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TREE CONSERVATION REPORT

For

GREG MCILVAIN

PROJECT MANAGER

GM CONSULTING

For Service At

COMPARK SOUTH

PARKER, COLORADO

January 31, 2020

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WHY DID SAVATREE PERFORM A TREE PRESERVATION SURVEY AT COMPARK SOUTH?

Greg McIlvain (GM Consulting) commissioned SavATree to perform a tree survey and preservation plan. GM Consulting is working on developing this parcel that is situated easterly of Peoria Street and southerly of E-470 highway. A water line is to be bored underneath E-470 necessitating a grade change where the trees in question now exist. A tree survey is required to satisfy the requirements of Parker Municipal Code 13.10.110.

EXECUTIVE SUMMARY

The appraised value of the qualifying trees is $16,462. The live link to the cloud-based ArcGIS survey is as follows. http://arcg.is/1aHKCi

I recommend that Trees 1, 2, 4, 6 9, 11 and 13 be removed and not relocated. The cumulative depreciated replacement cost for these trees is $$7,475

Trees 3, 5, 7, 8, 10 and 12 could be relocated. The cumulated depreciated replacement cost for these trees is $8,987.

Tree number	Species	Category	Depreciated Cost
1	ponderosa pine	Remove	$ 1,234
2	ponderosa pine	Remove	$ 933
3	ponderosa pine	Relocate	$ 1,315
4	ponderosa pine	Remove	$ 1,026
5	ponderosa pine	Relocate	$ 1,274
6	ponderosa pine	Remove	$ 1,379
7	ponderosa pine	Relocate	$ 1,332
8	ponderosa pine	Relocate	$ 2,073
9	ponderosa pine	Remove	$ 1,033
10	ponderosa pine	Relocate	$ 1,841
11	ponderosa pine	Remove	$ 984
12	ponderosa pine	Relocate	$ 1,152
13	ponderosa pine	Remove	$ 886

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HOW DID SAVATREE CONDUCT THIS SURVEY?

GM Consulting provided a drawing titled Compark Village South Filing No. 1 Bore. In that drawing, 13 trees are identified as being in the zone of disturbance.

Greg McIlvain and I met on-site on January 22, 2020. Field Reconnaissance was completed on January 23, 2020.

I collected tree data on an iPad tablet using ESRI ArcGIS software. Plant name, size, condition, and depreciation factors were entered.

To complete this appraisal, I used as references the Guide for Plant Appraisal 10th Edition 2nd Printing[1] and the Rocky Mountain Chapter Species Ratings and Appraisal Factors Guide[2].

WHAT DID SAVATREE FIND?

The 13 trees located in the zone of disturbance are all planted on a berm south of Highway E470. At the time of planting, landscape fabric and mulch was installed along with a drip irrigation system. The landscape fabric and mulch are degraded, and the irrigation system is no longer operative. Trees on top (upper row) of the berm are more subject to the climate and wind. As a rule, these trees are weaker than those in the lower row of trees.

APPRAISAL

Trunk formula technique, depreciated reproduction method was used for the appraisal.

The appraisals for each tree may be found beginning on page 7.

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[1] Council of Tree and Landscape Appraisers. 2019. Guide for Plant Appraisal 10th Edition Second Printing. Champaign, IL. International Society of Arboriculture.

[2] _____ 2011 Rocky Mountain Chapter Species Ratings and Appraisal Factors Guide. Denver, CO. Rocky Mountain Chapter International Society of Arboriculture.

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The following is a narrative describing the appraisal methodology using ponderosa pine, Tree 1, as an example.

Ponderosa pine Appraisal Trunk Formula Technique, Depreciated Reproduction Cost

Subject Tree

1. **Appraised Tree Size**
2. **Multiplier**

This is the cross-sectional trunk area of the subject tree measures 7.5 inches in diameter. The cross-sectional area is 44.156 inches.
$(7.5 \text{ inch} \div 2)^2 \times 3.14 = 44.156$ square inches

Depreciation

3. **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 a poor health or with severe structural deficiencies will have a low rating or perhaps zero.

The condition rating for this tree is 70 percent and is described as good. However, it should be noted that the tree has a health percentage of 50 and is weak from a vitality standpoint.

4. **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 site conditions, placement and plant genetic limitations?

Ponderosa pine is native to the Colorado forest. Ponderosa may be subject to wood boring insects, especially if in weakened condition. Some of the pines show indications of wood boring insects in the tree branches. The depreciated functional limitation is 80 percent.

5. **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,

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ordinances, easements, water restrictions, and the presence of biotic pests that endanger or impede plant health and development.

The irrigation system is now inoperative. This contributes to the slow growth on some of the trees and an accumulation of dead branches. The functional limitation is 80 percent.

Replacement Tree

6. Size

This is the trunk caliper size of the nursery stock tree, 3.5 inches.

7. Cross-sectional area

The trunk area of the nursery sized tree. $(3.5 \div 2)^2 \times 3.14 = 9.622$ square inches.

8. Replacement tree cost.

For 2019 nursery tree prices, I consulted the printed wholesale nursery catalogues from Alameda Wholesale, Arbor Valley Wholesale, and Little Valley. The average cost for a 3.5-inch (8-foot-tall) ponderosa pine is $347.

Computations

9. Unit Tree Cost

This is the trunk caliper size of the nursery stock tree.
$347 wholesale tree cost ÷ 9.622 square inches = $36.06 per square inch.

10. Basic Reproduction Cost

Line 2 times line 9. 44.156 sq.in. × $36.06 / sq.in. = $1.592.

11. Depreciated Reproduction Cost

The basic reproduction cost times the depreciations.

$1,592 x 70% x 80% x 80% = $713

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Additional Costs

Replacement Tree Cost

The installation cost is 1.5 times the wholesale cost - $520.50.

12. Total Additional Costs

The total additional costs are $520.50.

13. Total Reproduction Costs

Depreciated reproduction cost + total additional costs. $713 + $520.50 = $1234

14. Total Reproduction Costs to the nearest $1

The total reproduction cost is $1,234 rounded to the nearest $1.

Sincerely,

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

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PROPERTY MAP

Compark South

Subject Tree				
Tree #	Common name	Latin name	(1) Trunk Diameter	(2) Cross Sectional Area
1	Ponderosa pine	Pinus ponderosa	7.5	44.156
2	Ponderosa pine	Pinus ponderosa	5.7	25.505
3	Ponderosa pine	Pinus ponderosa	7.5	44.156
4	Ponderosa pine	Pinus ponderosa	6.5	33.166
5	Ponderosa pine	Pinus ponderosa	7.6	45.342
6	Ponderosa pine	Pinus ponderosa	8	50.240
7	Ponderosa pine	Pinus ponderosa	7.3	41.833
8	Ponderosa pine	Pinus ponderosa	10.1	80.078
9	Ponderosa pine	Pinus ponderosa	6.1	29.210
10	Ponderosa pine	Pinus ponderosa	9.1	65.006
11	Ponderosa pine	Pinus ponderosa	5.8	26.407
12	Ponderosa pine	Pinus ponderosa	6.6	34.195
13	Ponderosa pine	Pinus ponderosa	5.8	26.407

Subject Tree		Condition Rating					Depreciation			
Tree #	Common name	Health Percent	Structure Percent	Form Percent	(3) Condition Percent	(3) Condtion Rating	(4) Functional Limitation Percent	(4) Functional Limitation Impact	(5) External Limitation Percent	(5) External Limitation Impact
1	Ponderosa pine	50	90	70	70	Good	80	Minor Impact	80	Minor Impact
2	Ponderosa pine	50	90	70	70	Good	80	Minor Impact	80	Minor Impact
3	Ponderosa pine	70	90	70	78	Good	80	Minor Impact	80	Minor Impact
4	Ponderosa pine	50	80	70	66	Good	80	Minor Impact	80	Minor Impact
5	Ponderosa pine	70	70	80	72	Good	80	Minor Impact	80	Minor Impact
6	Ponderosa pine	60	90	70	74	Good	80	Minor Impact	80	Minor Impact
7	Ponderosa pine	80	90	80	84	Excellent	80	Minor Impact	80	Minor Impact
8	Ponderosa pine	80	90	80	84	Excellent	80	Minor Impact	80	Minor Impact
9	Ponderosa pine	65	90	70	76	Good	80	Minor Impact	80	Minor Impact
10	Ponderosa pine	85	90	90	88	Excellent	80	Minor Impact	80	Minor Impact
11	Ponderosa pine	60	90	80	76	Good	80	Minor Impact	80	Minor Impact
12	Ponderosa pine	70	90	80	80	Good	80	Minor Impact	80	Minor Impact
13	Ponderosa pine	50	70	60	60	Fair	80	Minor Impact	80	Minor Impact

Subject Tree		Replacement Plant			
Tree #	Common name	Species	(6) Trunk Diameter	(7) Cross Sectional Area	(8) Plant Cost
1	Ponderosa pine	Ponderosa pine	3.5	9.622	347
2	Ponderosa pine	Ponderosa pine	3.5	9.622	347
3	Ponderosa pine	Ponderosa pine	3.5	9.622	347
4	Ponderosa pine	Ponderosa pine	3.5	9.622	347
5	Ponderosa pine	Ponderosa pine	3.5	9.622	347
6	Ponderosa pine	Ponderosa pine	3.5	9.622	347
7	Ponderosa pine	Ponderosa pine	3.5	9.622	347
8	Ponderosa pine	Ponderosa pine	3.5	9.622	347
9	Ponderosa pine	Ponderosa pine	3.5	9.622	347
10	Ponderosa pine	Ponderosa pine	3.5	9.622	347
11	Ponderosa pine	Ponderosa pine	3.5	9.622	347
12	Ponderosa pine	Ponderosa pine	3.5	9.622	347
13	Ponderosa pine	Ponderosa pine	3.5	9.622	347

Subject Tree		Computation				Additional Costs		
Tree #	Common name	(9) Unit Tree Cost	(10) Basic Reproduction Cost	(11) Depreciated reproduction cost	(12) Replacement Tree Installation	(12) Total Additional Costs	(13) Total Reproduction Costs	(14) Rounded (to the nearest $1)
1	Ponderosa pine	36.06	$ 1,592	$ 713	520.50	520.50	$ 1,234	$ 1,234
2	Ponderosa pine	36.06	$ 920	$ 412	520.50	520.50	$ 933	$ 933
3	Ponderosa pine	36.06	$ 1,592	$ 795	520.50	520.50	$ 1,315	$ 1,315
4	Ponderosa pine	36.06	$ 1,196	$ 505	520.50	520.50	$ 1,026	$ 1,026
5	Ponderosa pine	36.06	$ 1,635	$ 753	520.50	520.50	$ 1,274	$ 1,274
6	Ponderosa pine	36.06	$ 1,812	$ 858	520.50	520.50	$ 1,379	$ 1,379
7	Ponderosa pine	36.06	$ 1,509	$ 811	520.50	520.50	$ 1,332	$ 1,332
8	Ponderosa pine	36.06	$ 2,888	$ 1,552	520.50	520.50	$ 2,073	$ 2,073
9	Ponderosa pine	36.06	$ 1,053	$ 512	520.50	520.50	$ 1,033	$ 1,033
10	Ponderosa pine	36.06	$ 2,344	$ 1,320	520.50	520.50	$ 1,841	$ 1,841
11	Ponderosa pine	36.06	$ 952	$ 463	520.50	520.50	$ 984	$ 984
12	Ponderosa pine	36.06	$ 1,233	$ 631	520.50	520.50	$ 1,152	$ 1,152
13	Ponderosa pine	36.06	$ 952	$ 366	520.50	520.50	$ 886	$ 886

Subject Tree		Comments
Tree #	Common name	
1	Ponderosa pine	Dead branches
2	Ponderosa pine	Dead branches. Old engraver beetles. Weak growth.
3	Ponderosa pine	Dead lower branches
4	Ponderosa pine	Dead branches. Weak growth.
5	Ponderosa pine	Dead branches. Codominant
6	Ponderosa pine	Some dead. Slow growth
7	Ponderosa pine	Couple lower branches. Good growth.
8	Ponderosa pine	Bare surface roots couple of dead branches. Good growth.
9	Ponderosa pine	Some exposed roots. Lower dead. Fair growth.
10	Ponderosa pine	Bare surface roots. Some lower dead branches.
11	Ponderosa pine	Weak. Dead branches.
12	Ponderosa pine	Dead lower branches. Fair growth.
13	Ponderosa pine	Larger dead branches with engraver beetle. Old damage