

# **Waterstone Filing # 4**

## **Alameda Ave. and Harvest Road, Aurora, Colorado**



**Prepared for:**  
**Mr. Mick Kittle**  
**PlanWest, Inc.**  
**797 Santa Fe Drive**  
**Denver, CO 80204**

**Prepared by:**  
**Mr. Scott Grimes**  
**Colorado Tree Consultants**  
**1600 S. Carr Street**  
**Lakewood, CO 80232**

**March 1, 2021**

# Colorado Tree Consultants

1600 South Carr Street, Lakewood, Colorado 303-720-8170

March 1, 2021

Mr. Mick Kittle, Senior Project Manager  
PlanWest, Inc.  
767 Santa Fe Drive  
Denver, CO 80204

RE: Waterstone Filing # 4: Tree Assessment

Dear Mr. Kittle:

Thank you for the opportunity to provide an assessment of the trees at Waterstone Filing # 4 development project in Aurora, Colorado. I appraised the trees using the trunk formula method developed by the Council of Tree and Landscape Appraisers Guide for Plant Appraisal 9<sup>th</sup> Edition and supplemented with regional information from the Species Rating and Appraisal Factors Guide, 2011, published by the Rocky Mountain Chapter of the International Society of Arboriculture (ISARMC): the same method used by Aurora Forestry. Estimating tree value is subjective: I can discuss and support my ratings for species, condition and location with Aurora Forestry as needed.

The trunk formula method is used to appraise the monetary value of trees considered too large to replace with nursery grown or field dug trees. The basic value of a tree is based on the installed cost of the largest commonly available transplantable tree plus the increase in value due to the larger size of the tree being appraised. This value is then depreciated based on the species, condition and location of the appraised trees. Species rating is from the ISARMC guide, location is based on a combination of the site near east Alameda and Harvest Road, the placement of the trees on the site and the contribution the trees make to the site benefits accrued. The condition ratings range from Dead (0 – 14%), Poor (15% - 40%), Fair (41% - 70%), Good (71% - 89%) and Excellent (90% - 100%) and consider the structure and health of the roots, trunk, scaffold branches, secondary branches and twigs and the foliage and buds. The percentage ratings are of the assessed tree as compared to a 'specimen' quality tree of the same species (100%).

On February 19, 2021 I inventoried the size, species and condition of the trees and marked the location of 52 trees on the site map you provided. One tree is a small Siberian elm in the northeast corner of the property, two are multi-stem willows along the southwest edge of the site and forty-nine are cottonwoods along the floodplain of Coal Creek. There is one Russian olive near tree # 50 which was not tallied or assessed as this species is on the Colorado Noxious Plant List. None of the trees rated higher than Fair with condition ratings ranging from 21% to 50% with most in the Poor category due to many factors.

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CONSULTING ARBORISTS**

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Most of the trees are very large, overmature cottonwoods with significant decline and large dead and failing branches. Many have serious structural defects such as basal and trunk cavities, co-dominant trunks, dead scaffold branches, decay and strong leans. Several trees have experienced soil or root failure and now lie on the ground often with broken trunks or crowns. The abundance of dead and failed trees and the extent of crown dieback and large dead branches throughout the canopies indicate a prolonged period of stress; likely from drought and altered site conditions as the site is not currently irrigated for farming.

The poor overall condition of the trees and the likelihood of more large branch, and potential whole tree failures, indicates a need for individual tree risk assessments for high risk trees in areas with anticipated construction activities, invited public access or where potential failures could impact structures, private property or people. Tree risk assessments and any recommended risk mitigation pruning and/or tree removal will add substantial costs to developing the site depending on the scope of work. Tree risk mitigation strategies will reduce but not eliminate the risk posed by these trees while seeking to retain many of the environmental and wildlife values they provide. The costs for tree risk assessment and mitigation will subtract from the estimated value for each high risk tree. Evaluating tree risk and/or providing estimates for pruning or tree removal is beyond the scope of this assessment.

Along with the risk associated with large, overmature cottonwoods come a variety of valuable environmental benefits: soil stabilization, carbon sequestration, oxygen production, aesthetics and wildlife habitat. I observed many species and signs of wildlife in this cottonwood forest including deer, raccoons, beaver, prairie dogs, coyote, raptors as well as cavity nesting and migratory songbirds. The natural condition of the trees in the riparian area and floodplain along Coal Creek are key elements in preserving habitat.

Based on your lotting concept and the floodplain location, it appears only fifteen trees (12 cottonwood, two willow and 1 Siberian elm) are likely impacted by development activities depending on final lotting, grading and the park and trail development limits. With strategic design and a comprehensive tree protection plan we can preserve most trees on the site.

I verified in communication with Aurora Forestry last week that mitigation inches are calculated by multiplying the tree diameters by the condition rating percentage (diameter \* condition %). The mitigation inches and associated mitigation values for trees likely to be impacted by development are presented in **Table 1: Tree Mitigation Table**.

Re: Waterstone Filing # 4: Tree Assessment

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**Table 1: Tree Mitigation Table (trees most likely impacted by development)**

Tree #	Species	Size	Condition	Mitigation		Mitigation Value \$	Comments
				%	Inches		
33	Cottonwood	27"	Poor	29%	8"	\$ 11,100	Basal cavity, dead top, failing
34	Cottonwood	40"	Poor	29%	12"	\$ 16,400	Root failure, decaying trunk
38	Cottonwood	56"	Fair	44%	25"	\$ 33,200	Co-dom stems, Failed branch
39	Cottonwood	39"	Poor	38%	15"	\$ 18,200	Lean. Decay, broken scaffold
40	Cottonwood	51"	Fair	46%	23"	\$ 31,400	Co-dom @ 8'. 6" deadwood
41	Cottonwood	36"	Poor	33%	12"	\$ 13,900	Failed, on the ground. Cavity.
42	Cottonwood	57"	Poor	38%	22"	\$ 29,200	Failed lead. Basal cavity
43	Cottonwood	49"	Poor	29%	14"	\$ 18,900	75% dead. Bark sloughing
44	Cottonwood	67"	Poor	27%	18"	\$ 24,000	Top broken out. >75% dead.
47	Willow	24"	Fair	42%	10"	\$ 8,300	3-stem: 1 failed. 20% dieback
48	Cottonwood	8.5"	Fair	42%	4"	\$ 1,040	Weak, 4-stem @ base. Lean.
49	Willow	15"	Poor	40%	6"	\$ 3,080	Failed stem. weak, decay
50	Cottonwood	22"	Fair	50%	11"	\$ 8,300	Strong trunk, 30% dieback
51	Cottonwood	48"	Poor	25%	12"	\$ 15,900	Failed tree hollow, 1 live stem
52	Siberian elm	5"	Poor	38%	2"	\$ 300	Co-dom @ 3'. root damage

**Total Mitigation Inches      194"      \$233,220      Mitigation Value**

Drought conditions, lack of field irrigation, age, tree structure and the extent of branch and tree failures all contribute to the very low number of 'good health condition' trees on this site. If you need additional information, want to discuss tree risk management or have any questions, feel free to contact me anytime. I look forward to working with your team to preserve trees as you develop the site. The tree locations and the assessment spreadsheet are attached separately. Thank you for contacting Colorado Tree Consultants to assist with your project.

Sincerely,

*Scott Grimes*

ISA Certified Arborist, Municipal Specialist

ISA Tree Risk Assessment Qualified

ASCA Consulting Arborist

## **Assumptions and Limiting Conditions**

1. Any legal description provided to the consultant/appraiser is assumed correct. Any titles and ownerships to any property are assumed good and marketable.
2. Care was taken to obtain all information from reliable sources. All data was verified insofar as possible; however the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.
3. The consultant/appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described and agreed to in a new fee schedule and contract of engagement.
4. Loss or alteration of any part of this report invalidates the entire report.
5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other person than the person to whom it is addressed, without the prior, written consent of the consultant/appraiser.
6. This report and values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
7. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
8. Unless otherwise expressed: 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 inspection of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees or property in question may not arise in the future.

## **Certification of Performance**

I, Scott Grimes, certify that:

- I personally inspected the trees and the property referred to in this report and have stated my findings accurately.
- I have no current or prospective interest in the vegetation or the property that is the subject of the report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions, and conclusions were developed and this report prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated in the report.
- My 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.

I further certify I am a member in good standing of the American Society of Consulting Arborists and I am an International Society of Arboriculture Certified Arborist and Qualified Tree Risk Assessor. I have practiced arboriculture and the care and study of trees for over 35 years.

*Scott Grimes*

March 1, 2021



**Waterstone Filing # 4**

Inches DBH				Location					Estimated value	Issues and concerns
Tree #	Size	Species	Sp %	Condition	Co %	Lo %	Mitigation inches			
1	34	Plains cottonwood	60	Fair	50	53	17	\$ 19,700	Small trunk cavity @ 10'. Wetwood, old broken branches, > 15% crown dieback.	
2	36	Plains cottonwood	60	Fair	44	53	16	\$ 18,600	Co-dom stems @ 6'. Low vigor, wetwood, dead to 6" diameter branches, > 25% crown dieback.	
3	36	Plains cottonwood	60	Fair	40	53	14	\$ 16,900	Leaning. Wire fence attached to trunk, small deadwood <4" diam. Large cavity @ 10', decay, weak union. Habitat tree.	
4	34	Plains cottonwood	60	Fair	48	53	16	\$ 18,400	Co-dom stems @ 12'. Wetwood, failed branches to 6" diam. > 15% crown dieback.	
5	25	Plains cottonwood	60	Fair	42	53	11	\$ 9,000	Leaning. Suppressed tree. Decay pockets in scaffold branches. > 20% crown dieback.	
6	45	Plains cottonwood	60	Poor	35	53	16	\$ 20,500	Significant lean, failing tree. Large basal cavity, dead branches to 8" diam., many large branch failures.	
7	58	Plains cottonwood	60	Fair	44	53	26	\$ 34,200	Co-dom stems @ 12'. Solid trunk, wetwood, decay in scaffold branches, > 30% crown dieback.	
8	40	Plains cottonwood	60	Poor	40	53	16	\$ 19,900	Dead scaffold branch 18" diameter. Declining tree, > 50% dead crown.	
9	29	Plains cottonwood	60	Poor	33	53	10	\$ 9,500	Kinked trunk @ 5'. Leaning. . 50% dead, heavy crown dieback, low branching, declining tree.	
10	28	Plains cottonwood	60	Poor	31	53	9	\$ 8,300	Leaning. > 75% dead. Many dead branches > 12" diameter.	
11	32	Plains cottonwood	60	Poor	31	53	10	\$ 10,600	Large basal cavity, den in roots. Large dead leader and scaffold branches. Significant crown dieback.	
12	28	Plains cottonwood	60	Poor	29	53	8	\$ 7,800	Significant lean, decay in trunk. Cavity at scaffold branch union. > 50% crown dieback.	
13	26	Plains cottonwood	60	Poor	35	53	9	\$ 8,100	Intertwined crown with and supporting Tree # 14. trunk cavity at 6'. > 50% crown dieback. Large dead branches.	
14	28	Plains cottonwood	60	Poor	35	53	10	\$ 9,400	Intertwined crown and leaning onto Tree # 13. Failing tree. Decay at scaffold branch failure 14" diameter.	
15	33	Plains cottonwood	60	Poor	38	53	13	\$ 13,900	Burl on lower trunk. Wetwood, many large branch failures, > 30% crown dieback.	
16	22	Plains cottonwood	60	Poor	21	53	5	\$ 3,480	Split, failing and decayed trunk. Root decay. > 75% dead.	
17	30	Plains cottonwood	60	Poor	35	53	11	\$ 10,800	Bent trunk. Failed scaffold branch 16" diameter. > 30% crown dieback. Weak structure in mid-crown.	
18	31	Plains cottonwood	60	Poor	29	53	9	\$ 9,300	Dead scaffold branch 16" diameter. Declining tree, > 50% dead crown. Few buds.	
19	27	Plains cottonwood	60	Poor	31	53	8	\$ 7,700	Failing trunk, heavy lean, large cavity in trunk, large hollow. Significant decay and crown dieback.	
20	29	Plains cottonwood	60	Fair	42	53	12	\$ 12,100	Straight trunk, strong scaffold branch unions. Dead branches to 12" diameter. Nest in top: Habitat tree.	
21	27	Plains cottonwood	60	Poor	40	53	11	\$ 10,000	Crooked trunk, leaning tree. Dead branches to 8" diameter. Wetwood, > 50% crown dieback.	
22	23	Plains cottonwood	60	Poor	33	53	8	\$ 6,000	Trunk cavity @ 8'. Weak structure, > 50% dead. Few buds.	
23	51	Plains cottonwood	60	Poor	33	53	17	\$ 22,500	Split, co-dominant trunks @ 3'. Extensive decay and failure occurring. > 30% crown dieback, buds swelling.	
24	30	Plains cottonwood	60	Poor	35	53	11	\$ 10,800	Large basal cavity. Significant decay in lower trunk. Dead branches to 8" in crown with > 50% crown dieback.	
25	36	Plains cottonwood	60	Fair	46	53	17	\$ 19,400	Solid trunk, strong scaffold branches. Wetwood, dead branches to 6" diameter. Wetwood, > 30% crown dieback.	
26	36	Plains cottonwood	60	Poor	33	53	12	\$ 13,900	strong lean, dead leader. Wetwood and decay. > 60% dead tree.	
27	24	Plains cottonwood	60	Poor	29	53	7	\$ 5,700	Trunk scar, decaying trunk, wetwood. Lost top, > 75% dead.	

28	23	Plains cottonwood	60	Poor	33	53	8	\$ 6,000	Weak trunk, wetwood and decay. > 60% crown dieback. Dead branches to 6" diameter.
29	53	Plains cottonwood	60	Poor	36	53	19	\$ 25,700	Solid trunk, strong scaffolds, dead branches to 12" diameter. 50% crown dieback.

#### Waterstone Filing # 4

Inches DBH									
Tree #	Size	Species	Sp %	Condition	Co %	Lo %	Mitigation inches	Estimated value	Issues and concerns
30	34	Plains cottonwood	60	Poor	29	53	10	\$ 11,100	Bark sloughing off trunk, Failed scaffold branch 16" diameter. Some lean, > 75% dead.
31	37	Plains cottonwood	60	Poor	29	53	11	\$ 12,800	Bulging trunk, strong lean with a kink. >75% dead. Few buds.
32	44	Plains cottonwood	60	Poor	29	53	13	\$ 21,600	Failed tree, laying on the ground: root failure. Decaying trunk, some broken branches. many live branches & good buds.
33	27	Plains cottonwood	60	Poor	29	53	8	\$ 7,200	Basal cavity, wire around trunk, failing tree, dead top.
34	40	Plains cottonwood	60	Poor	29	53	12	\$ 16,400	Failed tree, laying on the ground: root failure. Decaying trunk, some broken branches. many live branches & good buds.
35	11	Plains cottonwood	60	Poor	36	53	4	\$ 1,490	Leaning, suppressed, co-dom stems @ 6'. > 50% dieback, few buds.
36	32	Plains cottonwood	60	Poor	29	53	9	\$ 9,900	Failed tree, laying on the ground: root failure. Decaying trunk, dead top. Few buds.
37	51	Plains cottonwood	60	Fair	50	53	26	\$ 34,200	Co-dom stems @ 8'. Bulging trunk, dead branches to 10" diameter, good buds and vigor. Overhead utilities.
38	56	Plains cottonwood	60	Fair	44	53	25	\$ 33,200	Co-dom stems @ 6'. Failed scaffold branch > 12" diam. Decay in failed union. Small branches and buds look good.
39	39	Plains cottonwood	60	Poor	38	53	15	\$ 18,200	Leaning. Trunk scar, broken scaffold branches, decay. > 30% crown dieback.
40	51	Plains cottonwood	60	Fair	46	53	23	\$ 31,400	Co-dom stems @ 8, Solid trunk. Dead branches to 6". Small branches and buds look good. Tree tag 0030185
41	36	Plains cottonwood	60	Poor	33	53	12	\$ 13,900	Failed tree laying on the ground. Den in trunk cavity, many live branches and good buds. Habitat tree.
42	57	Plains cottonwood	60	Poor	38	53	22	\$ 29,200	Failed leader. Basal cavity. Decay in trunk and some scaffold branches. > 35% dieback.
43	49	Plains cottonwood	60	Poor	29	53	14	\$ 18,900	Bark sloughing, dead top. > 75% dead. Many failed branches. Few buds
44	67	Plains cottonwood	60	Poor	27	53	18	\$ 24,000	Top broken out. Dead scaffold branches, 90% dead tree.
45	48	Plains cottonwood	60	Poor	21	53	10	\$ 13,400	Roots failing, trunk broken and failed. 1 live branch. > 90% dead.
46	20	Plains cottonwood	60	Fair	50	53	10	\$ 6,800	Trunk straight and strong. 1 co-dom scaffold branch. < 15% crown dieback.
47	24	Multi stem Willow sp.	60	Fair	42	53	10	\$ 8,300	1 stem failed @ 5'. 3 stems total radiating from center. > 20% crown dieback. Good buds.
48	8.5	Multi stem Cottonwood	60	Fair	42	53	4	\$ 1,040	Multi-stem (4) at base. Crowded crown, leans away from center. Good buds, weak structure.
49	15	Multi stem Willow sp.	60	Poor	40	53	6	\$ 3,080	Failed 14" diameter stem. Multi-stem (4) weak structure. Some decay. Many small twigs w/good buds.
50	22	Plains cottonwood	60	Fair	50	53	11	\$ 8,300	Strong trunk. Crowded crown < 30% dieback. Some wetwood and possible cytospora canker.
51	48	Plains cottonwood	60	Poor	25	53	12	\$ 15,900	Failed tree. 1 live leader. Hollow trunk. Some live branches and buds.
52	5	Siberian elm	55	Poor	38	53	2	\$ 300	Co-dom stems @ 4'. Weak structure, crowded canopy. Root damage from equipment of grazing.

<b>Total</b>	<b>Total</b>
<b>592</b>	<b>\$ 691,870</b>

	Mitigation inches	Estimated value
Highlighted trees are the fifteen trees most likely to be impacted by development.		







# WATERSTONE FILING N Tree Inventory



0' 100'  
SCALE 1" = 100'



**PLANWEST**

787 Santa Fe Drive  
Denver, CO 80204  
303-741-1411  
planwest.com

PLANNING  
SITE DESIGN  
ENTITLEMENTS  
LANDSCAPE ARCHITECTURE

Job No:  
Date:

SHEET: (