

Town of Blowing Rock

Request for Council Action

FROM: Jennifer Brown, Director of Parks & Recreation
SUBJECT: Memorial Park Tree Design/Plan
TO: Council
DATE: December 12, 2017
REQUESTED BY: Blowing Rock Appearance Advisory Commission

Public Hearing Yes No Not required NA
Properly Advertised Yes No Not required NA

BACKGROUND:

In March 2016 Eric Muecke with the NC Forest Service did a site visit and inspection of the trees in Memorial Park and provided the Town with a tree report regarding the declining conditions of 9 trees in Memorial Park that needed to be addressed. In June 2017 Town Council requested that the NC Forestry Service come back and re-evaluate the trees and their initial report. In September of 2017 Nancy Stairs, who is the Urban Forestry Program Coordinator with the NC Forestry Service, a certified arborist, and is qualified through International Society of Arboriculture as a tree risk assessor, came and held 4 sessions to have a walkthrough and show the results of their re-evaluation and the results of their resistograph on the trees. After their re-evaluation, it was determined that we need to address three more trees from the original evaluation in 2016. It is recommended to remove at least nine of the twelve trees, and we could potentially remove dead wood from the other three to try to keep them a little longer; however, they will need to be removed in the near future.

Town Council decided in the November 2017 Town Council meeting to have Parks & Recreation staff, Chris Pate (a landscape and irrigation contractor with a degree in agronomy), and Ricky Hudson, work with Nancy Stairs and create a design/plan for Memorial Park and tree replacement. They also requested that BRAAC be involved in the process. BRAAC met with Town Staff and Nancy Stairs on Tuesday, December 5, 2017 and they reviewed the proposed design and potential tree replacements. It was determined by BRAAC that by trying to keep a couple of trees, the cost would go up significantly when it came time to remove them because new trees would be planted around them, which would make it more difficult to take them down without damaging the new trees. It would also cost more in repairing sod, mulch etc. They voted unanimously to approve Town staff's design/plan, to remove all the trees from the NC Forestry's 2017 tree report, and to allow Town staff to choose the trees that will replace them, selected from a list provided by Nancy Stairs as being the most suitable replacements for the Park.

ATTACHMENTS:

1. October 2017 – Updated Memorial Park Tree Report
2. BRAAC December Minutes (DRAFT)

STAFF RECOMMENDATION:

Recommend removing the twelve trees that are in the NC Forestry Service's 2017 Tree Report and replant twelve trees in staff's new design.

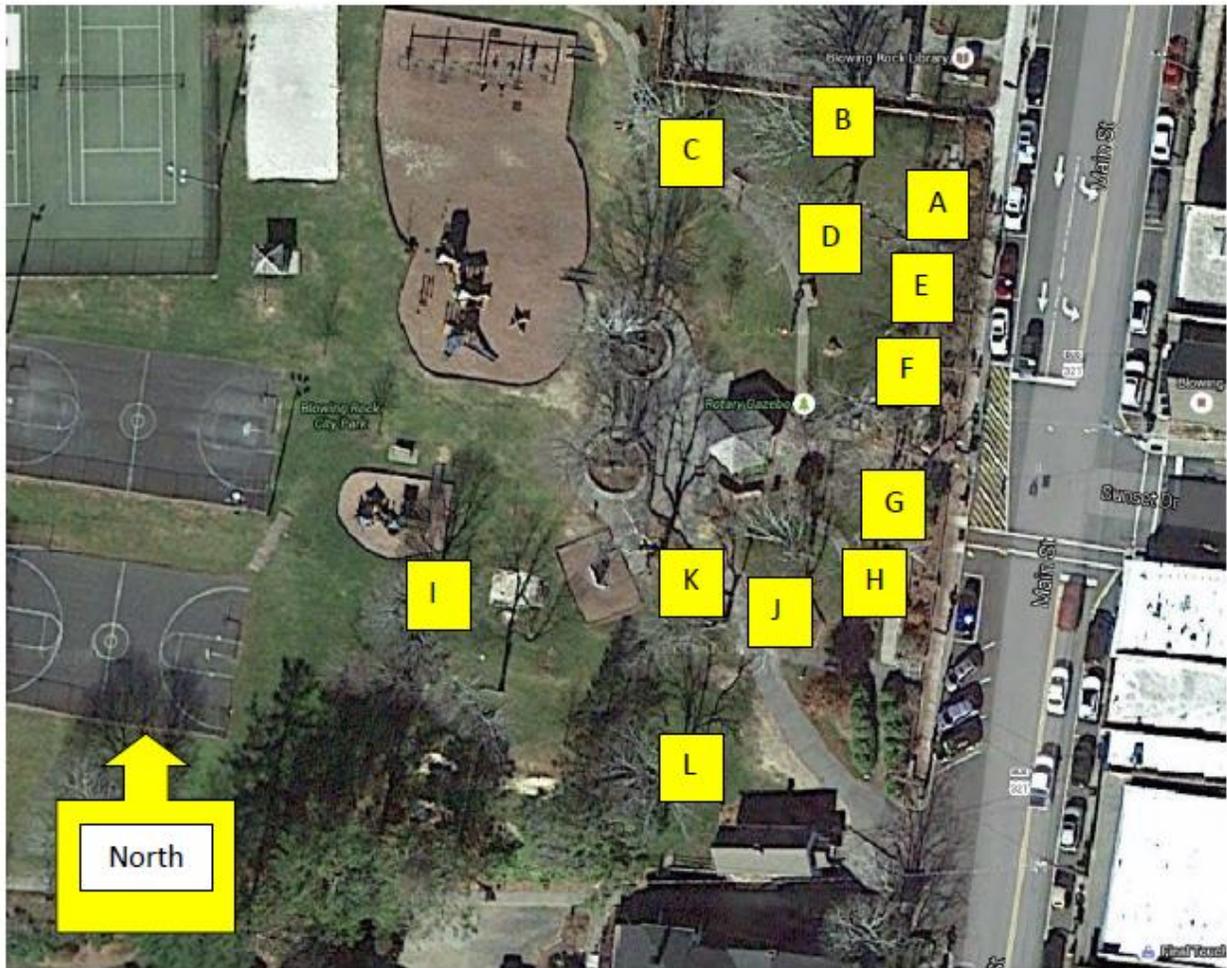
BLOWING ROCK

MEMORIAL PARK

NCFS Review and Resistograph

Visit: 18 September 2017

Submitted: 13 October 2017



NOTE: This re-inspection was done to assess any changes to the trees using a resistograph in several places, and also observing annual fruiting bodies on several trees. This re-inspection did not assess all trees with the resistograph, nor were additional annual fruiting bodies observed on 18 September 2017. Trenching for the installation of electrical boxes for tree lights was also noted. The recommendations are made with the concerns of the municipality in mind, as well potential liability issues. Observations and recommendations from September 2017 are in red.

Tree A is a 33" dbh (diameter at breast height) red maple. The tree has root decay and a hollow on the west side. The canopy is unbalanced with the weight of the crown toward the street. The tree has co-dominant stems (stems of equal size originating from the same area). Due to branch dieback, it has been tip pruned in the past. Tip pruning is the removal of dead tips back to a living side branch and results in a zig-zag pattern. It is in poor condition.

Main concern – 24" dead lead on the West side of the tree. Risk = Moderate

Main concern – Inonotus fungus on trunk. Risk = Low

Mitigation 1 – Prune out the dead lead. The residual risk would be Low. The tree will continue to decline structurally due to the fungus, increasing risk, and removal will be required in the near future.

Mitigation 2 – Remove the tree. The residual risk would be Low.

Observations:

- 1) Trenching for electrical connections installed on west side of tree – cutting of roots both reduces availability of nutrients to tree and can decrease structural stability.
- 2) Several fruiting bodies were noted at the base and on the lower trunk – Inonotus is a serious decay fungi.
- 3) Resistograph readings indicate some wound wood at the base of the tree towards the street but no sound wood at all at the back of the tree.

Recommendation:

Removal of the tree due to loss of roots and internal decay evident.

Tree B is a 34" red maple. It has a dead lead full of hollows from woodpecker activity. It is in fair to poor condition. The dead lead should be removed.

Main concern – 8" dead lead with woodpecker holes, and other deadwood. Risk = Low

Mitigation – Have deadwood pruned out of the tree. Monitor and maintain until removal is necessary. Residual risk would be Low.

Observations:

- 1) The tree is declining and will require removal in the future crown as dieback continues and as more deadwood requires removal.
- 2) There is also an old break with decay towards the town hall building. It is not an issue for the building but is for picnickers or other public users.
- 3) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

As recommended previously, remove deadwood. Tree should be inspected and pruned as needed in the spring, prior to seasonal public use. Deadwood, even what seems small in size, can cause damage or injury when falling from a height. Monitor.

Tree C is a 35" red maple with a trunk cavity and root dieback. The tree also has crown decline. It is in poor condition due to the structural decay.

Main concern – Deadwood in the crown and branches. Risk = Moderate

Main concern – Decay in the trunk. Risk = Low

Mitigation 1 – Have deadwood pruned out of the tree. Monitor and maintain until removal is necessary. Residual risk would be Low.

Mitigation 2 – Remove the tree. The residual risk would be Low.

Observations:

- 1) The crown of the tree appears to be in better condition than some of the trees, but it is also declining.
- 2) The visible decay at the base of the tree and in the center of the tree appears to meet, through the middle of the trunk. Resistograph readings confirm this observation.
- 3) Annual conks are visible in the decayed seam.

Recommendation:

Based on the location of the tree, close to the paved walkway, and the extent of decay, this tree should be removed. However, the Town may choose to hire a certified arborist who is experienced in cabling and bracing to inspect the tree. If the arborist finds that there is sufficient sound wood on the sides of the tree, that would allow several brace screws to be installed, and the tree were monitored and inspected yearly to assess the advancement of decay and crown dieback; removal could be postponed.

Tree D is a 29" red maple with girdling roots and some root damage. It is in fair to poor condition (and possibly the best tree in this evaluation).

Main concern – Girdling root at the base of the tree. Risk = Low

Mitigation – Monitor and maintain the tree until crown decline and deadwood increases. Then, removal will be necessary. Residual risk would be Low.

Observations:

- 1) The tree appears to be in better condition than the surrounding trees at this time.
- 2) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.
- 3) Trenching for electrical connections installed on east side of tree – cutting of roots both reduces availability of nutrients to tree and can decrease structural stability. This is a concern since this tree retains a wide crown and a decent leaf canopy. The loss of roots will speed up its decline.

Recommendation:

Monitor this tree for excess movement under wind conditions due to the loss of roots on its east side. Remove deadwood and any hangers. Monitor.

Tree E is 20" red maple with an unbalanced crown with all the weight going toward the benches/road. There is damage and decay at the base of the tree. The unbalanced crown is creating a load at an awkward bend. The bend in the tree has internal decay issues from previous pruning. The tree is in fair to poor condition.

Main concern – End weight of branches could cause failure if extra load (wind, rain, snow or ice) is applied to the branches. Risk = Moderate

Main concern – Decay in the trunk at the point where all the load of the canopy is focused could lead to failure. Risk = Moderate

Mitigation 1 – Crown reduction pruning could reduce the likelihood of branch failure and the stress on the trunk decay. Residual risk would be Low.

Mitigation 2 – Remove the tree. The residual risk would be low.

Observations:

- 1) Trenching for electrical connections installed on west side of tree – cutting of roots both reduces availability of nutrients to tree and can decrease structural stability.
- 2) The tree is not particularly large but the weight of what remains of the crown is unbalanced and over the sidewalk and street.
- 3) Decay at the base and at the point where the load of the crown bends creates 2 weak points in the tree.
- 4) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

While it is possible to reduce the weight of the crown over the street, there would be little remaining crown left – both from an aesthetic perspective and from a growth sustaining perspective. And the weak points in the trunk and base would remain. Decline would be expected to be even more rapid due to the loss of the roots from trenching. Removal is recommended.

Tree F is a 28" red maple. It exhibits stub decay, co-dominant stems and decay in the co-dominant attachment area. It is in fair to poor condition.

Main concern – There is a large dead stub and significant deadwood. Risk = Moderate

Main concern – The trunk splits into 2 co-dominant stems. Risk = Low

Mitigation – Prune for deadwood and crown reduction. Cable and Brace the tree until it declines to the point where removal is necessary. Residual risk would be Low.

Observations:

- 1) Trenching for electrical connections installed on west side of tree – cutting of roots both reduces availability of nutrients to tree and can decrease structural stability.
- 2) There are multiple cavities throughout this tree, including where at the attachment of the codominant stems.
- 3) The tree is declining.

- 4) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

The previous report suggested cabling and bracing. This should be assessed by a certified arborist experienced with installation, monitoring and upkeep of these mitigation measures. They do not solve the structural issue, but they provide additional support. Consideration of the likelihood of increased decline due to root cutting should be taken into account when determining the most appropriate course of action.

NOTE: In general, it may be better to remove trees A and E and F along the street so that the growing area could be amended/remediated in order to invest in the future streetscape as effectively as possible. For example, adding a low wall (e.g. 2') on the edge of the park and installing electrical connections there; amending the soil and adding soil and a slope into the park and mulching the area along the wall, to protect new tree roots and signal to users to not walk in that area.

Tree G is a 25 inch red maple with girdling roots. It is in fair to poor condition.

Main concern – this tree is in decline and will not return to being a healthy tree. Risk = High

Mitigation – This tree should be a high priority removal. Residual risk would be Low.

Observations:

- 1) The tree is in decline and in poor condition as noted previously.
- 2) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

Removal as previously recommended.

Tree H is a 28" red maple with damage/decay in the trunk and an unbalanced crown. It has previously been cabled. Cables add supplemental strength and require monitoring. If left unchecked, they can fail when the tree structure fails. This tree is in poor condition and should be considered for removal.

Main concern – Deadwood in the crown. Risk = Moderate

Main concern – Decay in the trunk. Risk = Low

Mitigation 1 – Prune out the deadwood. The residual risk would be Low. The tree will continue to decline structurally due to the fungus, increasing risk, and removal will be required in the near future.

Mitigation 2 – Remove the tree. The residual risk would be Low.

Observations:

- 1) *Armillaria* fruiting bodies (also called honey mushroom) was noted at the base of the tree. This is a root rot of serious concern.

- 2) The resistograph was used and found that the wood at the base of the tree was sound, but the buttress roots were not tested, which would be expected to show decay.
- 3) The tree is in poor condition, making no aesthetic contribution and surrounded by utilities.
- 4) The tree shows evidence of carpenter ants, which live in decayed areas of trees, indicating internal decay.

Recommendation:

Removal is recommended as the cost of cabling and bracing, and monitoring, would not be a good use of available funds, besides the fact that the tree has a serious root rot. At removal, efforts should be made to remove as much of the stump as possible as Armillaria will remain on site as long as there is wood available for decay, and is known to remain viable for as long as 50 years after a tree has been removed. The fungus also produces rhizomorphs which are long black stands (and is also known as shoestring root rot) which can spread to adjacent trees (typically in leaf litter or duff).

NOTE: It is suggested that a variety of trees be planted in the park to also avoid root grafting, which can occur among trees of the same species or cultivar. That way, should any future trees become infected with any decay fungi it would not spread through shared contact. The presence of such decay fungi also makes it extremely important that trees be mulched properly and mechanical injury be avoided, to reduce the chance of spreading the diseases.

Tree I is a 25" red maple with trunk decay. It is in poor condition and near the playground. This tree should be considered for removal.

Main concern – this tree is in decline and will not return to being a healthy tree. Risk = High

Mitigation – This tree should be a high priority removal. Residual risk would be Low.

Observations:

- 1) As noted in previous report.
- 2) The high traffic area and proximity to the playground is a concern.
- 3) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

Removal as previously recommended.

Tree J is a maple tree with a central leader that has previously failed.

Main Concern – Failure of the central lead again. Risk = Moderate

Mitigation – Remove central lead. Residual risk would be Low.

Observations:

- 1) The tree is in a landscape bed with a buried base and is declining.

- 2) There appears to be some decay in the upper part of the tree and in the trunk.
- 3) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

Prune deadwood, decay and central leader with prior failure. Monitor.

Tree K is a maple in decline.

Main Concern – Continued decline will require removal. Risk = Low

Mitigation – Remove tree. Residual risk would be Low.

Observations:

- 1) As noted in previous report.
- 2) Some tiny fungi at base in decay pocket, not identified as of immediate concern.
- 3) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

Removal as previously recommended.

Tree L is a cherry tree in decline.

Main Concern – The amount of deadwood. Risk = Moderate

Mitigation – Remove tree. Residual risk would be Low.

Observations:

- 1) As noted in previous report.
- 2) Carpenter ant activity noted.
- 3) Decay at the base of the tree.
- 4) The resistograph was not used on this tree, so no observations about the inside of the tree can be made.

Recommendation:

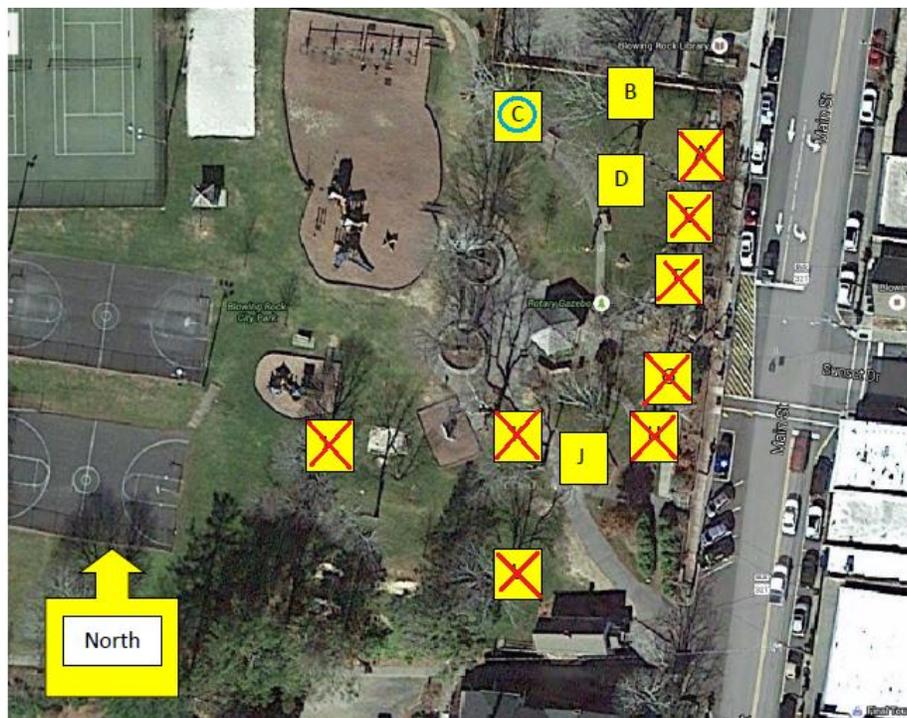
Removal as previously recommended.

NOTE: The trees located inside the stone enclosures have been managed to reduce climbing and foot traffic. This, along with the extensive hardscape installed outside the enclosures, has affected the trees and they also show indications of decline. Deadwood should be pruned and the trees monitored. When it comes time for these trees to be removed, select a suitable species, amend the enclosure to provide root egress into the remaining turf area, maintain mulch and add additional signage to encourage respect.

FINAL COMMENTS:

The number of trees recommended for removal may seem high to the many people who love the park and are concerned about the loss of the trees.

- 1) The love and high use of the area has contributed to the stress and decline of the trees:
 - a. Soil compaction from foot traffic
 - b. Maintenance to maintain and encourage turf
 - c. Trenching for the installation of electrical boxes
 - d. Mowing and weed trimming damage
 - e. Poor maintenance and pruning practices
- 2) The Town has a responsibility to mitigate risk on public property. Tree conditions that indicate risk of failure have been observed and documented, and recommendations made. The Town must act in a responsible manner to address these concerns.
- 3) The opportunity to plan for the future in a comprehensive way is a positive aspect of this painful situation. Tree species selection, site remediation, proper planting and pruning practices, as well as mulching and protection, can be incorporated into the future of Memorial Park.
 - a. Selection of trees from the nursery with good form and carrying out training pruning and proper maintenance will benefit trees and reduce breakage or failure concerns.
 - b. Planting a variety of species with different characteristics: faster growing and slower growing, different responses to stressors like compaction, different growth patterns.
- 4) The opportunity to develop realistic expectations of the park trees and the need for periodic removal and replacement.
 - a. Complete replacement of trees along Main Street and site improvement could allow trees to be onsite in decent condition for a longer period of time. The goal should be 75-100 years.
 - b. With the high use and maintenance needs of the park, trees inside the park area may require replacement 35-50 years, shorter if other damage or disease occurs.



Blowing Rock Appearance Advisory Commission
Minutes
December 4, 2017

BRAAC Members Attending: Curt Andrews, Bo Henderson, Melissa Pickett, and Deborah McDowell

Staff Members: Jennifer Brown, Chris Pate, Ricky Hudson, and Ed Evans

Guests: Charlie Sellers, Albert Yount, and Don Hubble

Approve November 2, 2017 Minutes: Bo made a motion to approve, Melissa seconded it and it was a unanimous to approve.

Budget Update/Annual Fundraising Collection/Hanging Basket Collection: Jennifer Brown stated that to date BRAAC has collected \$29,365.74 of the estimated \$30,365 and \$3,332.71 has been spent on the PO Box rental and the fundraising letter.

Memorial Park Trees: Jennifer Brown stated that during the November Town Council meeting, Town Council requested that Parks & Recreation work with Nancy Stairs and come up with a design/plan for taking down and replacing the trees in Memorial Park. Nancy, Chris and Ricky reviewed the plan was designed. They have suggested that we build a 2-foot wall behind the front benches and then a curved wall behind that one that would have planter beds throughout. They also stated that electrical outlets would be placed in the wall. Charlie suggested that if we were going to have everything torn up then we need to add irrigation to that area since we would have new trees that would require a lot of water for the first few years. Chris and Ricky agreed and stated that irrigation could be used for other things as well. Nancy also stated that behind the rock wall would be a large mulch bed in which the trees would be planted. This would allow the trees to grow and give them a better chance of not being damaged. Nancy went through the different tree species that would fit the criteria for the park and the design. Her suggestions were:

Tupelo (black gum)
Ginko
Tilia Americana (bee tree)
Tulip Poplar
Ostrya Virginiana
Dawn Redwood
Silver Maple
Florida Maple

Nancy stated that we need to keep all these trees as options because sometimes nurseries sell out of a species or some of the species may not meet our specifications so we need to have options to choose from. She also suggested that we purchase small and larger caliper trees and intermingle them. She said the larger transplanted tree will give an instant impact visually but will get transplant shock and take longer to grow. The smaller caliper tree will not have an instant impact; however, they will grow faster and catch up to the larger caliper trees. Ed stated that staff would look at what the fall color of the trees would look like as well when determining what to plant. Deborah McDowell stated that we need to move forward with taking all the trees down because now that we know the trees are dead and we don't remove them, if someone gets hurt or killed by one of them we will get sued for negligence. Ed stated that we do have insurance; however, we don't want to be negligent. Melissa asked if this plan could be accomplished by Town staff or if it needed to be contracted out. Ed stated that Town Council approved hiring a stone mason this fiscal year and we have offered the

position to someone; however, he cannot start until the end of February first of March. He would be able to build the rock walls. We have talked to a couple of contractors about removing the dead trees, and Chris and Ricky can plant the trees and accomplish the landscaped areas. Melissa asked when the best time to plant trees would be. Nancy stated that late September early October would be ideal; however late February early March would be fine too if they were watered regularly.

Curt and Melissa asked if once we plant the new trees if we would light them like we do now with the dead trees. Nancy stated that putting light strands on the trees won't do a lot of damage if we don't string them tight and we remove the lights every three years and restring them. She also suggested considering other options of lighting the park as well.

Albert mentioned that other municipalities have memorial trees that people can purchase. Nancy suggested not having memorial trees due to the fact they could die and who would be responsible for replacing them. All the BRAAC members agreed that we should stay with memorial park benches and not do memorial trees.

Bo made a motion to approve Chris and Ricky's design/plan for the Memorial Park trees by removing the dead trees in the NC Forestry Service's report and replace them all at the same time. Deborah seconded it and then added that we add Nancy and Chris' accreditations to the report and that the selection of the trees is left to the discretion of Town staff. It was a unanimous vote to approve.

Public Art Update: Jennifer Brown asked if everyone received the Public Art Policy that she emailed. Ed stated that this is the policy that they will follow when requests come to them. Bo asked if BRAHM had to get their future outside art approved as well, and he said yes.

Other Business: Bo stated that he preferred having the BRAAC meeting earlier in the day. Ed stated that Town staff would prefer it as well. Bo made a motion to move BRAAC meeting to 3:00 p.m., Melissa seconded it and it was a unanimous vote to approve. So, the plan will be to have the monthly BRAAC meeting on the first Thursday at 3:00 p.m.

Melissa stated that the Garden Club was applying for a program called America in Bloom that would have people come and make suggestions on our landscaping and give suggestions of best practices etc. for the Town's beautification. She stated they need \$200 and she suggested that BRAAC give them \$200 to go toward their \$1,000 goal since BRAAC raises the funds for all the annuals and flower baskets every year. She made a motion, Curt seconded it, and it was a unanimous vote to approve.

The meeting was adjourned at 6:50 p.m.

The next meeting is scheduled for Thursday, January 4, 2017 at 3:00 p.m.