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# TREE APPRAISAL AND MITIGATION REPORT

For

BROTHERS REDEVELOPMENT, INC

ATTN: MR. JEFF MARTINEZ, PRESIDENT

For Service At

CHAMBERS COMMUNITY

1900 SOUTH CHAMBERS ROAD

AURORA, COLORADO 80017



May 16, 2024

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## WHY DID SAVATREE PERFORM A TREE APPRAISAL WITH MITIGATION INCHES?

Brothers Redevelopment is working on a development known as Chambers Community in the City of Aurora. Aurora Forestry has a policy on retaining trees with trunks measuring four inches in diameter and larger. Trees being removed must be appraised and mitigation inches calculated. Trees over and above what is required for the redevelopment may be used as a credit on the mitigation inch calculation. Alternatively, cash in lieu will be paid to the Aurora Forestry Fund.

Pete Gemmill contacted us on April 10, 2024, describing the project. SavATree was engaged by Brothers Redevelopment on April 25, 2024, to perform a tree inventory with appraisal and mitigation inch calculation report.

## SAVATREE SUMMARY

On August 8, 2019, SavATree authored a report to Helena Land Holding entitled Vegetation Management Plan. An addendum was prepared on April 17, 2020. At that time, Aurora Forestry informed me by verbal communication that they were not seeking any appraisal or mitigation inch calculations for the parcel.

Between April 17, 2020, and April 25, 2024, significant grading was completed, trees were removed from the Woodrim Tributary as well as Siberian elms in the field.

The parcel that I looked at for Helena Land Holding has since been subdivided. The subject of this report is now known as Lot 1 Block 1 Parcel ID 1975-20-3-29-001.

One Siberian elm remains along Chambers Road that appears to be on the subject parcel and adjacent to 1812 South Chambers Road. Looking at the drawings, this tree likely conflicts with a proposed sidewalk and will be removed. The Siberian elm tree is appraised at \$6,330 and 12.0 mitigation inches.

Trees exist that are adjacent to the subject parcel at 1812 South Chambers Road, 1800 South Chambers Road, and Woodrim Tributary.

## HOW DID SAVATREE CONDUCT THE APPRAISAL?

Documents provided by 2 Oaks Partners:

- Block 1 Site Plan Amendment 09.2001
- 23 1208\_1900 S Chambers\_Redline Survey
- Topo – Lot 1 1900 Chambers\_11.28.2023

This project was entered in ESRI ArcGIS with a survey for Chambers Community. Data collected includes tree:

- Species.
- Trunk diameter at 4.5 feet above ground level known as Diameter at Breast Height or DBH.
- Multiple stem diameters.
- Condition percentages including health, structure, and form.
- Functional and external limitations.
- Geo coordinates, recreational grade – not survey quality.

To complete the tree appraisal, I used the *Rocky Mountain Chapter Species Ratings and Appraisal Factors Guide*<sup>1</sup> and the *Guide for Plant Appraisal 10<sup>th</sup> Edition, Second Printing*<sup>2</sup>.

## WHAT DID SAVATREE FIND?

The ArcGIS map is posted to <https://arcg.is/1Gz9WK>

The map image may also be found in Appendix A. A survey with property pins was recently performed along the Woodrim Tributary.

### 1900 South Chambers Road (subject parcel)

One Siberian elm (*Ulmus pumila*) was found along Chambers Road and adjacent to 1812 South Chambers Road (Marsha Moss property). The tree is in fair condition and has an equivalent trunk diameter measurement of 21.1 inches (multi-stem tree).

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<sup>1</sup> Rocky Mountain Chapter Species Ratings and Appraisal Factors Guide. 2011 Denver, CO. Rocky Mountain Chapter International Society of Arboriculture.

<sup>2</sup> Council of Tree and Landscape Appraisers. 2019. Guide for Plant Appraisal 10<sup>th</sup> Edition Second Printing. International Society of Arboriculture. Atlanta, GA.

### 1812 South Chambers Road (Marsha Moss)

Four Siberian elms remain on the south and east sides of the Moss property that abut the subject parcel. It should be noted that there is a 15-foot buffer shown on Block 1 Site Plan Amendment 09-2021. Considering this buffer there should be minimal to no additional impacts to the Siberian elms from construction. These trees are all multi-stem elms, and some have formed small groves consisting of multiple stems (trunks). These elms are all in fair condition and with estimated equivalent trunk sizes 33.0, 12.0, 24.0, and 16.0 inches. I did not enter the Moss property to inspect or measure the trees.

### 1800 South Chambers Road (Cube Smart Self Storage)

I inventoried an Austrian pine (*Pinus nigra*) 12.0-inch trunk measurement, Pinyon pine (*Pinus edulis*) 6.0-inch trunk measurement, and Bur oak (*Quercus macrocarpa*) 12.0-inch trunk measurement. These trees were intentionally planted, and the pines are in good condition and the oak is excellent. Three volunteer Siberian elms with trunk measurements of 4.5, 6.4, and 7.0 inches have volunteered here. These trees are growing up next to the retaining wall and already have or will conflict with that wall.

### Woodrim Tributary

One Siberian elm is close to the subject property. This tree is growing in the water and Aurora Forestry does not require appraisal or mitigation inches for such trees. This tree has an estimated calculated trunk measurement of 19.0 inches and is in fair condition.

Photographs representative of the landscapes are in Appendix B.

Tree condition ratings are described as follows:

Excellent (81 – 100 percent) – A vigorous tree in near perfect health, with little to no dieback. Tree structure is ideal and without defect. The form (shape) is true to species.

Good (61 – 80 percent) – The vigor is normal for the tree species with minor twig dieback. Defects are minor and easily corrected. The canopy may have minor asymmetry which could be due to pruning for clearance.

Fair (41 – 60 percent) – The vigor is normal or reduced. There is an accumulation of dead branches. Defects are present in the canopy that may or may not be correctable. There may be an active pest infestation. The canopy has been reduced or is asymmetrical.

## APPRAISAL

### Approach

Three predominant approaches are recognized

- Cost – Estimate to repair, replace, or restore the item in question.
- Income – An appraisal of income producing property. Examples include nurseries, Christmas tree farms, and timber.
- Sales comparison – Identifies real property sales transactions developing an opinion of market value.

The approach for this appraisal is cost.

### Size

Trees with more than 1 stem at 4.5 feet above ground level were dealt with in the following fashion. To determine a tree measurement (1 trunk) size, the cross-sectional area of each trunk was determined from the trunk diameter measurement.

$$(d \div 2)^2 \times \pi = \text{trunk cross sectional area}$$

Each of the trunk or stem areas are added together and placed in the following formula to arrive at an equivalent single trunk measurement that represents the size of the tree.

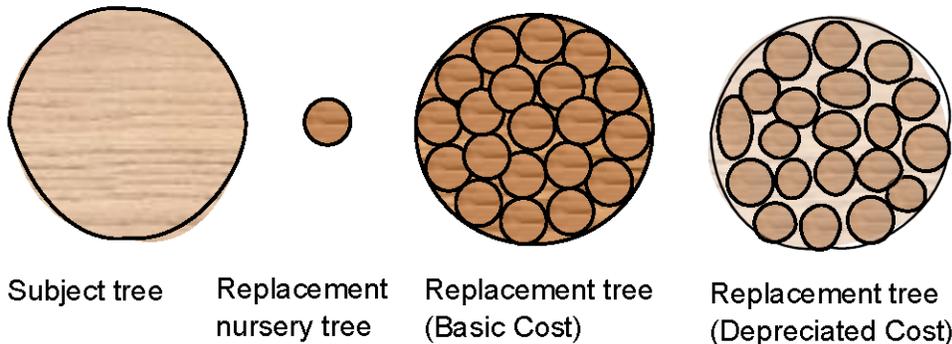
$$\sqrt{(\text{cumulative trunk areas} \div \pi)} \times 2 = \text{trunk diameter.}$$

### Cost based appraisal

The trees are larger than what is considered a commonly available tree. The *Rocky Mountain Species and Appraisal Factors Guide* on page 3 states:

- “Largest commonly available deciduous shade tree is 2.5 inches caliper.”

A surrogate method is employed to monetize the plant material in question as pricing is not commonly available for the trees in this assignment. When appraising landscape trees larger than nursery size, the Trunk Formula Technique is often employed. The basis for the Trunk Formula Technique is the price of the replacement nursery material and the trunk diameter or plant height of the specimen being appraised. The price of the nursery sized plant is extrapolated to the size or function of the tree being appraised. This number is the basic reproduction cost and that is depreciated (adjusted) by condition, functional and external limitations. A visual depiction of the Trunk Formula Technique is in Figure 1.



This is a pictorial representation of the Trunk Formula Technique. The price of a nursery tree is extrapolated by a unit production cost to represent that of the subject tree basic cost. Basic cost is then depreciated. (Adapted from *Guide for Plant appraisal 10<sup>th</sup> Edition, Second Printing*)

**Figure 1**

## Depreciation

### 1. Condition (Physical Deterioration)

This is a weighted compilation of plant health, structural integrity, and form. A perfect specimen may have a condition rating near 100 percent. A tree or shrub with poor health or with severe structural deficiencies will have a low rating or perhaps zero. Condition ratings range from 40 – 84 percent.

### 2. Functional Limitations

This factor describes the plant material's interaction or appropriateness in its fixed planting site. What, if anything, will impede the plant's development in this space including susceptibility to insect and disease pestilence, site conditions, placement, and plant genetic limitations?

Species rating percentages provided in the *Rocky Mountain Species Ratings and Appraisal Factors Guide*. Some trees were depreciated further due to crowding and conflicts with infrastructure. Functional limitations are 10 – 70 percent.

### 3. External Limitations

These are limitations outside of the property and control of the owner or manager that will impact the subject plant material. These limitations include, but are not limited to, laws, ordinances, easements, water restrictions, and changes in the climate that endanger or impede plant health and development. No depreciation taken.

Appraisal data is presented in summary and detail form as follows:

- Appendix C Table 1 listing all 12 trees including appraisal factors and depreciated reproduction cost.
- Appraisal detail for Siberian elm (Tree #1) follows in Appendix D and is provided as an example.
- Detailed appraisal in tabular form for all 12 trees is in a separate document entitled Chambers Community Tree Appraisal.xlsx.

### SAVATREE RECOMMENDATION

We recommend no appraisal or mitigation inch requirements for the subject property. Care should be taken to preserve the trees on the abutting Marsha Moss property. It is very unlikely that the trees at Cube Smart Self Storage will be impacted by construction activities. Also, recommending no appraisal for Siberian elms numbers 8, 9, or 10. No recommendation for any trees existing in the Woodrim Tributary parcel.

Sincerely,



Steven D. Geist, SavATree  
Registered Consulting Arborist #340  
Board Certified Master Arborist #0116B



## APPENDIX A ARCGIS MAP

### 1900 S Chambers Rd



Maxar, Microsoft | Esri Community Maps Contributors, City of Aurora, CO, County and City of Denver, County of Arapahoe, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Figure 2. Also posted to <https://arcg.is/1Gz9WK>

## APPENDIX B PHOTOGRAPHS



Photograph 1.

This is looking north along Chambers Road. Photograph of Siberian elm number 1 on the left and number 2 on the right.



Photograph 2.

This is a photograph of Siberian elm number 2 and looking along the property boundary between Moss and the subject property. In this photograph, Moss is inside the orange fencing where the tree is.



Photograph 3.  
Landscaping and volunteer trees at Cube Smart Self Storage.



Photograph 4.  
This is looking south with Woodrim Tributary on the left of the lath stakes and the subject property on the right.

## APPENDIX C APPRAISAL SUMMARY FOR ALL TREES

**Table 1**

Tree #	Common name	Location	Trunk Diameter inches	Condition Percent	Functional Limitation Percent	External Limitation Percent	Appraisal \$100	Mitigation Inches
1	Siberian elm	On property line	21.1	56	40	100	\$ 6,300	11.8
2	Siberian elm	1812 S Chambers	33.0	58	50	100	\$ 18,900	0.0
3	Siberian elm	1812 S Chambers	12.0	56	50	100	\$ 2,900	0.0
4	Siberian elm	1812 S Chambers	24.0	40	50	100	\$ 7,200	0.0
5	Siberian elm	1812 S Chambers	16.0	40	50	100	\$ 3,500	0.0
6	Austrian pine	1800 S Chambers	12.0	78	70	100	\$ 4,100	0.0
7	Pinyon pine	1800 S Chambers	6.0	68	70	100	\$ 1,400	0.0
8	Siberian elm	1800 S Chambers	4.5	56	10	100	\$ -	0.0
9	Siberian elm	1800 S Chambers	6.4	48	10	100	\$ -	0.0
10	Siberian elm	1800 S Chambers	7.0	60	10	100	\$ -	0.0
11	Bur oak	1800 S Chambers	12.0	84	70	100	\$ 7,100	0.0
12	Siberian elm	Aurora, Woodrim	19.0	60	40	100	\$ 5,600	0.0
Total							\$ 57,000	11.8

## APPENDIX D APPRAISAL DETAIL FOR SIBERIAN ELM 1

### Siberian elm 1

Species	Siberian elm		
1 Size	Trunk Diameter*	<u>21.1 in.</u>	@ <u>4.5 ft.</u>
Functional Replacement	Trunk Diameter*	<u>21.1 in.</u>	
2	Cross-sectional area	<u>349.49 sq.in.</u>	
Depreciation			
3 Condition rating	Dead branches, multiple stems		<u>56 Percent FAIR</u>
		Percent Weighting Rating	
	Health	50 40 20	
	Structure	60 40 24	
	Form	60 20 12	
4 Functional Limitations	Branch failures, on property line, numerous, leaf feeding and bark beetles		<u>40 Percent Severe impact</u>
5 External Limitations			<u>100 Percent No impact</u>

Functional replacement tree	Cost by	Diameter
Utility or benefit to be replaced	<u>Shade tree on roadway</u>	
Species	<u>Cottonwood</u>	
6 Size	Trunk Diameter*	<u>2.5 @ 6 in.</u>
7 Cross sectional area		<u>4.909 sq.in.</u>
8 Replacement tree cost		<u>\$363</u>
Source	<u>Alameda, Arbor Vally, Little Valley</u>	

### Computations

9 Unit tree cost (line 8 / line 7)	\$	<u>73.94</u>
10 Basic reproduction cost (line 2 x line 9)	\$	<u>25,841</u>
11 Depreciated reproduction cost (line 3 x line 4 x line 5 x line 10)	\$	<u>5,788</u>

### Additional costs

Cleanup	\$	<u>-</u>
Replacement tree installation	\$	<u>544.50</u>
Delivery	\$	<u>-</u>
Hardscape	\$	<u>-</u>
12 Total additional costs	\$	<u>545</u>
13 Total reproduction costs	\$	<u>6,333</u>
14 Rounded (to the nearest \$100)	\$	<u>6,300</u>

\* dbh may be replaced with plant area, volume, or height as appropriate