ARBORIST REPORT

AGI Avant, INC.

South San Francisco PUC site, existing tree assessment.

Submitted to:

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Tree Care Professionals Serving Communities Who Care about Trees www.WCAINC.com

Prepared by:

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Summary

Included in this report is an assessment of the current trees located at parcel "B and C" in South San Francisco off of Mission Road. A total of 64 trees were surveyed on the site of various species and sizes. Information regarding tree location (GPS), condition, species, size and a maintenance recommendation where collected and up loaded to WCA's online data base *Arbor Access Online (AAOL).* Included in this report is an over view of the data collected, more accurate maps or digital files can be obtained by contacting *West Coast Arborists Inc.* Based on the City of South San Francisco's tree removal permitting process 7 trees required a permit for removal.

Background

AGI Avant contacted West Coast Arborists in October of 2018 to for a tree assessment in the City of South San Francisco. The assessment area was provided by Brian Baker of AGI Avant in the form of a PDF map *(Included in Appendix A of this report)*. The highlighted areas for Parcels B and C were to be survived for any trees within the boundaries for a pre-construction assessment.

Assignment

AGI Avant, Inc. has contracted West Coast Arborists (WCA) to provide the following services.

1. Visit the site and preform a basic visual assessment of the trees.
    a. Including GPS location, size of tree, species and condition.
    b. Site trees included in the City of South San Francisco's tree protection ordinance.
2. Provide a written report of my findings.
    a. Include guidelines for tree protection for any trees retained through construction.

Observations

On November 7th, 2018, I visited the site and located the trees with a *Trimble Geo 7x* handheld GPS unit. The majority and largest of the trees were located on the south side of *Colma Creek,* at the northwest end of *Antoinette Lane.* This area is part of the *City of South San Francisco's Centennial Way Trail.* Several large Blue Gum Eucalyptus (*Eucalyptus globulus*) trees are located along the trail as well as some recently planted young trees and a large grove of Blue Gums near the fence line of the *BART* maintenance area. North of *Colma Creek* consists of small recently planted Coast Live Oak (*Quercus agrifolia*) along *Centennial Way Trail* headed north.

Of the 64 trees collected 7 trees were recommended for removal either due to being dead, declining or poorly located. 2 trees were slated for structural pruning, that would entail reducing weight on defects seen in the canopy to reduce risk of failure. 26 of the trees where staked or recently planted and showed signs of drought stress with minimal growth and die back present in the canopy.

City of South San Francisco's Tree Preservation Ordinance

Based on the *City of South San Francisco's* Tree preservation ordinance[1]

What is a "protected tree"?

Any tree of the following species with a circumference of 75" or more when measured 54" above natural grade

- Blue Gum (*Eucalyptus globulus*)
- Black Acacia (*Acacia melanoxylon*)
- Myoporum (*Myoporum laetum*)
- Sweetgum (*Liquidambar styraciflua)*
- Glossy Privet (*Lingustrum lucidum*)
- Lombardy Poplar (*Populus nigra*)

Any heritage tree of the following species with a circumference of 30" or more when measured at 54" above natural grade

- California Bay (*Umbellaria californica*)
- Oak (*Quercus spp.)*
- Cedar (*Cedrus spp.)*
- California Buckeye (*Aesculus californica*)
- Catalina Ironwood (*Lyonothamnus floribundus var. asplenifolius*)
- Strawberry Tree (*Arbutus spp.)*
- Mayten (*Maytenus boaria)*
- Little Gem Dwarf Southern Magnolia (*Magnolia grandiflora 'Little Gem'*)

Any tree other than the species listed above with a circumference of 48" or more when measured 54" above natural grade

A tree or stand of trees so designated based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance

A stand of trees whereby each tree is dependent upon the others for survival

[1] Information obtained from http://www.ssf.net/departments/parks-recreation/parks-division/trees

Discussion

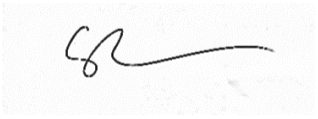
The measurements provided by the city for trunk size is provided in circumference, during the assessment the trees were collected by diameter. Multiplying the diameter by 3.14 results in the circumference($c = d\pi$). 7 trees met the requirement for a removal permit based on size and species listed below.

LOT-1	*Hesperocyparis macrocarpa* MONTEREY CYPRESS	13-18	17	01-15		Grid/Routine Trim
LOT-5	*Eucalyptus globulus* BLUE GUM	31+	50	45-60		Trim-Poorly Structured
LOT-7	*Eucalyptus globulus* BLUE GUM	31+	45	30-45		Trim-Poorly Structured
LOT-8	*Eucalyptus globulus* BLUE GUM	31+	55	45-60		Grid/Routine Trim
LOT-24	*Eucalyptus globulus* BLUE GUM	25-30	26	30-45		Grid/Routine Trim
LOT-27	*Eucalyptus globulus* BLUE GUM	25-30	26	30-45		Grid/Routine Trim
LOT-28	*Eucalyptus globulus* BLUE GUM	25-30	27	30-45		Grid/Routine Trim

A map of these trees is available in the Appendix of this report.

Thank you for the opportunity to assist you in your tree assessment needs. If there are any questions or concerns feel free to contact me directly at (408) 835-0438, greeve@wcainc.com

Respectfully,



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Glossary

Air Spade- specialist excavation tool that uses compressed air to remove and break up soil with minimal damage to roots and underground utilities. It can be used for a variety of reasons including the alleviation of compaction, soil improvement, root inspection and root location.

Canopy- the above ground portion of a tree.

Codominant- The term "codominant stems" is used to describe 2 or more main stems/leaders that are about the same diameter and emerge from the same location on the main trunk. As the tree grows older, the stems remain similar in size without any single one becoming dominant.

Dripline- the area beneath the **canopy** of a tree.

Fibrous roots- Nonstructural absorption roots the tree uses to absorb water and nutrients.

Level 1 Assessment- a limited visual assessment, looking for obvious defects such as, but not limited to, dead trees, large cavity openings, large dead or broken branches, fungal fruiting body, large cracks and severe leans as stated by the International Society of Arboriculture "Tree Risk Assessment manual".

Mechanical scarring- scratches from tool or equipment to the trunk or lateral branches.

Multileader- trees that lack a central leader.

Red Leaf gall- Galls are abnormal growths that occur on leaves, twigs, or branches caused by wasps. Red leaf gall rarely causes lasting damage to oaks.

Root flair- The root flare is the area at the base of the trunk that swells out to become buttress roots entering the soil; and is also known as the root collar.

Structural roots- Support roots that help the tree stand.

Support cable- Steel cables installed in the canopy to support potential structural defects. Cables require periodical inspections and should never be used as a failsafe.

Appendix A- Map (Parcel map provided by AGI Avant Inc.)

EXHIBIT C – Map of Adjacent Parcels

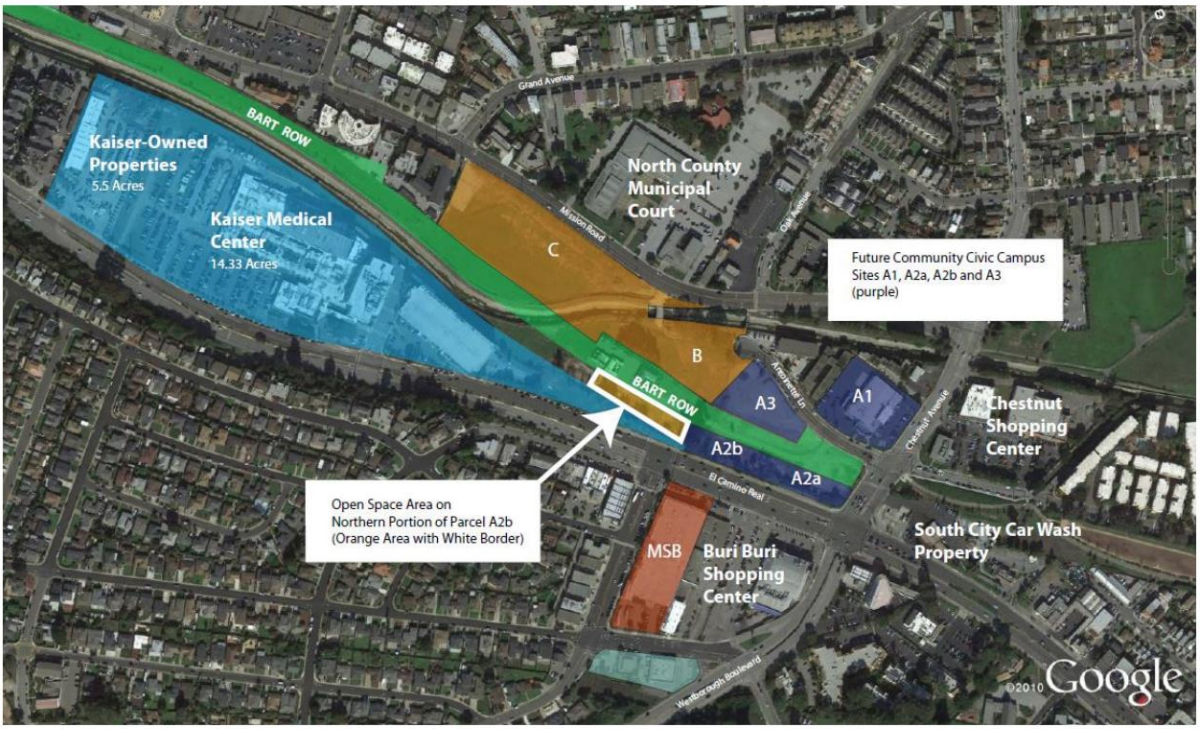

Figure 1: Parcel map provided by AGI.

Appendix B- Map of all trees.

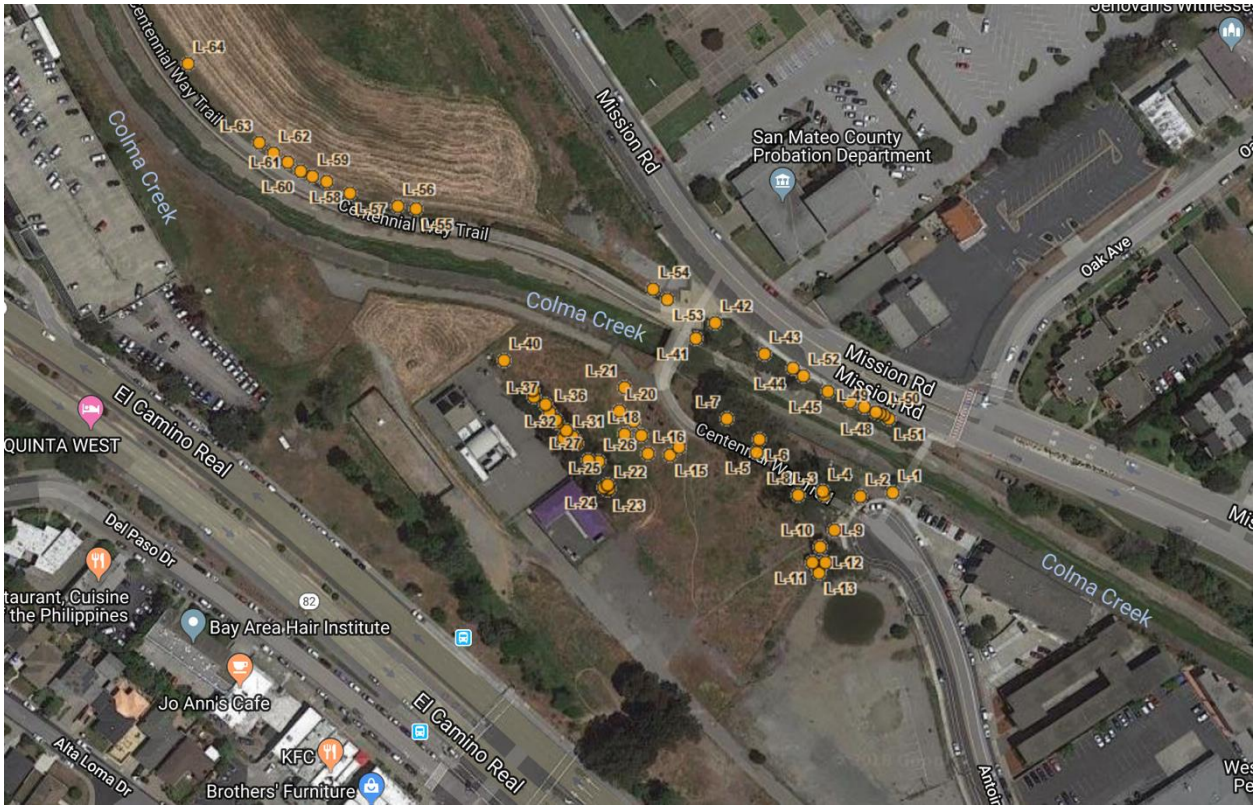

Figure 2: Map of all trees survived.

Appendix C- Map of city defined protected trees.

Figure 3: Map of trees that meet the cities protected tree requirements.

Appendix D -Protecting Trees during Construction

It is important to take steps prior to construction to establish a "TPZ" or *Tree Protection Zone* for trees that will not be removed during construction. This is an area around a tree that will have limited access to people, heavy equipment and building materials. Soil Compaction, mechanical scarring to the trunk and root damage are some of the main concerns during construction. Following these steps can greatly increase the chance of retaining desirable and valuable trees in an established land scape, but consultation with and arborist on construction plans is necessary to ensure the tree does not become a liability.

Establishing a TPZ

Roots growing the surface are often over looked during construction, this is usually because of a misconception that they grow straight down, but roots are most often found with in the top 18" of soil and can expand far beyond the canopy of a tree. Depending on the size age and species of a tree, setting a protective barrier (orange construction fencing or chain-link fence) around the perimeter of the tree is advised for high value trees. The distances vary for different species and a certified arborist should always be consulted. Limiting access to this area will reduce soil compaction that can be directly associated with root loss and tree decline, as well as prevent heavy machinery's exhaust from burning the canopy.

Working within the TPZ

Construction can rarely accommodate for the necessary room for *all* trees and in many cases the tree will have to be removed, but consulting with an arborist to insure minimal damage while working with in this area can greatly increase the chances a tree surviving. Some basic steps would be; installing protective boarding around the trunk and lower branches (usually wood boards tied to the tree, DO NOT NAIL THE BOARDS INTO THE TREE) establishing 6-12 inches of mulch around the base of the tree and laying plywood down to reduce soil compaction.

Planning and forethought will be the most efficient way to retain desired trees and consulting with a Certified Arborist on site is recommended as every site and tree poses potentially different issues.

ASSUMPTIONS AND LIMITING CONDITIONS

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the Consultant can neither guarantee nor be responsible for the accuracy of information provided by others. Standard of Care has been met with regards to this project within reasonable and normal conditions.

2. The Consultant will not be required to give testimony or to attend court by reason of this report unless subsequent contractual agreements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

3. Loss or alteration of any part of this report invalidates the entire report.

4. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written consent of the Consultant.

5. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a stipulated result, a specified value, the occurrence of a subsequent event, nor upon any finding to be reported.

6. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, or coring, unless otherwise stated. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree(s) or property in question may not arise in the future.

7. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. It is highly recommended that you follow the arborist recommendations; however, you may choose to accept or disregard the recommendations and/or seek additional advice.

8. Arborists cannot detect every condition that could possible lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time.

9. Any recommendation and/or performed treatments (including, but not limited to, pruning or removal) of trees may involve considerations beyond the scope of the arborist's services, such as property boundaries, property ownership, site lines, disputes between neighbors, and any other related issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist can then be expected to consider and reasonably rely on the completeness and accuracy of the information provided.

10. The author has no personal interest or bias with respect to the subject matter of this report or the parties involved. He/she has inspected the subject tree(s) and to the best of their knowledge and belief, all statements and information presented in the report are true and correct.

11. Unless otherwise stated, trees were examined using the risk assessment criteria detailed by the International Society of Arboriculture's publications *Best Management Practices – Tree Risk Assessment* and the *Tree Risk Assessment Manual*.