Date: September 28, 2022
To: Dale Poppe - Mackenzie
From: Peter van Oss ISA Certified Arborist, TRAQ PN-8145A, ASCA Member
Re: (2816.1) Tree Plan Development - Sherwood Industrial Park Building 5 and 6

## Summary <br> Teragan and Associates has been contracted with Mackenzie Architecture to provide arboricultural consulting services. This report is the tree plan for the development phase of the proposed project. The tree plan meets the recommendations in section 16.142.070 of the City of Sherwood Code for the Sherwood Industrial Park project. This report is for phase 3 of the project located on the northeast side of Century Drive, Lot 150 Buildings 5 and 6. <br> Background <br> ORWA Sherwood LLC is proposing to develop the Sherwood Industrial Park at SW Tualatin Sherwood Road and SW Century Drive in Sherwood. Existing trees are present adjacent to the proposed development. The existing conditions map with existing tree locations is provided in Appendix C. The proposed development is located in the northwestern portion of the property of tax lot 2S129S000150. <br> Purpose of the report <br> The purpose of this report is to provide recommendations for the retention of the trees on site adhering to local municipal codes.

Tree Inventory
Our firm completed the inventory during the site visit on July 7, 2021. The tree diameters were recorded using a diameter tape. The health and conditions of the trees are determined by the plant species profiles compared to the current condition the trees present. Attributes that can negatively impact the ratings are growing conditions, bark inclusions, broken branches, poor vigor...etc.

## Observations

The proposed development is on the NW portion of parcel 2S129S000150. The temporary disturbance area is on the part of the property that is bare and does not have any trees located within the disturbance area except for the street trees in the planter areas between the road and sidewalk. There are no proposed removals for phase 3 of the project.

The landscape plans include the required parking lot and landscaping plantings per City of Sherwood Code. See Appendix D for details.

The street trees shall be protected as shown in Appendix C. The fencing shall be placed at the edge of the planter areas of the street trees along the sidewalk, road, and at the 6 X measurements or dripline whichever is greater.

## Tree Protection During Construction

Trees that are retained should be protected at the recommended distance of twelve inches per diameter inch of the trees for the trees located in the riparian zone. This means that the soil disturbance should be twelve inches per diameter inch away from the tree in circumference of the tree. It is recommended that the existing grades remain the same and native soils remain undisturbed as much as possible within the tree protection zones. Excavation within the 6 X distance must be overseen by the project arborist.

The project arborist should be notified when ground disturbance takes place near 6X, a distance measured at a rate of six inches per diameter inch of the tree measured from the trunk.

Additional watering during the dry months is recommended if root impacts occur to any of the trees on-site. The watering should be done with the use of a soaker hose placed at the edge of the drip line and impact area. The watering should be adjusted so that the soil moisture content remains optimal. It may be recommendable to measure the soil moisture content on a weekly basis to ensure that the moisture content remains effective in relation to the recovery of the root impacts. Soil amelioration in the form of nutrient rich mulch, liquid fertilizers, and the use of growth hormones may be needed to accomplish the retention goals of the project.

## Additional Tree Protection Mitigation in Appendix 5

## Conclusion

It is in my professional opinion that the tree protection measures set forth in this tree plan will suffice in the protection of the trees during construction. It is important to adhere to the standards in appendix 4 to ensure that the retention goals are successful.

Peter van Oss
ISA Certified Arborist PN-8145A
Tree Risk Assessment Qualified
ASCA Member

## Enclosures:

Appendix A: Certification of Performance
Appendix B: Assumptions and Limiting Conditions
Appendix C: Site Plan Fencing Placement and proposed removals
Appendix D: Inventory
Appendix E: Tree Protection Specifications

## Appendix A: Certification of Performance

I, Peter van Oss, Certify:

- That a representative of Teragan \& Associates, Inc., has inspected the tree(s) and/or the property referred to in this report. The extent of the evaluation is stated in the attached report.
- That Teragan \& Associates, Inc. has no current or prospective interest in the vegetation of the property that is the subject of this report, and Teragan \& Associates, Inc. has no personal interest or bias with respect to the parties involved.
- That Teragan \& Associates, Inc.'s compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, or upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- That the analysis, opinions, and conclusions that were developed as part of this report have been prepared according to commonly accepted arboricultural practices.
- That a Certified Arborist has overseen the gathering of data.


## Appendix B: Assumptions and Limiting Conditions

- Any legal description provided to the consultant is assumed to be correct. Teragan and Associates, Inc. checked the species identification and tree diameters in the field.
- It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
- The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
- Loss or alteration of any part of this delivered report invalidates the entire report.
- Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
- The consultants' role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
- This report is to certify the trees that are on site, their size and condition and create a tree plan. Tree plans are to include the measurements necessary to protect trees that are to be retained during the construction process.








Revised by:

Tree Inventory - Sherwood Industrial Park
SW Century Dr and SW Tualatin Sherwood Rd
Conducted 7/7/2021
Christine Johnson, PN-8730A

| Survey No. | Tree No. | Common Name | Scientific Name | DBH ${ }^{1}$ (in) | $\begin{array}{\|c} \hline \text { Crown } \\ \text { Radius (ft) } \\ \hline \end{array}$ | Column 1 | Crown Area (sq ft) | Condition ${ }^{2}$ | Structure ${ }^{2}$ | Comments | Treatment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10000 | 43 | Armstrong red maple | Acer rubrum 'Armstrong' | 5 | 5 |  | 79 | Good | Fair | Wound on SW side of trunk; moderate wound wood; closed wound on N side of trunk. | retain |
| 10001 | 42 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10002 | 41 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good | Wound on NE and SW sides at base; good wound wood. | retain |
| 10003 | 40 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good | Wound on S side at base; good wound wood. | retain |
| 10004 | 39 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 7 |  | 154 | Good | Good |  | retain |
| 10005 | 38 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10006 | 37 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10007 | 36 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10008 | 35 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10009 | 34 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10010 | 33 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10011 | 32 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 10012 | 31 | Armstrong red maple | Acer rubrum 'Armstrong' | 10 | 7 |  | 154 | Good | Good |  | retain |
| 10013 | 30 | Armstrong red maple | Acer rubrum 'Armstrong' | 9 | 7 |  | 154 | Good | Good | Trunk wounds on S and NW sides at base; good wound wood. | retain |
| 10014 | 29 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Fair | Lean to SW; trunk wound on NE side; girdling root on NE side. | retain |
| 10017 | 28 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10288 | 175 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 7 |  | 154 | Good | Good |  | retain |
| 10289 | 176 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 7 |  | 154 | Good | Good |  | retain |
| 10290 | 177 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 10291 | 178 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10292 | 179 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10293 | 180 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed trunk wound on N side. | retain |
| 10294 | 181 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10295 | 182 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10296 | 183 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 7 |  | 154 | Good | Good |  | retain |
| 10302 | 188 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10303 | 189 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10304 | 190 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed wound on W side. | retain |
| 10305 | 191 | Armstrong red maple | Acer rubrum 'Armstrong' | 2 | 3 |  | 28 | Fair | Good | Leaf scorch; needs water. | retain |
| 10690 | 13 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10694 | 17 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 10863 | 172 | Armstrong red maple | Acer rubrum 'Armstrong' | 9 | 5 |  | 79 | Good | Good |  | retain |
| 10864 | 173 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 10865 | 174 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 6 |  | 113 | Good | Good | Two closed trunk wounds on E and N sides. | retain |
| 11431 | 171 | Armstrong red maple | Acer rubrum 'Armstrong' | 9 | 7 |  | 154 | Good | Good |  | retain |
| 11432 | 8 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11437 | 11 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 11438 | 12 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11659 | 170 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |

Revised by:

## Tree Inventory - Sherwood Industrial Park

SW Century Dr and SW Tualatin Sherwood Rd
Conducted 7/7/2021
Christine Johnson, PN-8730A

| Survey No. | Tree No. | Common Name | Scientific Name | DBH ${ }^{1}$ (in) | Crown <br> Radius (ft) | Column 1 | Crown Area (sq ft) | Condition ${ }^{2}$ | Structure ${ }^{2}$ | Comments | Treatment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11660 | 169 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11663 | 168 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11664 | 167 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 11665 | 166 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11666 | 165 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 11667 | 164 | Armstrong red maple | Acer rubrum 'Armstrong' | 10 | 10 |  | 314 | Good | Good |  | retain |
| 12168 | 207 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed trunk wound on SE side. | retain |
| 12170 | 205 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Wound on N side of trunk. | retain |
| 12171 | 204 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 12172 | 203 | Armstrong red maple | Acer rubrum 'Armstrong' | 9 | 7 |  | 154 | Good | Good |  | retain |
| 12173 | 202 | Armstrong red maple | Acer rubrum 'Armstrong' | 2 | 3 |  | 28 | Good | Good |  | retain |
| 12176 | 201 | Armstrong red maple | Acer rubrum 'Armstrong' | 2 | 3 |  | 28 | Good | Good |  | retain |
| 12177 | 200 | Armstrong red maple | Acer rubrum 'Armstrong' | 2 | 3 |  | 28 | Good | Good |  | retain |
| 12178 | 199 | Armstrong red maple | Acer rubrum 'Armstrong' | 9 | 5 |  | 79 | Good | Good |  | retain |
| 12179 | 198 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 12180 | 197 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 12181 | 196 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 12182 | 195 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 12183 | 194 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed wound on SW side. | retain |
| 12196 | 206 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed trunk wounds on S, E, and W sides. | retain |
| 12259 | 193 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good | Closed wound on SW side. | retain |
| 12260 | 192 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 20948 | 21 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good | Trunk wound on W side; closed. | retain |
| 20949 | 20 | Armstrong red maple | Acer rubrum 'Armstrong' | 5 | 5 |  | 79 | Good | Good |  | retain |
| 20950 | 19 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 20951 | 18 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 21197 | 1 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 21198 | 2 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21199 | 3 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21200 | 4 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21201 | 5 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21202 | 6 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21203 | 7 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 21205 | 9 | Armstrong red maple | Acer rubrum 'Armstrong' | 8 | 5 |  | 79 | Good | Good |  | retain |
| 21207 | 10 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 21212 | 14 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 21213 | 15 | Armstrong red maple | Acer rubrum 'Armstrong' | 6 | 5 |  | 79 | Good | Good |  | retain |
| 21214 | 16 | Armstrong red maple | Acer rubrum 'Armstrong' | 7 | 5 |  | 79 | Good | Good |  | retain |
| 20952 | 104 | Birch | Betula pendula | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20953 | 105 | Birch | Betula pendula | 7 | 7 |  | 154 | Good | Good | Four leaders: 4,4,3,3. | retain |
| 20955 | 102 | Birch | Betula pendula | 8 | 15 |  | 707 | Good | Good | Three leaders:6,5,3. | retain |
| Added | 103 | Birch | Betula pendula | 5 | 7 |  | 154 | Good | Good |  | retain |
| 20120 | 76 | Cottonwood | Populous trichocarpa | 6 | 7 |  | 154 | Good | Good |  | retain |
| 20121 | 77 | Cottonwood | Populous trichocarpa | 15 | 15 |  | 707 | Good | Good | Two leaders:12,7 | retain |
| 20122 | 78 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good |  | retain |
| 20123 | 80 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |

Revised by:

Arboricultural Consultants
Tree Inventory - Sherwood Industrial Park
SW Century Dr and SW Tualatin Sherwood Rd
Conducted 7/7/2021
Christine Johnson, PN-8730A

| Survey No. | Tree No. | Common Name | Scientific Name | DBH ${ }^{1}$ (in) | Crown <br> Radius (ft) | Column1 | Crown Area (sq ft) | Condition ${ }^{2}$ | Structure ${ }^{2}$ | Comments | Treatment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20124 | 79 | Cottonwood | Populous trichocarpa | 8 | 12 |  | 452 | Good | Good |  | retain |
| 20396 | 81 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good |  | retain |
| 20397 | 82 | Cottonwood | Populous trichocarpa | 10 | 17 |  | 908 | Good | Good |  | retain |
| 20398 | 83 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20399 | 84 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Fair | Failed split tree to the N , not inventoried; unbalanced canopy to the S . | retain |
| 20098 | 44 | Cottonwood | Populous trichocarpa | 13 | 12 |  | 452 | Good | Good | Two leaders:10,9. | retain |
| 20099 | 45 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20099 | 46 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20100 | 47 | Cottonwood | Populous trichocarpa | 12 | 15 |  | 707 | Good | Good |  | retain |
| 20101 | 48 | Cottonwood | Populous trichocarpa | 17 | 12 |  | 452 | Good | Good | Two leaders:12,12. | retain |
| 20102 | 49 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| 20103 | 50 | Cottonwood | Populous trichocarpa | 14 | 15 |  | 707 | Good | Good |  | retain |
| 20104 | 51 | Cottonwood | Populous trichocarpa | 20 | 15 |  | 707 | Good | Good | Two leaders: $13,15$. | retain |
| 20105 | 53 | Cottonwood | Populous trichocarpa | 14 | 10 |  | 314 | Good | Good |  | retain |
| 20106 | 54 | Cottonwood | Populous trichocarpa | 8 | 7 |  | 154 | Good | Fair | Lost and regrew leader; wide angle. | retain |
| 20107 | 55 | Cottonwood | Populous trichocarpa | 15 | 12 |  | 452 | Good | Good |  | retain |
| 20108 | 56 | Cottonwood | Populous trichocarpa | 12 | 12 |  | 452 | Good | Good |  | retain |
| 20109 | 58 | Cottonwood | Populous trichocarpa | 9 | 10 |  | 314 | Good | Good |  | retain |
| 20110 | 66 | Cottonwood | Populous trichocarpa | 14 | 15 |  | 707 | Good | Good |  | retain |
| 20111 | 67 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20112 | 68 | Cottonwood | Populous trichocarpa | 14 | 12 |  | 452 | Good | Good | Two leaders:10,10 | retain |
| 20113 | 69 | Cottonwood | Populous trichocarpa | 6 | 5 |  | 79 | Good | Good |  | retain |
| 20114 | 70 | Cottonwood | Populous trichocarpa | 8 | 7 |  | 154 | Good | Good |  | retain |
| 20115 | 71 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20116 | 72 | Cottonwood | Populous trichocarpa | 8 | 12 |  | 452 | Good | Good |  | retain |
| 20117 | 73 | Cottonwood | Populous trichocarpa | 10 | 15 |  | 707 | Good | Good |  | retain |
| 20118 | 74 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20119 | 75 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good |  | retain |
| 20125 | 65 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20126 | 64 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20127 | 63 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| 20128 | 61 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good | Two leaders:6,6. | retain |
| 20129 | 60 | Cottonwood | Populous trichocarpa | 8 | 12 |  | 452 | Good | Good |  | retain |
| 20130 | 59 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20386 | 138 | Cottonwood | Populous trichocarpa | 17 | 20 |  | 1257 | Good | Good | Two leaders:12,12. | retain |
| 20387 | 139 | Cottonwood | Populous trichocarpa | 9 | 10 |  | 314 | Good | Good |  | retain |
| 20388 | 141 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| 20389 | 142 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| 20390 | 144 | Cottonwood | Populous trichocarpa | 11 | 10 |  | 314 | Good | Good | Two leaders:8,8. | retain |
| 20391 | 145 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20392 | 146 | Cottonwood | Populous trichocarpa | 9 | 12 |  | 452 | Good | Good |  | retain |
| 20393 | 147 | Cottonwood | Populous trichocarpa |  | 10 |  | 314 | Good | Good | Four leaders: 8,5,4,4. | retain |
| 20394 | 149 | Cottonwood | Populous trichocarpa | 7 | 12 |  | 452 | Good | Good |  | retain |
| 20395 | 148 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |

Revised by:

Tree Inventory - Sherwood Industrial Park
SW Century Dr and SW Tualatin Sherwood Rd
Conducted 7/7/2021
Christine Johnson, PN-8730A

| Survey No. | Tree No. | Common Name | Scientific Name | DBH ${ }^{1}$ (in) | Crown <br> Radius (ft) | Column1 | Crown Area (sq ft) | Condition ${ }^{2}$ | Structure ${ }^{2}$ | Comments | Treatment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20400 | 85 | Cottonwood | Populous trichocarpa | 12 | 15 |  | 707 | Good | Good |  | retain |
| 20401 | 88 | Cottonwood | Populous trichocarpa | 5 | 7 |  | 154 | Good | Good |  | retain |
| 20402 | 87 | Cottonwood | Populous trichocarpa | 10 | 12 |  | 452 | Good | Good | Codominant leader failed years ago. | retain |
| 20403 | 89 | Cottonwood | Populous trichocarpa | 11 | 12 |  | 452 | Good | Good | Two leaders:8,7. | retain |
| 20404 | 90 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20405 | 92 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20406 | 95 | Cottonwood | Populous trichocarpa | 13 | 15 |  | 707 | Good | Good | Two leaders:8,10 | retain |
| 20407 | 94 | Cottonwood | Populous trichocarpa | 5 | 7 |  | 154 | Good | Good |  | retain |
| 20410 | 96 | Cottonwood | Populous trichocarpa | 10 | 12 |  | 452 | Good | Good |  | retain |
| 20706 | 97 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good |  | retain |
| 20707 | 98 | Cottonwood | Populous trichocarpa | 13 | 15 |  | 707 | Good | Good |  | retain |
| 20708 | 99 | Cottonwood | Populous trichocarpa | 20 | 22 |  | 1520 | Good | Good |  | retain |
| 20840 | 116 | Cottonwood | Populous trichocarpa | 16 | 20 |  | 1257 | Good | Good |  | retain |
| 20841 | 117 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20842 | 118 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20843 | 119 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20844 | 123 | Cottonwood | Populous trichocarpa | 14 | 12 |  | 452 | Good | Good | Two leaders:12,8. | retain |
| 20845 | 124 | Cottonwood | Populous trichocarpa | 6 | 5 |  | 79 | Good | Good |  | retain |
| 20846 | 125 | Cottonwood | Populous trichocarpa | 5 | 7 |  | 154 | Good | Good |  | retain |
| 20847 | 126 | Cottonwood | Populous trichocarpa | 6 | 10 |  | 314 | Good | Good |  | retain |
| 20848 | 121 | Cottonwood | Populous trichocarpa | 6 | 8 |  | 201 | Good | Good |  | retain |
| 20849 | 122 | Cottonwood | Populous trichocarpa | 8 | 12 |  | 452 | Good | Good | Two leaders:6,5. | retain |
| 20850 | 120 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good | Two leaders:7,4. | retain |
| 20851 | 127 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| 20852 | 128 | Cottonwood | Populous trichocarpa | 9 | 10 |  | 314 | Good | Good | Two leaders:7,6. | retain |
| 20853 | 129 | Cottonwood | Populous trichocarpa | 10 | 12 |  | 452 | Good | Good |  | retain |
| 20854 | 130 | Cottonwood | Populous trichocarpa | 11 | 15 |  | 707 | Good | Good | Four leaders: 6,6,6,4. | retain |
| 20855 | 131 | Cottonwood | Populous trichocarpa | 6 | 8 |  | 201 | Good | Good |  | retain |
| 20856 | 133 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good |  | retain |
| 20857 | 134 | Cottonwood | Populous trichocarpa | 5 | 8 |  | 201 | Good | Good |  | retain |
| 20858 | 135 | Cottonwood | Populous trichocarpa | 6 | 8 |  | 201 | Good | Good |  | retain |
| 20954 | 106 | Cottonwood | Populous trichocarpa | 9 | 12 |  | 452 | Good | Good | Incorrect icon on survey; small two-stem birch to NW. | retain |
| 20956 | 107 | Cottonwood | Populous trichocarpa | 15 | 10 |  | 314 | Good | Good |  | retain |
| 20958 | 109 | Cottonwood | Populous trichocarpa | 20 | 15 |  | 707 | Good | Good | Three leaders:15,11,8. | retain |
| 20959 | 110 | Cottonwood | Populous trichocarpa | 11 | 8 |  | 201 | Good | Good |  | retain |
| 20960 | 113 | Cottonwood | Populous trichocarpa | 6 | 7 |  | 154 | Good | Good |  | retain |
| 20961 | 114 | Cottonwood | Populous trichocarpa | 6 | 7 |  | 154 | Good | Good |  | retain |
| 20962 | 115 | Cottonwood | Populous trichocarpa | 5 | 7 |  | 154 | Good | Good |  | retain |
| 20963 | 112 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| 20964 | 111 | Cottonwood | Populous trichocarpa | 7 | 8 |  | 201 | Good | Good |  | retain |
| 20859/30385 | 137 | Cottonwood | Populous trichocarpa | 16 | 20 |  | 1257 | Good | Good | Two leaders:10,12. | retain |
| Added | 52 | Cottonwood | Populous trichocarpa | 9 | 10 |  | 314 | Good | Good | Two leaders:8,5. | retain |
| Added | 57 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| Added | 62 | Cottonwood | Populous trichocarpa | 6 | 7 |  | 154 | Good | Good |  | retain |
| Added | 86 | Cottonwood | Populous trichocarpa | 7 | 10 |  | 314 | Good | Good | W of 85. | retain |

Revised by:

Tree Inventory - Sherwood Industrial Park
SW Century Dr and SW Tualatin Sherwood Rd
Conducted 7/7/2021
Christine Johnson, PN-8730A

| Survey No. | Tree No. | Common Name | Scientific Name | DBH ${ }^{1}$ (in) | Crown <br> Radius (ft) | Column 1 | Crown Area (sq ft) | Condition ${ }^{2}$ | Structure ${ }^{2}$ | Comments | Treatment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Added | 91 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| Added | 93 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good |  | retain |
| Added | 101 | Cottonwood | Populous trichocarpa | 5 | 7 |  | 154 | Good | Good |  | retain |
| Added | 132 | Cottonwood | Populous trichocarpa | 6 | 8 |  | 201 | Good | Good |  | retain |
| Added | 136 | Cottonwood | Populous trichocarpa | 6 | 8 |  | 201 | Good | Good |  | retain |
| Added | 140 | Cottonwood | Populous trichocarpa | 8 | 7 |  | 154 | Good | Good | Two leaders:6,6. | retain |
| Added | 143 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good |  | retain |
| Added | 150 | Cottonwood | Populous trichocarpa | 11 | 12 |  | 452 | Good | Good | 31' W of sidewalk, $18^{\prime} \mathrm{N}$ of \#28. | retain |
| Added | 151 | Cottonwood | Populous trichocarpa | 7 | 7 |  | 154 | Good | Good | $7{ }^{\prime}$ west and a few ft S of 150. | retain |
| Added | 152 | Cottonwood | Populous trichocarpa | 9 | 12 |  | 452 | Good | Good |  | retain |
| Added | 153 | Cottonwood | Populous trichocarpa | 10 | 10 |  | 314 | Good | Good |  | retain |
| Added | 154 | Cottonwood | Populous trichocarpa | 8 | 10 |  | 314 | Good | Good | 21' S of \#27, inland. | retain |
| Added | 100 | Cottonwood | Populous trichocarpa | 7 | 20 |  | 1257 | Good | Good |  | retain |
| 11678 | 155 | English oak | Quercus robur | 7 | 10 |  | 314 | Good | Good |  | retain |
| 10020 | 22 | Norway maple | Acer platanoides | 7 | 7 |  | 154 | Good | Good |  | retain |
| 10023 | 23 | Norway maple | Acer platanoides | 6 | 5 |  | 79 | Good | Good |  | retain |
| 10024 | 24 | Norway maple | Acer platanoides | 6 | 7 |  | 154 | Good | Good |  | retain |
| 10025 | 25 | Norway maple | Acer platanoides | 5 | 5 |  | 79 | Fair | Fair | Dying leader; bark crack on W side; unbalanced to the E. | retain |
| 10026 | 26 | Norway maple | Acer platanoides | 6 | 7 |  | 154 | Fair | Good | Some dead branches in interior. | retain |
| 10027 | 27 | Norway maple | Acer platanoides | 7 | 7 |  | 154 | Good | Good |  | retain |
| 10297 | 184 | Norway maple | Acer platanoides | 6 | 7 |  | 154 | Fair | Fair | Dead branches; unbalanced to the E; inclusion. | retain |
| 10298 | 185 | Norway maple | Acer platanoides | 4 | 5 |  | 79 | Good | Good |  | retain |
| 10300 | 186 | Norway maple | Acer platanoides | 6 | 7 |  | 154 | Fair | Fair | wood; dead branches. | retain |
| 10301 | 187 | Norway maple | Acer platanoides | 6 | 7 |  | 154 | Good | Good | Wound on E side of trunk. | retain |
| 11679 | 156 | Sweetgum | Liquidambar styraciflua | 7 | 7 |  | 154 | Good | Good | Two wounds on S side of trunk; good wound wood. | retain |
| 11680 | 157 | Sweetgum | Liquidambar styraciflua | 7 | 10 |  | 314 | Good | Good |  | retain |
| 11681 | 158 | Sweetgum | Liquidambar styraciflua | 7 | 10 |  | 314 | Good | Good |  | retain |
| 11682 | 159 | Sweetgum | Liquidambar styraciflua | 7 | 10 |  | 314 | Good | Good |  | retain |
| 11683 | 160 | Sweetgum | Liquidambar styraciflua | 9 | 10 |  | 314 | Good | Good |  | retain |
| 11684 | 161 | Sweetgum | Liquidambar styraciflua | 7 | 10 |  | 314 | Good | Good |  | retain |
| 11685 | 162 | Sweetgum | Liquidambar styraciflua | 8 | 12 |  | 452 | Good | Good |  | retain |
| 11686 | 163 | Sweetgum | Liquidambar styraciflua | 9 | 10 |  | 314 | Good | Good |  | retain |
| 20957 | 108 | Willow | Salix sp. | Avg. 3 | 7 |  | 154 | Good | Good | 8 leaders averaging 3 " diameter. | retain |
| ${ }^{1}$ DBH (Diameter at Breast Height). The trunk diameter measured at industry standard, 4.5 feet above ground. |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{2}$ Condition and Structure ratings range from Good, Fair, Poor, Very Poor, to Dead. |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Appendix E: Tree Protection Specifications

It is critical that the following steps be taken to ensure that they are retained and protected.

## Before Construction Begins

2. Notify all contractors of the tree protection procedures. For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection. It can only take one mistake with a misplaced trench or other action to destroy the future of a tree. a. Hold a Tree Protection meeting with all contractors to fully explain goals of tree protection.
b. Have all subcontractors sign memoranda of understanding regarding the goals of tree protection. Memoranda to include penalty for violating tree protection plan. Penalty to equal appraised value of tree(s) within the violated tree protection zone per the current Trunk Formula Method as outline by the Council of Tree \& Landscape Appraisers current edition of the Guide for Plant Appraisal.

## 3. Fencing.

a. Establish fencing around each tree or grove of trees to be retained as shown on the tree protection site plan.
b. The fencing is to be put in place before the ground is cleared to protect the trees and the soil around the trees from any disturbance at all. Exception is if trees are to be removed that are located within the tree protection zones, they should be removed prior to installing the tree protection fencing without the use of mechanized wheeled or tracked equipment.
c. Fencing is to be placed at the edge of the root protection zone as shown on the Tree Protection Plan (Appendix 3). Root protection zones are established by the project arborist based on the needs of the site and the tree to be protected.
d. "Protection fencing consisting of a minimum 4-foot-high metal fencing, secured with 6foot metal posts shall be established at the edge of the root protection zone and permissible encroachment area on the development site. Existing structures and/or existing secured fencing at least 3.5 feet tall can serve as the required protective fencing."
e. Fencing is to remain in the position that is established by the project arborist and not to be moved without written permission from the project arborist until the end of the project.

## 4. Signage

a. All tree protection fencing should have signage clearly indicating that the area is a vegetation protection zone, appendix 6.
b. Signage should be placed as to be visible from all sides of a tree protection area and spaced every 35 feet.

## TREE PROTECTION ZONE

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION FENCING.

Please contact the project arborist if alterations to the approved location of the tree protection fencing are necessary.

Project Arborist - 503.697.4975
info@teragan.com

## During Construction <br> 5. 1Protection guidelines within the Root Protection Zone

a. No traffic shall be allowed within the root protection zone. No vehicle, heavy equipment, or even repeated foot traffic.
b. No storage of materials including but not limited to soil, construction material, or waste from the site.
i. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
c. Construction trailers are not to be parked / placed within the root protection zone without written clearance from the project arborist.
d. No vehicles shall be allowed to park within the root protection areas.
e. No activity shall be allowed that will cause soil compaction within the root protection zone.
6. Tree protection. Retained trees shall be protected from any cutting, skinning, or breaking of branches, trunks, or roots.
7. Root pruning. Any roots that are to be cut from existing trees that are to be retained, the project consulting arborist shall be notified to evaluate, document, and oversee the proper cutting of roots with sharp cutting tools. Cut roots are to be immediately covered with soil or mulch to prevent them from drying out.
8. Grade changes. No grade change should be allowed within the root protection zone.
9. Root protection zone changes. Any necessary deviation of the root protection zone shall be cleared by the project consulting arborist in writing.
10. Watering. Provide water to trees during the summer months as needed. Tree(s) that will have had root system(s) cut back will need supplemental water to overcome the loss of ability to absorb necessary moisture during the summer months.
11. Utilities. Any necessary passage of utilities through the root protection zone shall be by means of tunneling under roots by hand digging or boring.
12. Re-inspection of fencing. Tree protection fencing is subject to inspection by the city. The project arborist highly recommends monthly inspections of tree protection fencing to ensure compliance with the permit and protection of the trees.

## After Construction

14. Fences are to remain standing until the completion of the project.
15. Carefully landscape around the tree. Do not allow trenching within the root protection zone which still exists even though the tree protection fencing has been removed for landscape installation. Carefully plant new plants within the root protection zone. Avoid cutting the roots of the existing trees.
16. Do not plan for irrigation within the root protection zone of existing trees unless it is drip irrigation for a specific planting or cleared by the project arborist.
17. Provide for or ensure that adequate drainage will occur around the retained trees.
18. Pruning of the trees should be completed as one of the last steps of the landscaping process before the final placement of trees, shrubs, ground covers, mulch, or turf.
19. Trees that are retained may need to be fertilized as called for by the project arborist if acceptable thresholds are exceeded.
