Memorandum

County of Placer
Planning Department
ATTN: Lisa Carnahan
3091 County Center Drive
Auburn, CA 95603

Date: 10/24/2015

Subject: Newcastle Fire Station – Arboricultural Evaluation of Significant Trees Scheduled for Removal, Town of Newcastle, Placer County, California

Site Information

The Newcastle Fire Station Project (Project) site is located near the intersection of Old State Highway and Newcastle Road in the Town of Newcastle, Placer County, California. The Project property encompasses approximately 0.5 acres of gently to moderately sloping terrain. The proposed Project will include the development of a new fire station that will service the Town of Newcastle, and associated improvements.

Assignment

Prior to development, some vegetative clearing of the site will be necessary. As such, the assistance of a certified arborist (Arborist) was needed to evaluate the existing health and condition of the trees of significance that are scheduled for removal. The primary purpose of this Memorandum is to assess the current health and condition of the subject trees.

A tree is defined by the County of Placer (County) as having a diameter at breast height (DBH) of greater than six inches, or an aggregate DBH greater than 10 inches. A previous Arboricultural Memorandum dated 11/18/13 identified 27 trees of significance on the site. Of these 27 trees of significance, 18 are currently scheduled for removal.

For purposes of this Memorandum, trees of significance that are currently scheduled for removal were evaluated by the Arborist on 10/8/15 and 10/9/15. The Arborist evaluated the existing health and condition of 18 trees of significance.

Summary of Findings

Four tree species were observed and included in the health assessment; Almond, Cottonwood, Live Oak, and Willow. During the site visit the Arborist made the following observations:

- Trees numbered 8, 9, 10, 13, 15, 17, 18, 19, and 20 were found to be generally healthy. Some of these trees had minor health issues but health was not considered poor overall.

- Trees numbered 7, 11, 12, 14, 16, 22, 23, 24 and 25 were found to be generally poor in health and, in some cases, dying or dead.

Observations, Conclusions, and Professional Recommendations

Tree #7 – Unhealthy and recommended for removal based on poor structure and health. This tree has a severe lean at approximately five feet vertically along the main stem, as well as a divided main stem at approximately four feet vertically. Numerous sprouts are located along the bent main stem and will cause structural issues in the future. It is possible the tree is in decline, but this could also be due to the onset of the dormancy period of the tree.

Tree #11 – Unhealthy and recommended for removal based on poor health and structure. This tree is overly mature. Overly mature trees can be a severe threat to safety of civilians and property due to their large size and tendency to fail. Evidence of topping or main stem failure can be seen at approximately 30 feet vertically along the main stem. This past injury has resulted in severe structural issues. During the site visit conducted on 10/9/15, the Arborist observed a very large branch failure that had occurred somewhat recently. It is unknown what caused this branch failure, however, it is likely to be repeated. In addition, the tree is located very close to existing overhead electrical lines. In the event that the tree or a branch failed there is a potential for tree material to come into contact with charged electrical lines, resulting in numerous potentially hazardous situations. This tree could be a significant safety concern if not removed.

Tree #12 – Unhealthy and recommended for removal based on poor structure. The structural integrity of this tree will be compromised in the future, due to poor growth form from the past. The attachment of a sprout from the past to the main stem will cause included bark to grow within the main stem of the tree. Included bark causes a weak attachment and is more likely fail than a main stem or branch that does not have included bark. In addition, the main stem appears to have been broken in the past, or possibly has grown improperly, as there is a lean and main stem swell at approximately two feet vertically.

Tree #14 – Unhealthy and recommended for removal based on poor structure and overall poor health. This tree has large amounts of dead wood in the canopy which is a sign of decline. The tree also has a significant bend in the main stem at approximately six feet vertically. A very narrow branch attachment has formed at approximately two feet vertically along the main stem, which is likely to be problematic in the future. A greater possibility of main stem failure due to included bark exists.

Tree #16 – Unhealthy and recommended for removal based on poor structure at base and possible disease. This tree has two main stems, both of which are recommended for removal. The likelihood of problems occurring in only one stem is low. The main stem of the tree is very knobby, misshaped, and has cankers present. This may be due to general poor growth form and/or genetics, or could indicate the presence of a disease or pest. In either situation, the deformation at such a critical structural position on the tree could greatly compromise future stability and is likely to result in overall tree failure. A history of branch failure can be seen at multiple locations along the main stem. These branch failures have resulted in continued poor form. In addition, some dead wood and branch-tip dieback may be observed in the canopy.

Tree #22 – Unhealthy and recommended for removal. This tree is in decline and nearly dead. Large portions of the main stem of the tree are no longer living. The only remaining foliage would result in structural issues in the future. There is evidence that historically this tree has failed, and the likelihood that it will happen again is high. The decline in foliage is not believed to be from the onset of the dormancy period. There are cankers at approximately 1-3 feet on the main stem of the tree and it will threaten the structural integrity of the tree unless removed. The tree carries the majority of the weight in the canopy and the base of the tree is not likely to be able to support the uneven weight distribution for a significant amount of time.

Tree #23 – Unhealthy and recommended for removal due to severe decline. This tree is severely declining and almost dead. The only remaining foliage would result in structural issues in the

future. There is evidence that historically this tree has failed, and the likelihood that it will happen again is high. The decline in foliage is not believed to be from the onset of the dormancy period.

Tree #24 – Unhealthy and recommended for removal based on very poor structure. This tree has a severe lean that may lead to structural failures in the future. The main stem is nearly horizontal to the ground and the tree appears to be suppressed by surrounding vegetation. Adventitious sprouts on the stem are not structurally sound and will cause structural issues in the future, if the tree survives. The tree shows signs of decline that are not believed to be related to the onset of the dormancy period.

Tree #25 - Recommended for removal based on very poor health and existing failure. This tree is severely declining and almost dead. The only remaining foliage is also in decline. Very large fallen branch observed during the site visit conducted on 10/9/15 (approximately 40% of the tree). It is not known when or why this branch failed but it is likely to repeat in the future if the tree is not removed. The tree does not show any current signs of life.

Closing Comments

Please see the attached Exhibit (Attachment A) for more specific information pertaining to approximate tree location. Additional data is available for review by the County, if necessary.

Species identification, DBH measurements, and approximate field locations of the significant trees are based on the Arboricultural Memorandum dated 11/30/13. Environmental conditions are subject to change due to seasonality, weather, rainfall, and other factors. The site was evaluated to the best of the Arborists' ability and does not attempt to predict future circumstances. Roseville Design Group assumes no liability for circumstances involving trees.

Please don't hesitate to contact me if you require further information, or have any questions or concerns.

Respectfully,

Heather D. Hansen
ISA Certified Arborist WE-7018A

Attachments:
Attachment A: Tree Location Exhibit
Attachment B: Calculations

Attachment A:
Tree Location Exhibit

Newcastle Fire Station

Tree Location Exhibit

Old State Highway and Newcastle Road
County of Placer, California

24 October 2015
Certified Arborist WE-7018A

Tree Data:

Tree Number / Tree Species / Diameter at Breast Height (DBH)

1 / Almond / 53.1" (Aggregate)
2 / Valley Oak / 16.0"
3 / Almond / 12.3" (Aggregate)
4 / Almond / 31.0" (Aggregate)
5 / Valley Oak / 8.7"
6 / Valley Oak / 9.8"
7 / Almond / 7.0"
8 / Live Oak / 32.9" (Aggregate)
9 / Almond / 17.9" (Aggregate)
10 / Almond / 26.6" (Aggregate)
11 / Cottonwood / 78.0"*
12 / Live Oak / 9.8"
13 / Cottonwood / 28.1"
14 / Almond / 8.5"
15 / Almond / 12.4"
16 / Cottonwood / 49.9" (Aggregate)
17 / Live Oak / 8.9"
18 / Live Oak / 6.7"
19 / Live Oak / 44.2" (Aggregate)
20 / Willow / 6.8"
21 / Almond / 15.5" (Aggregate)
22 / Willow / 22.7" (Aggregate)
23 / Willow / 27.6" (Aggregate)
24 / Live Oak / 6.4"
25 / Cottonwood / 83.0" (Aggregate)
26 / Almond / 22.9" (Aggregate)
27 / Live Oak / 10.3" (Aggregate)

*Denotes trees that were nearly inaccessible - DBH measurement may be less accurate than more easily accessible trees, due to thick vegetation cover surrounding the base of the main stem.

Legend:
- Approximate Location of Tree of Significance
- Approximate Location of Tree of Significance Scheduled for Removal
- ## Tree Number
- Approximate Project Boundary

Attachment B:
Calculations

Cost Estimate Per Species

Tree Number	Species	DBH*	Estimated Value**	Conclusion***
7	Almond	7.0	$ 1,575.00	Unhealthy
9	Almond	39.0	$ 8,775.00	Healthy
10	Almond	26.6	$ 5,985.00	Healthy
14	Almond	8.5	$ 1,912.50	Unhealthy
15	Almond	12.4	$ 2,790.00	Healthy

Total DBH (Almonds):	93.5	inches
Total Healthy DBH (Almonds):	78.0	inches
Approximate Cost of 15-gallon Replacement (Almond):	$ 75.00	each
Approximate Replacement Cost for Total DBH:	$ 21,037.50	
Approximate Replacement Cost for Healthy DBH:	$ 17,550.00	

Tree Number	Species	DBH*	Estimated Value**	Conclusion***
11	Cottonwood	78.0	$ 13,630.50	Unhealthy
13	Cottonwood	28.1	$ 4,910.48	Healthy
16	Cottonwood	49.9	$ 8,720.03	Unhealthy
25	Cottonwood	83.0	$ 14,504.25	Unhealthy

Total DBH (Cottonwood):	239.0	inches
Total Healthy DBH (Cottonwood):	28.1	inches
Approximate Cost of 15-gallon Replacement (Cottonwood):	$ 58.25	each
Approximate Replacement Cost for Total DBH:	$ 41,765.25	
Approximate Replacement Cost for Healthy DBH:	$ 4,910.48	

Tree Number	Species	DBH*	Estimated Value**	Conclusion***
8	Live Oak	32.9	$ 6,415.50	Healthy
12	Live Oak	9.8	$ 1,911.00	Unhealthy
17	Live Oak	8.9	$ 1,735.50	Healthy
18	Live Oak	6.7	$ 1,306.50	Healthy
19	Live Oak	44.2	$ 8,619.00	Healthy
24	Live Oak	6.4	$ 1,248.00	Unhealthy

Total DBH (Live Oak):	108.9	inches
Total Healthy DBH (Live Oak):	92.7	inches
Approximate Cost of 15-gallon Replacement (Live Oak):	$ 65.00	each
Approximate Replacement Cost for Total DBH:	$ 21,235.50	
Approximate Replacement Cost for Healthy DBH:	$ 18,076.50	

Tree Number	Species	DBH*	Estimated Value**	Conclusion***
20	Willow	6.8	$ 1,834.98	Healthy
22	Willow	22.7	$ 6,125.60	Unhealthy
23	Willow	27.6	$ 6,210.00	Unhealthy

Total DBH (Willow):	57.1	inches
Total Healthy DBH (Willow):	6.8	inches
Approximate Cost of 15-gallon Replacement (Willow):	$ 89.95	each
Approximate Replacement Cost for Total DBH:	$ 15,408.44	
Approximate Replacement Cost for Healthy DBH:	$ 1,834.98	

Total Replacement Cost For All Healthy Trees: $ 42,371.96

Total Replacement Cost For All Healthy Trees Not Including Almonds: $ 24,821.96

*Species identification, measurements, and approximate field locations are based on the Arboricultural Memorandum dated 11/30/13. Environmental conditions are subject to change.

**Estimated Value is based on the approximate replacement cost of the tree. Per the County of Placer, three 15-gallon trees are equivalent to one inch DBH.

***Conclusions and professional recommendations provided by the Arborist is independent of the estimated value for individual trees. This information is presented only for convenience purposes.