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Avenue</td>
<td>42.2%</td>
<td>2.4%</td>
<td>12.6%</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>South Tacoma</td>
<td>39.7%</td>
<td>0%</td>
<td>15%</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>Stadium</td>
<td>49.6%</td>
<td>4.9%</td>
<td>10.1%</td>
<td>4.5%</td>
<td>25.5%</td>
</tr>
<tr>
<td>6th Ave</td>
<td>41.3%</td>
<td>2.1%</td>
<td>12.9%</td>
<td>2.3%</td>
<td>27.7%</td>
</tr>
<tr>
<td>Proctor</td>
<td>41.2%</td>
<td>4%</td>
<td>11%</td>
<td>7.3%</td>
<td>22.7%</td>
</tr>
<tr>
<td>Oakland/Madrona</td>
<td>41.3%</td>
<td>7.1%</td>
<td>7.9%</td>
<td>0.2%</td>
<td>29.8%</td>
</tr>
<tr>
<td>Fern Hill</td>
<td>34.4%</td>
<td>7.3%</td>
<td>7.7%</td>
<td>2.8%</td>
<td>27.2%</td>
</tr>
<tr>
<td>Lincoln</td>
<td>37.7%</td>
<td>0%</td>
<td>15%</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>McKinley</td>
<td>48.1%</td>
<td>1.1%</td>
<td>13.9%</td>
<td>1.2%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Narrows</td>
<td>43.9%</td>
<td>3.3%</td>
<td>11.7%</td>
<td>2.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Dome</td>
<td>36.1%</td>
<td>1.9%</td>
<td>13.1%</td>
<td>1.8%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Hilltop</td>
<td>43%</td>
<td>0.9%</td>
<td>14.1%</td>
<td>1.1%</td>
<td>28.9%</td>
</tr>
<tr>
<td>Ruston/Point Defiance</td>
<td>41.2%</td>
<td>2.6%</td>
<td>12.4%</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>Old Town</td>
<td>44.8%</td>
<td>2.8%</td>
<td>12.2%</td>
<td>1.2%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Pacific</td>
<td>40.7%</td>
<td>3.4%</td>
<td>11.6%</td>
<td>0.9%</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

Table 3. Updated canopy cover and goals by land use using the 2018 tree canopy analysis

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Land Area (Acres)</th>
<th>Actual Tree Cover %</th>
<th>Vegetative Planting Area %</th>
<th>Goal Cover</th>
<th># of Trees by 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossroads Mixed-Use Center</td>
<td>642</td>
<td>12%</td>
<td>9%</td>
<td>15%</td>
<td>635</td>
</tr>
<tr>
<td>Downtown Reg’l Growth Center</td>
<td>978</td>
<td>7%</td>
<td>6%</td>
<td>10%</td>
<td>968</td>
</tr>
<tr>
<td>General Commercial</td>
<td>817</td>
<td>7%</td>
<td>6%</td>
<td>10%</td>
<td>809</td>
</tr>
<tr>
<td>Heavy Industrial</td>
<td>4,002</td>
<td>4%</td>
<td>6%</td>
<td>6%</td>
<td>2,640</td>
</tr>
<tr>
<td>Light Industrial</td>
<td>538</td>
<td>6%</td>
<td>7%</td>
<td>10%</td>
<td>710</td>
</tr>
<tr>
<td>Major Institutional Campus</td>
<td>626</td>
<td>10%</td>
<td>11%</td>
<td>15%</td>
<td>1,033</td>
</tr>
<tr>
<td>Multi-Family (High Density)</td>
<td>389</td>
<td>14%</td>
<td>14%</td>
<td>20%</td>
<td>770</td>
</tr>
<tr>
<td>Multi-Family (Low Density)</td>
<td>1,478</td>
<td>15%</td>
<td>12%</td>
<td>20%</td>
<td>2,438</td>
</tr>
<tr>
<td>Neighborhood Commercial</td>
<td>597</td>
<td>10%</td>
<td>7%</td>
<td>15%</td>
<td>985</td>
</tr>
<tr>
<td>Neighborhood Mixed-Use Center</td>
<td>386</td>
<td>9%</td>
<td>6%</td>
<td>12%</td>
<td>382</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>4,965</td>
<td>56%</td>
<td>16%</td>
<td>70%</td>
<td>22,930</td>
</tr>
<tr>
<td>Shoreline</td>
<td>1,014</td>
<td>21%</td>
<td>11%</td>
<td>28%</td>
<td>2,341</td>
</tr>
<tr>
<td>Single Family Residential</td>
<td>14,496</td>
<td>17%</td>
<td>16%</td>
<td>30%</td>
<td>62,164</td>
</tr>
<tr>
<td>Tacoma Mall Reg’l Growth Center</td>
<td>483</td>
<td>10%</td>
<td>7%</td>
<td>15%</td>
<td>797</td>
</tr>
</tbody>
</table>

**TOTAL TREES** 99,602

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Land Area (Acres)</th>
<th>Actual Tree Cover %</th>
<th>Vegetative Planting Area %</th>
<th>Goal Cover</th>
<th># of Trees by 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trees to Achieve Land Use Canopy Goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>104,264</td>
</tr>
<tr>
<td>Remaining Trees Needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,662</td>
</tr>
</tbody>
</table>

Assumption: Existing tree canopy growth to account for difference
Figure 1. 2018 tree canopy cover

Urban Tree Canopy
Councilmanic Districts

0 0.5 1 2
Miles
Figure 2. 2018 land use classifications

- Crossroads Mixed-Use Center
- Downtown Regional Growth Center
- General Commercial
- Heavy Industrial
- Light Industrial
- Major Institutional Campus
- Multi-Family (High Density)
- Multi-Family (Low Density)
- Single Family Residential
- Neighborhood Commercial
- Neighborhood Mixed-Use Center
- Parks and Open Space
- Shoreline
- Tacoma Mall Regional Growth Center
Figure 3. Tree canopy cover of Census Block Groups with less than half the median Washington household income

Median household income in Washington is $70,979

Urban Tree Canopy (UTC) %
- 2-10%
- 10-15%
- 15-19%
- 19-48%
Table 4. Tree canopy metrics and suggested goals for Census Block Groups with less than half the median WA household income of $70,979

<table>
<thead>
<tr>
<th>CBG ID</th>
<th>Area (ac)</th>
<th>Actual Tree Cover %</th>
<th>Vegetative Planting Area %</th>
<th>Goal Cover</th>
<th># of Trees by 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>71704</td>
<td>0.6</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
<td>0</td>
</tr>
<tr>
<td>61601</td>
<td>188.0</td>
<td>6%</td>
<td>4%</td>
<td>8%</td>
<td>124</td>
</tr>
<tr>
<td>61400</td>
<td>63.7</td>
<td>7%</td>
<td>5%</td>
<td>10%</td>
<td>63</td>
</tr>
<tr>
<td>63501</td>
<td>112.6</td>
<td>8%</td>
<td>8%</td>
<td>12%</td>
<td>149</td>
</tr>
<tr>
<td>61002</td>
<td>214.1</td>
<td>8%</td>
<td>7%</td>
<td>12%</td>
<td>283</td>
</tr>
<tr>
<td>71703</td>
<td>77.3</td>
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<td>9%</td>
<td>15%</td>
<td>127</td>
</tr>
<tr>
<td>61400</td>
<td>114.5</td>
<td>10%</td>
<td>8%</td>
<td>15%</td>
<td>189</td>
</tr>
<tr>
<td>71705</td>
<td>14.3</td>
<td>10%</td>
<td>4%</td>
<td>12%</td>
<td>9</td>
</tr>
<tr>
<td>63400</td>
<td>119.5</td>
<td>11%</td>
<td>10%</td>
<td>15%</td>
<td>158</td>
</tr>
<tr>
<td>61800</td>
<td>68.3</td>
<td>12%</td>
<td>12%</td>
<td>20%</td>
<td>180</td>
</tr>
<tr>
<td>60904</td>
<td>100.2</td>
<td>13%</td>
<td>9%</td>
<td>18%</td>
<td>165</td>
</tr>
<tr>
<td>61400</td>
<td>50.6</td>
<td>14%</td>
<td>9%</td>
<td>18%</td>
<td>67</td>
</tr>
<tr>
<td>61300</td>
<td>60.0</td>
<td>14%</td>
<td>13%</td>
<td>20%</td>
<td>119</td>
</tr>
<tr>
<td>62400</td>
<td>77.2</td>
<td>15%</td>
<td>13%</td>
<td>20%</td>
<td>127</td>
</tr>
<tr>
<td>60905</td>
<td>114.0</td>
<td>15%</td>
<td>10%</td>
<td>20%</td>
<td>188</td>
</tr>
<tr>
<td>61002</td>
<td>157.7</td>
<td>16%</td>
<td>13%</td>
<td>20%</td>
<td>208</td>
</tr>
<tr>
<td>62801</td>
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<td>16%</td>
<td>12%</td>
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<td>220</td>
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<tr>
<td>61300</td>
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<td>16%</td>
<td>12%</td>
<td>20%</td>
<td>78</td>
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<tr>
<td>62300</td>
<td>164.1</td>
<td>17%</td>
<td>20%</td>
<td>22%</td>
<td>271</td>
</tr>
<tr>
<td>62400</td>
<td>105.3</td>
<td>17%</td>
<td>17%</td>
<td>25%</td>
<td>278</td>
</tr>
<tr>
<td>60904</td>
<td>137.2</td>
<td>18%</td>
<td>14%</td>
<td>22%</td>
<td>181</td>
</tr>
<tr>
<td>62801</td>
<td>166.7</td>
<td>19%</td>
<td>11%</td>
<td>25%</td>
<td>330</td>
</tr>
<tr>
<td>940007</td>
<td>145.1</td>
<td>19%</td>
<td>16%</td>
<td>25%</td>
<td>287</td>
</tr>
<tr>
<td>61900</td>
<td>108.9</td>
<td>21%</td>
<td>11%</td>
<td>26%</td>
<td>180</td>
</tr>
<tr>
<td>72312</td>
<td>55.5</td>
<td>24%</td>
<td>11%</td>
<td>30%</td>
<td>110</td>
</tr>
<tr>
<td>61100</td>
<td>392.2</td>
<td>29%</td>
<td>13%</td>
<td>35%</td>
<td>776</td>
</tr>
<tr>
<td>71703</td>
<td>12.8</td>
<td>29%</td>
<td>15%</td>
<td>35%</td>
<td>25</td>
</tr>
<tr>
<td>62900</td>
<td>145.4</td>
<td>32%</td>
<td>21%</td>
<td>40%</td>
<td>384</td>
</tr>
<tr>
<td>940006</td>
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<td>39%</td>
<td>14%</td>
<td>45%</td>
<td>197</td>
</tr>
<tr>
<td>940006</td>
<td>349.8</td>
<td>48%</td>
<td>16%</td>
<td>55%</td>
<td>808</td>
</tr>
</tbody>
</table>

**Total Trees**: 6,281

**Assumptions/Outcomes**

- **Tacoma Land Acres**: 31,607 acres
- **Existing Tree Canopy**: 20%
- **Canopy Goal**: 30%
- **Timeframe**: 10-year goal
- **Total Number of Trees**: 104,264 or 10,426 trees per year

**Tree Size at Maturity**

- Large tree at maturity with a 41-foot canopy spread (USFS PNW Community Tree Guide)
- 1,320.5 ft²

**Tree Mortality**

- No mortality

**Tree Replacement**

- No-net-loss
Figure 4. Census Block Groups with less than the Citywide tree cover of 20% (139 CBGs)

139 Census Block Groups have less than 20% tree canopy cover
Figure 5. Tree planting priority areas based on canopy cover and demographic data.

Communities of Color and Income Weighted Scale

- 2 - 3
- 4 - 6
- 7 - 8
- 9
- 10

Percent 2009 Tree Cover by Block Group

- 2.9% - 15.4%
- 15.5% - 26.0%
- 26.1% - 41.2%
- 41.3% - 66.1%
- 66.2% - 97.6%

Original Map Created By: Community & Economic Development Department GIS Analysis & Data Services, 2016
**Unimproved Right-of-Way Canopy Improvement Project**

Programming public space for cross-functional and co-beneficial usage is important in urban places like Tacoma. For land use programming to influence canopy cover and the effects of climate change, stewardship of non-traditional open spaces must be encouraged. The *Unimproved Right-of-Way Canopy Improvement Project* aims at intelligently utilizing right-of-way to increase Citywide tree canopy.

Unimproved right-of-way (UROW) are areas platted for alleys, streets, and other transportation corridors, which are currently unpaved and potentially ungraded. UROW boundaries require geospatial identification as they often appear adjacent to private property and could be inaccessible due to shrubs.

These places are scattered throughout the City and may provide opportunities for Tacoma to create public green spaces or enhance the Citywide tree canopy rating. Community members can provide basic stewardship of unimproved ROW, including invasive species removal, tree planting and after care. Unimproved ROWs are often inundated with noxious and invasive plants, including Scotch broom, reed canary grass, English holly and English Ivy.

It should be noted that while the removal of noxious and invasive species, or the removal of trash and litter, are important for all land use designations including UROW, the goal of this land use characterization and prioritization is specifically to plant site-appropriate trees based on the City’s Urban Forestry Program’s approved tree species list. This policy could help the City reach its comprehensive plan goal of 30% canopy cover by 2030.

**UROW spatial extent characterization**

- Identify public right-of-way space in the City.
- Map locations of vegetative cover and pervious surface/soil through NDVI and LiDAR technology.
- Land identified in this manner must be vetted by Department of Community Economic Development to verify its infeasibility and inappropriateness for development.

*Note: All unimproved right-of-way selected for canopy improvement should have no feasible or appropriate land use actions available to it. If land identified as UROW can realistically be developed, it does not meet the threshold for the Unimproved Right-of-Way Canopy Improvement Project.*

**Prioritization for UROW tree installations**

1. Areas adjacent to City and State highway infrastructure.
2. Areas within historically low canopy.
3. Neighborhoods with relative lower opportunity as identified on the Tacoma Equity Index Map.
4. Areas within Tacoma Shoreline Management Program jurisdiction.
5. Areas within environmentally sensitive areas/critical areas.

**Threshold for Plan Implementation**
The Unimproved Right-of-Way Canopy Improvement Project will be measured by performance standards related to feasibility, significance and effectiveness.

_**Feasible:**_
Project is feasible if unimproved right-of-way land is determined to exist within the City of Tacoma using the characterization above.

_**Significant:**_
Project is Significant if the amount of land identified as unimproved right-of-way is:

1) capable of supporting trees, and
2) the total amount of land capable of supporting trees accumulates to a potential 0.5% increase in the City’s current tree canopy coverage.

_**Effective:**_
Project is effective if expenditures remain controlled and focused on trees purchased, volunteer coordination, and well-planned implementation. Tree maintenance and tree risk management would not necessarily be budgeted into this policy. Appropriate land use programming and planned tree planting will reduce and avoid potential need for risk management.

**Notes**

- Tacoma’s ROW Restoration Policy 2017 includes no comment on trees in developed or undeveloped ROWs.
APPENDIX B. HAZARD TREE COST-SHARE PROGRAM

The following is an example that can be referenced for implementing the Management Policy Action Item 1B.3.

EXAMPLE ONLY

The hazard tree cost-share program is a voluntary cost-share program designed to assist homeowners with street tree removal and replacement. A street tree is any tree that is located in the public right-of-way easement (utility strip) between the street and sidewalk. Homeowners can qualify to receive matching funds for tree removal, stump grinding and new tree installation by submitting two written estimates from the enclosed list of participating vendors. The reimbursement amount is based upon the lower of the two estimates and is fifty percent (50%) of the total cost.

Homeowners are required to maintain street trees in front of their homes. This program is intended to help the homeowner comply with the street tree ordinance through financial assistance. If a street tree becomes extremely hazardous, it could result in a civil citation for the homeowner. This program is conducted on a first-come, first-served basis as long as matching funds are available. Reimbursement checks will be processed starting after MONTH, DAY, YEAR.

Recommended Deadlines:

MONTH, DAY, YEAR
Mail or hand-deliver: a signed application form. Two (2) written estimates from the enclosed list of participating vendors.

MONTH, DAY, YEAR
All work must be completed: tree removal, stump grinding and new tree installation. Mail or hand-deliver receipt(s) for all completed work. Reimbursement checks will be processed in four to six weeks.

Only homeowners who provide complete estimates for tree removal, stump grinding and new tree installation will be considered. The Urban Forestry Program office will promptly send a written authorization to proceed with the work upon receipt of the signed application form and two (2) written estimates.

Contact the ### Department with any additional questions about the program at (###) ###-####.

Recommended Application:

APPLICATION FORM HAZARD STREET TREE (COST-SHARE) PROGRAM

DATE:
I(we), the property owner(s) of (street address + zip code) wish to participate in the Hazard Street Tree (Cost-Share) Program.
Please return or hand-deliver a signed application form and copies of the two (2) written estimates from the enclosed list of participating vendors by MONTH, DAY, YEAR to the address below. Please make copies for your records. Deadline for the completion of all work is MONTH, DAY, YEAR which must include tree removal, stump grinding and tree planting. Please submit a copy of your paid invoice/receipt for payment processing. Please call (###) ###-#### if you are asking for assistance with five (5) or more street tree removals. The property owner is responsible for the selection, management and payment of all contractors and suppliers and abides by the program’s guidelines. The City of XXXX does not recommend nor endorse contractors and suppliers of goods and services. Funds for this program are limited. This is a first-come, first-served basis program.

PLEASE WAIT FOR A RETURN PHONE CALL OR LETTER OF APPROVAL PRIOR TO AUTHORIZING WORK TO BEGIN.

SIGNED:

PROPERTY OWNER(S)

HOME PHONE:

WORK PHONE:

Please mail the completed form and estimates to:

DEPARTMENT, ADDRESS, CITY, STATE, ZIPCODE

EMAIL:

Guidelines for the Hazard Street Tree Cost-Share Program:

The CITY has established a Hazard Street Tree Cost-Share and Grant Program for property owners throughout the PRIORITY AREAS to remove and replace street trees that pose a threat to public safety. This is a voluntary program that provides financial assistance to residential property owners for street tree removal, including stump grinding and new street tree installation, in ACCORDANCE WITH MUNICIPAL CODE CHAPTER ##, ORDINANCE ##. The intent of these guidelines is to establish a fair and objective method to govern the award and use of funds budgeted for the Hazard Street Tree Cost-Share and Grant Program.

Eligible Properties

Only owner-occupied residential properties within the USA are eligible for participation.

Program Guidelines

1. This program provides matching monies to reimburse property owners 50% of the total cost of removal of hazardous street trees, stump grinding and replacement of the street tree being removed. In order to qualify for this program, the cost of the work being done cannot be subsidized by any other federal, state or CITY grant program.

2. Reimbursement amounts are based upon the lower of two (2) estimates.

3. Eligible property owners must have at least one hazardous street tree, as determined by the Urban Forester or his/her designee, abutting their property. If funds are available, property owners may replace more than one street tree.
4. Qualifying vendors must submit written documentation to the Urban Forester and agree to adhere to the specifications for tree removal and planting as provided by the Urban Forester. Vendors must provide a one-year guarantee on any replacement tree. The Urban Forester reserves the right to disqualify vendors based upon their prior non-compliance with the specifications of this program.

5. Property owner participation is strictly voluntary, and funding is limited to a first-come, first-served basis.

6. Property owners must replant with a tree at least XXXX inches in caliper, as required by Chapter XXXX. Property owners may replant a larger caliper tree, but reimbursement will be limited to a maximum of the cost of a two and a half-inch caliper tree.

7. The planting of a replacement tree in a location outside the area of the public right-of-way easement may be allowed, but only with prior approval by the Urban Forester or his/her designee.

8. Property owners who wish to perform the work themselves must submit two (2) complete sets of estimates from qualified vendors. The reimbursement will be based upon the lower of the two (2) estimates.

The Process

1. Any interested property owner should contact the Urban Forestry Program to receive program information, an application and to arrange for an on-site inspection. The Urban Forestry Program is located in the XXXXX, ADDRESS, CITY, STATE, ZIPCODE. The phone number is ###-###-####.

2. An eligible property owner shall receive a written acknowledgement of eligibility from the Urban Forestry Program.

3. The property owner shall submit the signed acknowledgement and copies of two (2) written estimates, including the scope of work to be completed, from two (2) separate vendors.

4. Following receipt of the signed acknowledgement and estimates, the Urban Forester or his designee shall provide the homeowner with a written approval to proceed. The written approval shall include a date by which the work must be completed and a date by which all paperwork must be submitted. The property owner can then contact either of the vendors from whom they received estimates and arrange to have the work completed; however, reimbursement will be based on the lower of the two (2) estimates. If the property owner fails to complete the work or submit the paperwork by the deadline dates, the funding may be reallocated to another property owner.

5. Upon completion of work by the vendor, the property owner shall submit a notice of work completed and a copy of the paid invoice (or unpaid invoice in the case of an income qualified property owner) to the Urban Forester, who shall then inspect the site for satisfactory performance as outlined in the vendor specifications.

6. Upon approval of the completed work by the Urban Forester, the request for reimbursement shall be processed. Processing of the reimbursement request can take six to eight weeks.

7. The property owner is solely responsible for managing the project, obtaining all necessary approvals and permits and paying all vendors.
Income Eligibility Qualifications for One Hundred Percent Grants

1. A qualified property owner means any person owning and occupying a residential property who meets the assets test and has an annual income equal to or less than one hundred twenty-five percent (125%) of the poverty guidelines chart established by the Community Services Administration, annually published in the Federal Register, in effect at the time of application. However, income itself shall be measured by the definition contained in subsection (2) of this section. Any person having a beneficial interest in benefited property may qualify for the Hazard Street Tree Cost-Share and Grant Program.

2. Income means the total cash receipts to the residential property owner and spouse after taxes from all sources. These sources include money, wages and salaries after any deductions required by law, but not including food or rent in lieu of wages. They include receipts from self-employment or from one’s own farm or business after deductions for business or farm expenses. They include regular payments from public assistance, social security, unemployment and workmen’s compensation, strike benefits from union funds, veterans benefits, training stipends, alimony and military family allotments or other regular support from an absent family member or someone not living in the household; government employee pensions, private pensions and regular insurance or annuity payments; and income from dividends, interest, rents, royalties or income from estates and trusts. For eligibility purposes, income does not refer to the following money receipts: any assets drawn down as withdrawals from a bank, sale of property, house or car, tax refunds, gifts, one-time insurance payments or compensation for injury; also to be disregarded is noncash income, such as the bonus value of food and fuel produced and consumed on farms and the imputed value of rent from owner occupied farm or nonfarm housing.

3. Assets test means that any person having assets in excess of either:

a. Five thousand dollars ($5,000.00) in liquid assets such as bank accounts, savings, certificates of deposits, stocks bonds, etc; or

b. Five thousand dollars ($5,000.00) in equity in assessed value of nonhomestead property.

c. Shall be ineligible to participate in the Hazard Street Tree Cost-Share and Grant Program for a one hundred percent (100%) grant, notwithstanding that he meets the income level qualifications set forth in this section. However, motor vehicles for personal use, household furnishing and the benefited property itself, as well as buildings located thereon, shall not be included in computing assets.

4. Qualified owners may receive a grant for one hundred percent (100%) of the reasonable cost of removal and replacement of hazardous street trees. Those who are not income qualified may receive a grant for fifty percent (50%) of the reasonable cost of removal and replacement.

5. Twenty-five percent (25%) of the funds appropriated for the Hazardous Street Tree Cost-Share and Grant Program shall be made available for grants to qualified property owners with the remainder of the appropriated funds available for grants to all other property owners. The commissioners of the departments of streets and roads and social services shall be responsible for administration of the program consistent with all provisions of these Guidelines.

INCLUDE VENDOR SPECIFICATIONS FOLLOWING THIS DESCRIPTION
APPENDIX C. IN-HOUSE ARBORIST CREW GUIDANCE

The following provides an overview of the budget enhancement and framework for proposing the in-house arborist crew.

**Implementation:**
Capacity and Training: Action 2D.2, Action 2A.3, Action 2A.4
Funding and Authority: Action 3A.2

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**Recommended Right-of-Way Tree Maintenance Budget Enhancement**

Table 5. Proposed budget enhancement to facilitate ROW tree maintenance

<table>
<thead>
<tr>
<th>Position/Item</th>
<th>Notes</th>
<th>Annual Cost (Biennium Cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>• Hiring &amp; supervisory</td>
<td>$30,000</td>
</tr>
<tr>
<td>Lead ROW Arborist</td>
<td>• ISA Certified Arborist at time of hire</td>
<td>$94,742</td>
</tr>
<tr>
<td>Equipment Operator 1*</td>
<td>• TRAQ within 6 months of hire</td>
<td>($189,484)</td>
</tr>
<tr>
<td></td>
<td>• $33.74/hr + 35% Benefit Package</td>
<td></td>
</tr>
<tr>
<td>Tree Technician</td>
<td>• ISA Certified Arborist or TCIA Certified Tree Care preferred</td>
<td>$73,373</td>
</tr>
<tr>
<td>Grounds Maintenance Worker 1*</td>
<td>• $26.13/hr + 35% Benefit Package</td>
<td>($146,746)</td>
</tr>
<tr>
<td>Seasonal Tree Worker</td>
<td>• ISA/TCIA Certifications recommended</td>
<td>$19,810</td>
</tr>
<tr>
<td>Seasonal O&amp;M*</td>
<td>• $14.11/hr + 35% Benefit Package</td>
<td>($39,621)</td>
</tr>
<tr>
<td>Municipal Forestry Truck</td>
<td>• Altec 12 Yard w/ 40 foot lift</td>
<td>$17,064</td>
</tr>
<tr>
<td></td>
<td>• Lease from vendor (through Tacoma Fleet Management)</td>
<td>($34,128)</td>
</tr>
<tr>
<td>Woodchipper</td>
<td>• Bandit 6 inch chipper</td>
<td>$7,221</td>
</tr>
<tr>
<td></td>
<td>• Lease from vendor (through Tacoma Fleet Management)</td>
<td>($14,442)</td>
</tr>
<tr>
<td></td>
<td>• Includes insurance &amp; gas through TFM</td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>• Assumed parking is through currently owned City location and does not accumulate cost.</td>
<td>$0.00</td>
</tr>
<tr>
<td>Annual Training</td>
<td>• Annual PNW ISA or TCIA Conference or two CEU classes (For Lead ROW Arborist Only)</td>
<td>$1,275</td>
</tr>
<tr>
<td></td>
<td></td>
<td>($2,550)</td>
</tr>
<tr>
<td>Equipment Maintenance</td>
<td>• Maintenance</td>
<td>$1,000</td>
</tr>
<tr>
<td>Equipment Purchase</td>
<td>• One-time purchase</td>
<td>$4,500</td>
</tr>
<tr>
<td><strong>TOTAL ANNUAL COST</strong></td>
<td></td>
<td>$218,985</td>
</tr>
<tr>
<td><strong>TOTAL ENHANCEMENT COST (2-years)</strong></td>
<td></td>
<td>$463,470</td>
</tr>
</tbody>
</table>

*Note: Wages are taken directly from City of Tacoma’s Human Resources website. Exact wages for Equipment Operator 1, Ground Maintenance Worker 1, and seasonal labor may be different. 35% was added to each wage salary to represent benefits and insurance.
Table 6. Estimated 2020 per capita expenditures if Tacoma accepts budget enhancement

<table>
<thead>
<tr>
<th>Rank</th>
<th>City</th>
<th>2018 Population</th>
<th>2018 U&amp;CF Total Budget</th>
<th>Recommended Budget Enhancement</th>
<th>2018 Per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bellevue</td>
<td>139,014</td>
<td>$7,287,080</td>
<td></td>
<td>$52.42</td>
</tr>
<tr>
<td>2</td>
<td>Longview</td>
<td>36,740</td>
<td>$858,720</td>
<td></td>
<td>$23.37</td>
</tr>
<tr>
<td>3</td>
<td>Olympia</td>
<td>49,928</td>
<td>$914,740</td>
<td></td>
<td>$18.32</td>
</tr>
<tr>
<td>4</td>
<td>Kirkland</td>
<td>86,772</td>
<td>$1,568,690</td>
<td></td>
<td>$18.08</td>
</tr>
<tr>
<td>5</td>
<td>Renton</td>
<td>99,692</td>
<td>$1,771,581</td>
<td></td>
<td>$17.77</td>
</tr>
<tr>
<td>6</td>
<td>Seattle</td>
<td>724,764</td>
<td>$10,168,821</td>
<td></td>
<td>$14.03</td>
</tr>
<tr>
<td>7</td>
<td>Redmond</td>
<td>60,712</td>
<td>$679,079</td>
<td></td>
<td>$11.19</td>
</tr>
<tr>
<td>8</td>
<td>Vancouver</td>
<td>171,393</td>
<td>$1,524,385</td>
<td></td>
<td>$8.89</td>
</tr>
<tr>
<td>9</td>
<td>Tacoma</td>
<td>207,280</td>
<td>$1,609,909</td>
<td>248,985</td>
<td>$8.83</td>
</tr>
<tr>
<td>10</td>
<td>Bellingham</td>
<td>85,388</td>
<td>$672,118</td>
<td></td>
<td>$7.87</td>
</tr>
<tr>
<td>11</td>
<td>Spokane</td>
<td>212,982</td>
<td>$894,620</td>
<td></td>
<td>$4.20</td>
</tr>
</tbody>
</table>

Given the ROW Tree Maintenance Budget Enhancement, Tacoma would elevate spending to ninth rank per capita across the State.

**Street Tree Maintenance Regime**

The above Urban Forest budget enables the City to meet the goals of community members, stakeholders, and City staff—supported by the Infrastructure, Planning, and Sustainability subcommittee to City Council. This budget will be used to hire, lease machinery, purchase equipment, and supervise a team of 2.5 full-time employee (FTE) staff performing right-of-way tree care on critical and under-maintained street trees in Tacoma.

Pruning should be performed on a rotation of 5-7 years. TreePlotter, Tacoma’s tree asset management software, should be used as the primary instrument in prioritizing trees, locating and identifying trees, and tracking maintenance and performance.

**Street Tree Maintenance Objectives:**

- Maintain tree health and safety through routine inspection and pruning of street trees in prescribed neighborhoods and street corridors.
- Maintenance will include American National Standard Institute (ANSI) A300 standard pruning practices.
- Removal of high-risk tree parts and whole trees, of small to moderate sized trees.
  - Large trees will likely continue to be contracted out to specialized tree services.

Table 7. Street tree maintenance regime outline

<table>
<thead>
<tr>
<th>Type</th>
<th>Street tree pruning, risk identification and mitigation of prescribed and prioritized street tree corridors. May include occasional tree mulching and irrigation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who</td>
<td>Public Works &gt; Right-of-Way Tree Care Crew</td>
</tr>
<tr>
<td>Intensity</td>
<td>Prune as needed to reach outlined Objectives.</td>
</tr>
<tr>
<td>Frequency</td>
<td>5 to 7-year pruning routine.</td>
</tr>
<tr>
<td>Duration</td>
<td>Tree installation through tree removal.</td>
</tr>
<tr>
<td>Extent</td>
<td>ANSI A300 specified pruning specifically to reduce long-term structural defects/features. To include structural pruning, removal of dead, diseased and decaying branches, redundant leader subordination, and clearance pruning for pedestrians, vehicles, transportation signs, and streetlights.</td>
</tr>
</tbody>
</table>
**APPENDIX D. RIGHT-OF-WAY TREE MAINTENANCE**

This Urban Forest Action Plan recommends the City share the responsibility of street tree maintenance with its residents. Based on multiple data layers, benchmarking research, community feedback, and City staff interviews, the following recommendations are provided.

**Implementation:**
- Management Policy: Action 1B.3
- Funding and Authority: Action 3B.4, Action 3D.8
- Inventories and Plans: Action 4A.1, Action 4A.2
- Risk and Disaster Management: Action 5A.1, Action 5A.3, Action 5B.5

**Recommended Priority Tree Maintenance Corridors**

The following maps and information provide an overview of the potential priority maintenance corridors recommended as part of this Urban Forest Action Plan. Final corridors will be approved by implementing Action 3B.3. The maintenance corridors are based on an analysis of data layers and indicators including the Tacoma Equity Index, the 2018 tree canopy assessment, U.S. Census Bureau’s demographic data, and Tacoma’s tree inventory database.

It is estimated that the City has over 46,000 public trees, many of which are in the public rights-of-way along streets. Currently, in most cases, it is the adjacent property owner’s responsibility to maintain the trees. A permit system is in place for the planting, maintenance, and removal of trees in this public area. By implementing the actions in this Plan such as the budget enhancement request and the assessment of levels of service, an in-house arborist crew can be established for the City to acquire responsibility of tree maintenance in priority corridors.

Based on the Tacoma Equity Index, Census Block Groups (CBG) were identified that were low in opportunity. For more information on the Equity Index visit cityoftacoma.org/equityindex. Using the 2018 tree canopy assessment, CBGs that have a high existing tree canopy percent were overlaid with the low opportunity CBGs. In addition, the City’s existing tree inventory data points were included to determine the potential density of street trees. Lastly, the streets were added to the analysis to develop a composite map of priority neighborhoods, CBGs, and roadways. A total of 14 roadway segments were identified that primarily transect the priority neighborhoods and CBGs.

This task addresses and supports the environmental justice and equity goals of this Urban Forest Action Plan. The following provides a series of maps and summaries to be utilized in the implementation of the Funding and Authority Action 3B.4 and supporting actions.
Figure 6. Map of “Low Equity” Census Block Groups and tree canopy percentages within Tacoma neighborhoods.
Figure 7. Map of proposed roadways for City street tree maintenance
The following table provides a summary of the recommended priority maintenance corridors (roadways) based on the Tacoma Equity Index, existing tree canopy cover, and tree inventory data. Census Block Groups that have a lower opportunity were selected from the Equity Index and aligned with data informing the density of existing trees along roadways.

Table 8. Estimated tree counts for priority maintenance corridors by neighborhood

<table>
<thead>
<tr>
<th>Priority Neighborhood</th>
<th>Roadway</th>
<th>Extent</th>
<th>Estimated Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Tacoma</td>
<td>S Tyler St</td>
<td>South 74th St to SR 16 Hwy W</td>
<td>400 trees</td>
</tr>
<tr>
<td>South Tacoma</td>
<td>Center St</td>
<td>S Orchard to South Pine St</td>
<td>100 trees</td>
</tr>
<tr>
<td>South Tacoma</td>
<td>S Pine St</td>
<td>S 80th St to S Tacoma Way</td>
<td>400 trees</td>
</tr>
<tr>
<td>South Tacoma</td>
<td>S Montgomery St</td>
<td>S 77th St to S 56th St</td>
<td>120 trees</td>
</tr>
<tr>
<td>South Tacoma</td>
<td>S 48th St</td>
<td>S Tacoma Way to I5 Hwy N</td>
<td>100 trees</td>
</tr>
<tr>
<td>South End</td>
<td>Yakima Ave</td>
<td>S 96th St to S 48th St</td>
<td>400 trees</td>
</tr>
<tr>
<td>South End</td>
<td>S L St</td>
<td>S 96th St to S 35th St</td>
<td>300 trees</td>
</tr>
<tr>
<td>South End</td>
<td>Pacific Ave</td>
<td>S 99th St to S 56th St</td>
<td>300 trees</td>
</tr>
<tr>
<td>East Side</td>
<td>McKinley Ave</td>
<td>E 72nd St to Upper Park St</td>
<td>500 trees</td>
</tr>
<tr>
<td>East Side</td>
<td>E 40th St</td>
<td>Pacific Ave to Portland Ave E</td>
<td>175 trees</td>
</tr>
<tr>
<td>East Side</td>
<td>E Portland Ave</td>
<td>74th St C E to I5 Hwy N</td>
<td>500 trees</td>
</tr>
<tr>
<td>West End</td>
<td>6th Ave</td>
<td>Bridgeport Way W to S Stadium Way</td>
<td>300 trees</td>
</tr>
<tr>
<td>North End</td>
<td>N 30th St</td>
<td>N Pearl St to N Schuster Pkwy</td>
<td>350 trees</td>
</tr>
<tr>
<td>North East</td>
<td>Nassau Ave NE</td>
<td>Browns Point Blvd NE to Northshore Pkwy</td>
<td>150 trees</td>
</tr>
</tbody>
</table>

**Total Tree Estimate**: ~4,000 trees

Figure 8. Map displaying the location of the inventoried public trees and the priority corridors.

Low Equity Census Block Groups
Priority tree maintenance roadway
Tacoma Neighborhoods
Inventoried public trees
APPENDIX E. ESTABLISHING A HERITAGE TREE PROGRAM

Implementation: Overlay the height analysis from the 2018 tree canopy assessment with the tree inventory and right-of-way boundary to identify potential trees for the program.

Management Policy: Action 1C.7

Community Engagement: Action 6C.7

Figure 9. Tree canopy height analysis to be used for the first tier of identifying potential heritage trees

Tree Canopy Height Analysis
Tacoma, WA
Dominant Canopy Height Class by Stormwater Basin

Implementation: Overlay the height analysis from the 2018 tree canopy assessment with the tree inventory and right-of-way boundary to identify potential trees for the program.

Management Policy: Action 1C.7

Community Engagement: Action 6C.7

Figure 9. Tree canopy height analysis to be used for the first tier of identifying potential heritage trees
APPENDIX F. CODE RECOMMENDATION PROSPECTUS

To be provided in early 2020.
“Without a plan, the governments and individuals responsible for taking care of an urban forest will not be effective in meeting the true needs of the trees and the community. A plan establishes a clear set of priorities and objectives related to the goal of maintaining a productive and beneficial community forest.”

~American Public Works Association, 2007