Urban Tree Management
for Home Owner's Associations

Written by Edward Macie USDA Forest Service (Ret.), and Consulting Urban Forester.

Funding for this project was provided in part through the Urban & Community Forestry Program of the North Carolina Forest Service, Department of Agriculture and Consumer Services, in cooperation with the USDA Forest Service, Southern Region.

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Introduction

The Emergence of HOA's

The number of community or homeowner associations (HOAs) has increased dramatically over the last several decades, with that growth continuing to accelerate. According to the Community Associations Institute there were approximately 10,000 community associations in 1970, and in 2015 there were over 335,000, with 21% of the American Population (68 million) living in these common interest communities. North Carolina has the 5th highest number of HOAs, over 13,500, home for 2.8 million people.

The cause of this dramatic rise in the number of HOAs is most likely the nature of suburban development, which tends to sprawl out into un-incorporated areas of counties – areas that are not confined by municipal jurisdictional boundaries. Often counties require the establishment of HOAs as a condition of zoning and permitting because of the fiscal challenges counties face in providing these developments with support services. This results in the privatization of public functions such as trash collection, road maintenance, snow removal, storm water management, recreational services, and others.

One advantage of establishing an HOA includes homeowner preference for the community values defined by the collective management structure of each HOA (by-laws, restrictive covenants, design standards, etc.) that are adopted and administered by boards and committees made up of homeowners, and management companies. HOAs often provide desirable amenities to homeowners such as fitness centers, pools, hiking trails, as well as social events like meet-ups, pool parties, social clubs, and other activities. The combination of well-defined community boundaries, self-governance, amenities, and social activities results in a strong sense of place and community.

> Additional Information
>
> North Carolina laws governing the establishment, maintenance, and management of homeowner's associations include:
>
> - North Carolina Nonprofit Corporation Act
> - North Carolina Planned Community Act
> - The North Carolina Condominium Act

The privatization of essential services and maintenance of infrastructure are a given in HOAs, however, maintaining and enhancing an HOA's urban forest tends to be an afterthought for many of these communities. Only after development is underway, or

completed, do residents begin to realize that their urban forest, which is an essential part of their infrastructure and identity, requires attention. This guide is intended to help HOAs navigate through the process of establishing sensible policies to protect, maintain, and improve their urban forest resource.

Why Manage Trees as a Community?

Trees are the most visible and, perhaps, dominant features in the landscape, occupying the private yards and common areas of communities under collective management. The collective aggregation of trees under all ownerships within a community is referred to as the "urban forest".

> Common areas are properties within the community that may be jointly owned, or otherwise available for use by the entire community. These areas are typically rights of ways, tree lawns, parks, trails, nature areas, and recreation areas such as playground, pools and tennis courts.

Due to the wide range of benefits derived from the urban forest, it should be considered an integral part of a community's infrastructure. Unlike grey infrastructure (roads, sewer and storm utilities, distribution systems), which depreciates over time, the urban forest increases in value. The more trees grow and the healthier they are, the greater their environmental contribution, and the higher their value.

While it may be assumed that trees grow and take care of themselves, management and maintenance is necessary in order for them to become better established; more resistant to insect, disease, and weather extremes; grow healthier; and produce less risk. This is especially true in urban forests, where trees in urban and urbanizing environments are impacted by human influences, such as heat, glare, compacted soils, competition with turf, and construction related damages. Any negative impacts like messy fruit, allergies, damage to structures (such as heaving sidewalks), restricted sight distances, and risk from falling trees or tree parts, must also be managed.

Some HOAs may have tree standards in place at the time of their establishment to address tree removal and management but, as development continues or the HOA expands, issues can arise which challenges the initial standards and the overall maintenance and retention of trees. Thus, there is the need for policies, which are more sophisticated, to meet the reality of tree management, tree planning, and tree maintenance. There are also opportunities to be strategic with tree management, that is, to manage a community's urban forest with specific goals in mind. For example, planting trees to create a buffer between different land uses, or to minimize soil erosion adjacent to a common lake area, or even to enhance wildlife habitat.

Given these opportunities to maximize tree growth and health, and the overall benefits of an urban forest, while at the same time reducing the negative risks and potential impacts of trees, it makes sense for HOAs to have policies, programs and practices in place to manage and maintain their urban forest across the complexity of multiple stakeholders and ownerships.

The Benefits of Trees

Air Quality

Tree reduce air pollution such as particulate matter, absorb carbon dioxide, and produce oxygen.

Energy Conservation

An appropriately placed tree can reduce direct heating and cooling costs by shading structures from direct sunlight or, or buffering structures from cold wind. Tree can reduce local air temperatures from evaporative cooling (the evaporation of moisture from leaf surfaces) and can collective reduce the "urban heat island effect" caused by dense concrete and asphalt surfaces.

Conserve Water, Improve its Quality, and Reduce Flooding and Erosion

During rain events the canopy of trees intercepts rainwater, holds and evaporates some of it, and channels some to the ground where it can infiltrate into the soil. This reduces the overall rate and volume of storm runoff. Tree roots also hold soil in place, reducing erosion.

Carbon Sequestration

The burning of fossil fuel results in the release of carbon dioxide into the atmosphere, which traps heat and results in climate change. Trees help offset this release by absorbing carbon and converting it into wood. Carbon can remain trapped in wood for many years until burning or decay releases it. When used as a wood product, carbon could stay trapped for hundreds of years or more.

Mental and Physical Health

Several studies have found that access to nature yields better self-discipline, and greater overall mental health. One study even found that hospital patients who can see trees out their windows are hospitalized 8 percent fewer days than their counterparts, healing more quickly and with less medicine.

Economic Benefits

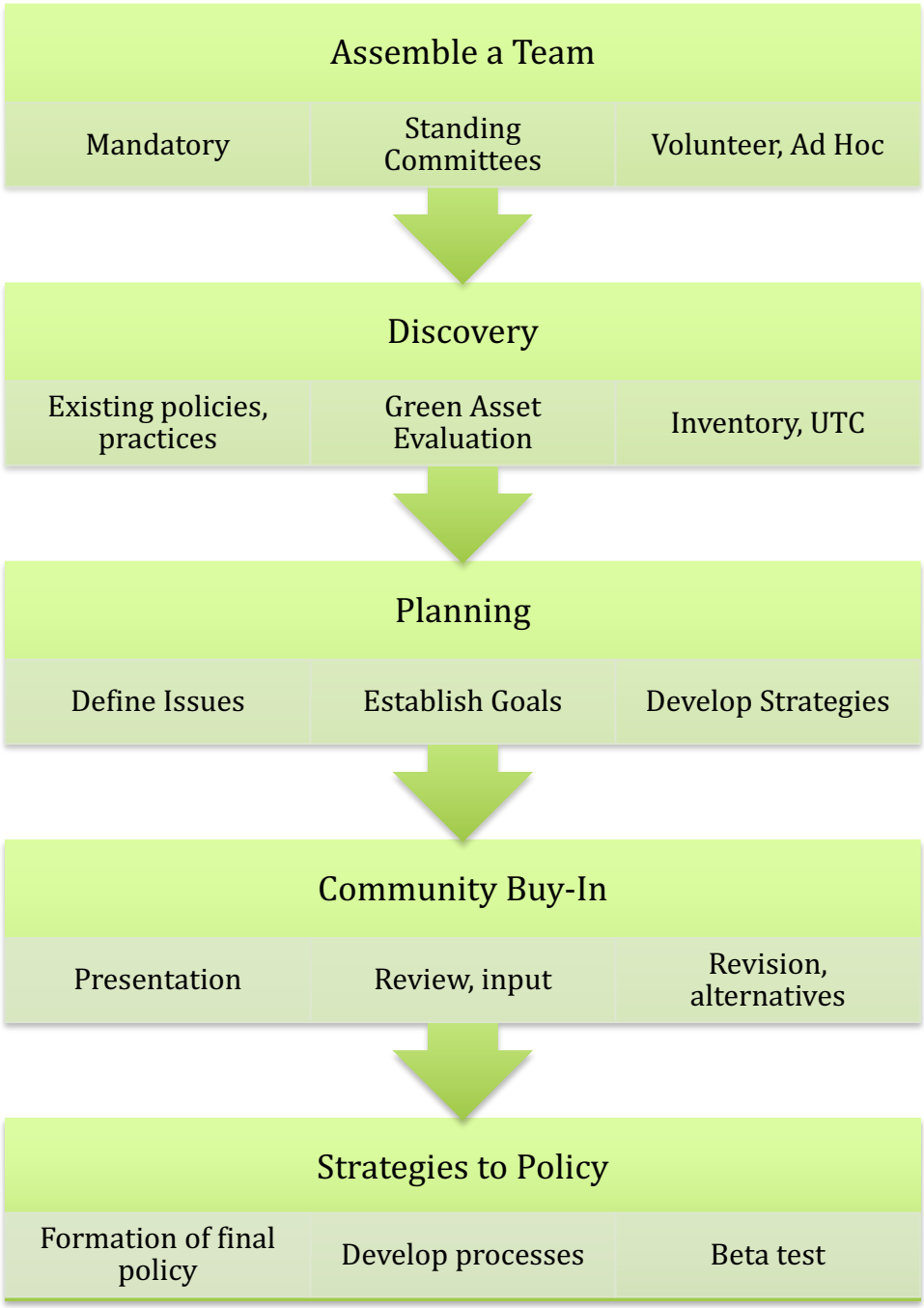
Studies have indicated that trees draw people to homes and businesses. They are willing to pay more for homes with trees and remain longer and spend more in retail environments with green landscapes.

Additional Information:

The Benefits of Urban Trees (Southern Group of State Foresters)
The Benefits of Urban Trees (Urban Forestry South, US Forest Service)
Trees and Human Health (Landscape and Human Health Laboratory)

Approach

A systematic approach can be followed in the development of urban forestry practices and policies for a HOA. This approach is outlined in the flow chart below, and each major heading is described.



Assemble a Team

Addressing urban forest policy and management needs is best accomplished through committee work, integrated into the existing HOA committee structure.

Homeowner associations can be thought of as volunteer organizations. Even those with professional management running the daily operations, still rely on committees, which are comprised of HOA members to fulfill important decision making role. There are three basic types of HOA committees:

- Mandatory committees
- Standing committees
- Ad-hoc committees

Mandatory committees are created in the HOA governing documents, where they are specifically named and described in detail. This description may include the responsibilities, as well as the authority (advisory or decision making) of the committees. Members of mandatory committees are often appointed by the HOA board of directors, but may operate independently of the board. Examples of mandatory committees include Architectural Review, Nominations and Elections, Grievance, and Audits.

Standing committees are also often established in HOA declarations or by-laws, but can also be identified by the board of directors. These committees are "function" oriented. They provide a clearly defined function in the operation of HOA. Examples of standing committees include budget and finance, communications, or recreation.

Both mandatory and standing committees remain in place indefinitely, whereas *ad-hoc committees* are task-oriented and are assigned to address a specific need or issue within the community. Once this task is complete, the committee is disbanded.

While it is very likely that an HOA may address some tree issues through their architectural review committee, or their landscape and grounds committee, it is appropriate to consider the enhancement of urban forest policy and management practices as a single task, accomplished by an ad-hoc committee (which will be referred to as the *"tree policy committee"* in this publication). It is possible that the work of this ad-hoc committee could result in the establishment of a new standing committee to implement the new policies and practices, which will be discussed later in this publication.

It is recommended that the tree policy committee be comprised of members with various strengths and backgrounds, since the management of trees in communities requires a multidisciplinary perspective. Examples of these backgrounds could include master gardeners, planners, communicators, architects, engineers, and policy makers. It is also important to include the HOA management company in committee deliberations.

Since committees within an HOA are member volunteers, it is important that members are somewhat knowledgeable and passionate about tree issues in the community, and are willing to stay committed through task completion.

Finally, it is important for the tree policy committee to obtain the services of a professional urban forester, or arborist, to help them better understand their tree issues, why they are occurring, and the best management and policy approaches to address them.

Professional Assistance

The services of a professional urban forester or arborist is extremely valuable to a HOA tree policy committee: helping them understand their tree issues, why they are occurring, and the best management and policy approaches to address them. These professionals have formal education and experience in the management of individual trees, and tree populations, located where people live, work and play. The educational background of these professionals typically integrates multiple disciplines such as tree biology, arboriculture, soil science, pest management, urban planning and design, forest ecology, and urban wildlife.

The following are links to member directories of professional associations:

- American Society of Consulting Arborist
- International Society of Arboriculture

Discovery		
Existing policies, practices	Green Asset Evaluation	Inventory, UTC

Discovery

The next step in the process is exploratory, to learn as much as possible about the management of trees in the HOA, and their actual condition.

There are several steps that can be taken in the Discovery step:

1. Review existing documentation

   It is essential that the tree policy committee explore the presence (or absence) of specific written policies, requirements, or standards that pertain to trees within common areas, along rights of ways, on private properties, and on developing property.

   This information could be contained within HOA charters, architectural design and review standards, and covenants. If the HOA has a standing committee that addresses landscape issues, or a management company responsible for the maintenance of common areas, it may be helpful to review work orders or agreements to see how work is specified. Examples of general types of questions that could help guide this initial discovery phase are provided in the text box below.

Initial Discovery Phase – Questions to Explore

- Are there any existing policies related to trees?
- Are there requirements related to the qualifications of contractors or consultants conducting tree work?
- Are there clear lines of authority, or established decision rules, regarding trees in common areas or along rights of ways?
- Is there dedicated funding for the maintenance and planting of trees in common areas or along rights of ways?
- Do any plans exist for tree management, to address their potential risk for failure, or for risk from wild fire, or for response after disastrous storms?
- Are there any references to tree management standards, best management practices, or firewise landscaping?

2. Assess the Status of the HOA's Urban Forest

   An HOA may also choose to have a field evaluation of the trees within the community (*Green Asset Evaluation*) carried out. This field evaluation can reveal the condition of the trees and their growing sites, provide indications of the effectiveness of existing policies, demonstrate the need for specific management practices to improve tree condition, identify potential planting opportunities, and identify potential risk for tree failure or wild fire.

An even more comprehensive approach to green asset evaluation is to conduct an *inventory* of trees within common areas, or along rights of way. This may be a costly procedure, and requires professional expertise, but the data collected can provide information that can be used for long-term planning and budgets by providing justification for management priorities, planting or replacement trees, recommended species, long-term maintenance, and risk management.

Information collected in a tree inventory includes:

- the tree's spatial location (GPS)
- species, size, condition (of all parts of the tree)
- notation of any structural defects, insects and disease
- condition of growing sites, and surrounding conflicts (sight distance, utilities, etc.)
- location and availability of planting spaces

The intensity or type of inventory can be defined to meet a community's specific concerns. For example, a more detailed inventory may be appropriate in high-use public areas, like trees along streets and sidewalks, whereas in lower use areas a risk analysis may be sufficient for trees that are adjacent to trails within natural areas.

Tree Risk Analysis

This analysis or assessment of risk is a detailed and comprehensive process that should be conducted by an arborist certified by the International Society of Arboriculture (ISA) with the ISA Tree Risk Assessment Qualification. This additional qualification ensures the use of the latest professional standards and best management practices for assessing tree risk and making recommendations for mitigating risk.

The risk assessment considers factors such site characteristics; tree defects and conditions the affect the likelihood of tree failure; load factors; tree health and species' profiles; and potential targets (things a failing tree or tree part could strike). These elements are factored into a risk categorization based on the likelihood of tree failure, the possibility of a failure impacting a target, and the consequences of a failure. The following link provides more information on tree risk assessment: Tree Risk

3. Urban Tree Canopy Analysis (UTC)

For expansive or complex HOA properties, one additional process may provide useful information that may be helpful in this discovery phase, an analysis of the HOA's urban tree canopy. Urban tree canopy analysis (*UTC*) is a "birds-eye" view of the total spatial coverage of tree canopy within a given area, in this case, the boundaries of the community governed by an HOA.

The value of a UTC is that the total percentage of canopy cover can be used to "benchmark" the overall tree cover or canopy of the urban forest, which can then be

used to quantify the ecological benefits derived from the trees to the community. An HOA may choose to carry out subsequent UTCs over time (5 to 10 years) to assess change by comparing the past extent of tree canopy to the present. A decrease in canopy from the initial value would indicate that trees are being lost (along with the loss of ecological and economic value). This loss could arise from additional land development, lack of maintenance or some other form of mortality. An increase in canopy (along with the increase in ecological and economic value) can document the impact of a tree-planting program. UTC can also be used to project potential, for future, canopy by identifying tree planting locations.

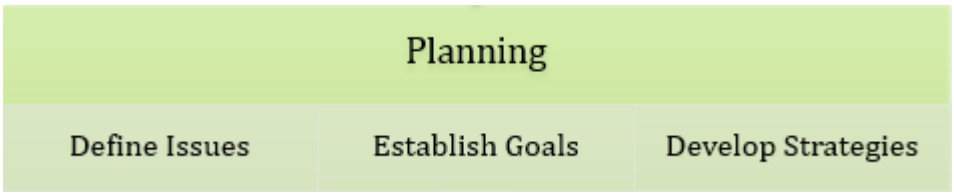
UTC analysis is usually conducted professionally, using aerial or satellite imagery. The US Forest Service has developed a tool that can be used by non-professionals called i-Tree Canopy that estimates canopy cover and the economic value of environmental benefits for a given area using a simple random sampling process. While the generated results from this tool are estimates, they are usually sufficiently accurate(within a 5% to 7% margin of error) to provide information to assist the planning and decision-making process.

The Discovery Process and Wildfire Prevention

HOA communities are increasingly being developed in suburban or rural landscapes, often in forested areas that are at an increased risk for wildfires. This risk is a result of many factors, including historic fire suppression (due to the proximity of the communities); communities built in fire dependent landscapes; or inaccessibility to emergency firefighting services. It is very important to consider this risk during the discovery phase of the process. Some factors to consider include:

- Identification of high risk fire areas
- Wide access roads for emergency vehicles, and multiple access and exit routes
- Fire resistant architectural material for homes and other structures
- Defensible space around homes and other structures.
- Fire resistant plants

Your state forestry agency will help your community conduct a wildfire risk assessment, and plan to reduce the wildfire risk. The following link provides more information on fire awareness and management for homeowners and communities: www.firewise.org



Planning

The discovery process should lead to tree policy committee discussions about current urban forest conditions in terms of:

- what is present – both acceptable and unacceptable
- what should be changed or maintained
- what are the desired characteristics for the long-term

The gap between existing conditions and desired future conditions can help identify:

- what is realistically achievable
- the actions necessary to achieve desired goals
- the costs associated with reaching those goals

During the planning stage, it is even more important that the HOA has contracted the services of a professional, certified arborist. The urban forestry expertise provided is essential for context, biological understanding to tree growth and response, professional practices, as well as the impacts of potential practices and policies. An example is provided in the following text box.

> During the discovery process the tree policy committee has discovered that there is a greater incidence of tree failures on properties that have been more recently developed. The urban forester can explain the practices that may contribute to these failures, how trees respond to these practices, and what new or adapted practices would be necessary to reduce failures. Such failures can have multiple causes and understanding cause and effect is invaluable:
>
> - "Wind throw" when a once protected stand of trees is opened by land clearing, and trees are now exposed to wind forces.
> - Damage during construction typically results in tree decline.
> - Mechanical damage to the structural roots of trees is common.

Once the *issues* are identified, discussion can then shift to possible solutions (practices and policies). These solutions should start with goals, which are accomplished through specific strategies.

Goal setting is one of the more important parts of this process as these goals will eventually be vetted through the entire community, as the HOA converts then to policy. Goals should be clearly articulated, specific, realistic, and measurable. Once goals are established, the

discussions turn to specific ways to accomplish them, by identifying *strategies*. Strategies can take the form of: activities or programs, and specific practices.

Example of Goals

Goals should be specific, realistic, and measurable.

- Increase the total canopy cover by 10%.
- Stop the topping of trees.
- Increase the diversity of tree species in common areas.
- Reduce soil erosion and storm water runoff.
- Reduce mowing costs by planting trees.
- Improve habitat for songbirds and pollinators.
- Reduce the loss of trees from construction and land development.
- Reduce the incidence of tree failure.
- Reduce conflicts between trees and infrastructure and utilities
- Create defensible space around 90% of the homes.

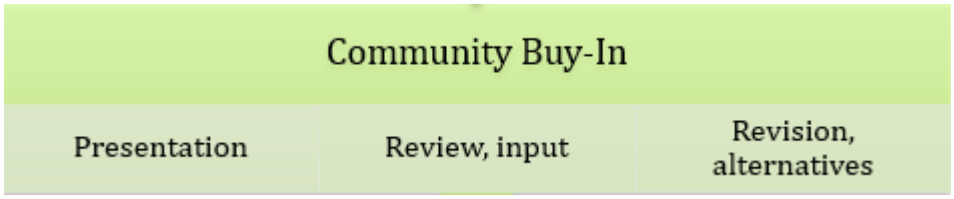
Programs are a planned series of future events such as educational programs or community tree planting initiatives. Programs do not typically become part of HOA policy. However, they can be very effective in accomplishing goals. For example, educational programs targeting homeowners on proper tree care and maintenance, or volunteer tree planting activities, could make a strong contribution towards achieving a goal, like increasing the community's tree canopy.

Strategies can also take the form of a practice, which applies science and management knowledge to the care of trees. Practices are typically expressed in the form of policy for an HOA. Using the same goal example as above, strategies to increase canopy (as a practice and not a program or activity) might include a protocol for replacing trees that are removed, or requiring that tree services employ industry best management practices when conducting work within the HOA.

Examples of Strategies

- Implement tree protection standards for construction sites.
- Establish an annual tree planting and maintenance budget for common areas.
- Require ISA certification for tree care services in the community, and tree care specifications based on national tree care industry standards.
- Create a recommended tree species list.
- Establish a prioritized annual tree maintenance plan for trees in the common area.
- Commission a tree risk assessment for trees in common areas and along trails.
- Conduct educational homeowner tree care workshops.
- Host volunteer tree planting projects in the community.

It is important to note that both activities and practices can be employed to accomplish specific goals. Well thought out strategies can also accomplish multiple goals. For example, a tree planting program would help achieve canopy goals, but could also result in the increase in the diversity of tree species; reduce soil erosion and storm water runoff; and improve habitat for song birds, pollinators, etc.



Community Buy-In

The next step in the process is engagement with the broader HOA membership, to build their support for, and acceptance of, the goals and strategies. This important step in the process helps educate the community about:

- The tree issues that the community faces and the policies address
- Why these issues are important to the HOA and its residents
- The solutions being presented as the goals and strategies.

There are a several steps to this process.

1. *Presentation* of committee plans at a community meeting: which should be a joint presentation by the urban forester assisting the tree policy committee, along with a member(s) of the committee.

   As much specific information as possible should be presented, including community responsibilities and the resulting process. By the end of this presentation HOA members should be able to visualize what these proposed policy changes mean to them as individual homeowners, and to the community.

   - The issues that were identified by the tree policy committee should be clearly articulated; along with the how these issues were defined during the discovery phase.
   - The urban forester should discuss the long-term implications of action and inaction in terms of urban forest health, ecosystem benefits, and potential risk.
   - A committee member can present the goals and strategies, explaining how the committee developed these strategies, and how the community can become engaged in implementation (or how they may be impacted by implementation).

2. *Discussion* and community feedback: which should walk through each of the individual goals and strategies, and solicit questions, suggestions, and alternatives.

   - Allow everyone the opportunity to provide feedback.

Some people are not comfortable speaking in front of a group so other opportunities for input should be provided. One technique is handing out note cards prior to the presentation, with directions to write comments and suggestions, which can be collected and read during the discussion.

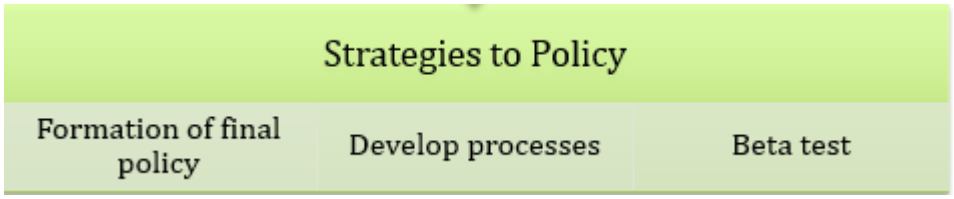
- Allow email responses for a short period after the meeting.
  The format of such responses should be structured so HOA members stay focused on goals, strategies, suggestions and alternatives, so a form may be helpful.
- Allow and document suggestions and alternatives.
  Homeowners may think of solutions that the tree policy committee may not have thought of, or they might present simpler or more flexible approaches to proposed strategies. These suggestions can become forms of "alternative compliance" that are built into the HOA policy.

Alternative Compliance

For many policies, when several alternatives are available, they community members tend to be more accepting of the proposed policy.

For example, if an HOA adopts a "no net loss" canopy goal, with a 1 for 1 tree replacement strategy, that strategy may become a policy that a homeowner must plant a tree for every tree they remove. This may seem inflexible if a homeowner wanted to remove trees for a vegetable garden, since replacing the trees might interfere with that garden. With alternative compliance, the homeowner could instead plant trees in common areas, or donate the tree planting costs to a community tree bank for future planting. Communities could also choose to use these funds for the maintenance of trees in common area, or to hire professionals for community wide tree care, maintenance, evaluations or inventory or UTC updates.

The tree policy committee should repeat these outreach sessions until they feel comfortable with the community's level of understanding and buy-in. Gaining consensus, or a sufficient quorum, can take time.



Strategies to Policy

Converting goals and strategies into policy can be a tedious task that starts with the assignment of these strategies to appropriate documents within the HOA governance. To help facilitate this process the tree policy committee should consider recruiting a member with strong familiarization with their HOA governance, as well as a representative of their management company most familiar with the routine processes of the HOA.

Goals developed by the tree policy committee are usually converted into a narrative format, providing background information, and describing the intent of the policy. This is very similar to the expression of intent in city tree ordinances justifying the purpose of the ordinance.

Strategies could become policy in several ways:

- Revision to the HOA by-laws.
  This is necessary if there a change the committee structure is needed, or to establish a new standing committee. For example, the by-laws would need to be revised to address strategy establishing a new standing committee to function as a tree board with the responsibilities of reviewing tree removal requests, tree maintenance specifications, and tree protections plans.
- Addition to HOA architectural standards or design guidelines.
  - Strategies can be scattered through the standards and design documents, depending where it is most appropriate. For example, strategies addressing the protection of trees during new development could be added to the architectural standards section pertaining to site design or environmental controls; while strategies improving the standards of care for tree maintenance could be placed in the sections that pertain to the maintenance of buildings and grounds.
  - Strategies can be kept together in a single section under its own, amended to the architectural standards or design guideline. This approach presents the policy more like a tree ordinance. When using this approach, it is necessary to cross reference to other sections where the implementation might occur.

The final step is for the tree policy committee to map out the processes and responsibilities. Again, the professional urban forester can be very helpful with this step. For example, if tree protection during construction is required, the committee must state:

- how this ties into the existing planning and site review processes
- the specific information required for tree protection planning
- how it is implemented in the field
- monitoring and follow-up requirements
- methods for corrections.

This level for detail is necessary for all strategies that might involve a process, such as tree removal and permits, contracting tree maintenance, etc. The generation of flow charts, time lines, and checklists for the new requirement processes can be helpful.

Finally, the tree policy committee should conduct some trial runs or beta tests to ensure the processes are effective and efficient, and revise the process accordingly. The new policy is then ready for HOA board ratification.

Sample Tree Protection Review Process

1. Have all the trees on the lot survey located.
2. Have an ISA certified arborist measure the trees on site (diameter at breast height (dbh), and evaluate their condition.
3. Develop a tree protection plan overlay on the proposed site plan, including all of the elements in the Tree Plan Design checklist (below).
4. Submit the Tree Protection Plan for review for compliance with the design standards, along with other permit documents and drawings for review to: Architectural Review Committee and the Tree Policy Subcommittee.
5. The Tree Policy Subcommittee conducts a field evaluation and plan review (within 2 weeks) for compliance with the design standards.
6. Plans are either returned for revision or approved for permitting.

Sample Checklist for Tree Plan Design

- ✓ Drawing showing location of protected trees on the site and location of proposed land disturbance activities.
- ✓ Radius in feet of critical root zone for each tree
- ✓ Location of proposed structures, drives, patios, and walkways
- ✓ Proposed grading and drainage.
- ✓ Location of underground utilities
- ✓ List of protected trees with species, dbh, and general condition description
- ✓ List of proposed tree removals
- ✓ Locations of proposed tree plantings
- ✓ If the community is located in a high fire risk area, thirty feet of defensible should be defined on the drawing for Firewise purposes.
- ✓ Tree protection and erosion control measures to be installed.
- ✓ Staging areas for material storage and debris dumpster
- ✓ Owner and builder 24-hour emergency contact information
- ✓ Detail Drawings and Specifications for tree protection fencing, erosion control devices, tree planting details, or any other applicable prescriptive or protective measures.

Case Study – Town Oaks at Blue Ridge*

* This case example is factual; the name of this HOA is fictitious.

Town Oaks at Blue Ridge (TOBR) is a modest-sized (675-acre) and growing community with currently about 700 homes under 501(c) 4 HOA governance and management, located in Western North Carolina. The community was established 15 years ago, adjacent to the Pisgah National Forest on previously forested land surrounding a 67-acre lake (TOBR Lake). Its setting can best be described as suburban within a rapidly growing, but mainly rural, county with an urban center. Most lots range in size from a third to half-acre, the streets and stormwater facilities are constructed to urban subdivision standards, and the community has full access to county utilities and emergency services.

TOBR contains landscaped community areas, including street trees; naturally forested community property; and individual private property. The community works hard to demonstrate environmental responsibility, and is committed to sustaining their beautiful physical environment. They have an active cadre of volunteers who have created and maintain an inventory of street trees in the neighborhood

The establishment of a "Forest and Grounds" ad-hoc committee was driven by a growing perception that tree canopy was being lost in the community due to building construction and resident tree removals, and replaced with smaller trees and shrubs.

To better understand their natural resources the committee hired a consulting forester to establish a base line of the natural resource conditions and to develop a "Forest and Grounds Plan", designed to be a reference for managers and residents of the community. The plan's recommendations prioritized actions reduce soil erosion, improve water quality in TOBR Lake, manage exotic invasive species, establish natural community types, improve public safety, and facilitate tree protection. This report identified a baseline canopy cover of 51%, and recognized that canopy was being lost through building construction, natural mortality, and wind throw. The final recommendation was to develop a community tree ordinance to address these trends.

Assemble a Team

This final recommendation, along with the recognition of the value of a tree ordinance, to underscore the community's commitment to protecting and improving their urban forest, moved the Forest and Grounds committee to work towards developing an HOA tree policy. TOBR contracted the services of a professional urban forester through the North Carolina Forest Service to help them through the process.

Discovery

The Forest and Grounds committee embarked upon the *discovery process*, building upon the base line established with the Forest and Grounds Plan. Since a thorough natural resource assessment had already been conducted during the Forest and Grounds Plan, and a volunteer public tree inventory had been completed, the discovery process focused on:

- interviews with the Forest and Grounds committee and the HOA's management company,
- a review of charters, by-laws, the strategic plan, and design standards, and
- a green asset evaluation.

Early in the discovery stage it was determined that there were no standards for tree maintenance or protection in any of the documents, and trees were being removed without replacement. The community-wide concern for falling trees and tree parts resulted in HOA tree work being contracted without specifications requiring national industry standards for tree care (ANSI A-300, Parts 1-10).

The *green asset evaluation*, which occurred as a field tour of common areas, construction sites and residences within the HOA, showed that:

- Construction injury to trees was the primary cause of tree loss, decline, and risk.
- Many of the falling trees and tree parts were due to decline from construction damages.
- Residents were subsequently removing those trees and generally replacing them with smaller, understory trees, if there was any replacement done.
- While there was some separation of trees from construction activity on home construction sites, the tree protection was generally limited and unplanned.
- Some of the trees in the community were topped, both on private residences and in common areas.

Such issues indicated that the existing practices could possibly result in an overall loss of tree canopy, or result in tree decline and mortality. This conclusion moved the committee into the *planning* stage of policy creation.

Planning, Community Buy-In and Strategies to Policy

With the issues defined and working with the committee, TOBR's Consulting Urban Forester developed policy recommendations – a series of goals and strategies focusing on canopy loss, tree protection, tree management, tree risk management and community tree recognition. (Details of these goals and strategies are provided in Appendix 1.) The Forests and Grounds Committee simultaneously started the *community outreach process* to gain community buy-in by providing educations sessions focused on these issues.

The Forest and Grounds Committee accepted most of the recommended strategies submitted by the urban forester, and worked through a revision process. It was decided to *convert these strategies to policy* by revising the HOA design guidelines (Appendix 2).

Two level of ratification were necessary since there is still active development in the community. The developers (referred to as the "Founders" in the HOA charter) had to approve the policy recommendations, as well as the board (comprised of homeowners). The Founders accepted all of the recommendations with the exception of the policy pertaining to tree protection for new construction. The board had accepted all of the other policy recommendations and intends vote on approval, after implementation process details are refined.

APPENDIX 1: TOWN OAKS AT BLUE RIDGE POLICY RECOMMENDATIONS

Canopy

Policy Recommendation:

Establish a no net loss canopy standard.

Discussion:

Tree canopy, often expressed as a percentage of the total land area of a community, has become one the best and most widely accepted indicators of trends in the urban forest. Canopy is measurable, and can be directly tied to the ecosystem services provided by the trees. These services include improved water quality, improved air quality, wildlife habitat, carbon sequestration, energy conservation, etc. The current canopy for Town Oaks at Blue Ridge was measured at 51%. This is considered good for a residential area. A decrease in this percentage would signal a decrease in the environmental services and a no net loss policy would keep these services at a sustainable level. Decreases in canopy are typically a result of building construction, construction damages, and natural tree mortality.

Establishing a canopy policy also creates an over-arching community-wide commitment towards sustainable management of your trees.

Strategy:

- At a single-family residential scale, require a 1:1 replacement strategy (replace a tree for every tree removed or lost). Replacement trees should be comparable species to those lost
- For building construction of all types; canopy in square feet replaced for canopy in square feet lost. Existing canopy can easily be measured on properties being build or developed. Canopy values can be attributed to new trees based on their potential for growth. For example: Large growing trees such as poplars, and oak would be worth 1500 square feet, medium trees such as maples would had a 900 square foot value, and small trees such as red bud and dogwood, 400 square foot value. If there is inadequate space for planting a “fee in lieu of” could be collected. (.75 to 1.50 per square foot would seem appropriate). The funds could be placed into a “Tree Bank” to support planting throughout the community.
- Volunteer community tree plantings for residential yards and common areas.

Tree Protection

Policy Recommendation:

Actively plan for, protect, and replace trees on construction sites.

Discussion:

Building construction poses the single greatest threat to the existing canopy in Town Oaks at Blue Ridge. Loses are either direct (clearing for building construction), or indirect (trees dying from construction related damages to roots and trunks. Indirect loss often occurs several years after construction is complete and us usually suffered by the subsequent property owner. This type of loss is also associated with increased risk due to compromised root systems, declining trees and falling dead branches. Appropriate planning and field implementation of protection practices can reduce losses, reduce risk, and save homeowners money.

Strategy:

- Build a tree protection planning and implementation protocol into the Town Oaks at Blue Ridge Design Guidelines.
- This protocol would involve the development of tree protection plans to include as a minimum: The delineation of areas of disturbance, areas of tree protection; location of utilities, material and debris storage, location of erosion control features, and canopy tree replacement calculations.
- Tree protection measures should be installed on site and maintained throughout the construction period, and new trees planted prior to post construction review. A sample tree protection plan is provided.

Tree Management

Policy Recommendation:

Assure that all tree work is specified according to national industry standards, and performed following industry established best management practices.

Discussion:

The tree care industry, education, and research institutions have been investing in urban tree (arboriculture) research and education for decades. The focus of this effort is to assure that best available science is employed in tree work to assure public and tree worker safety, and to produce positive results in terms of tree physiology and biology. This body of science has resulted in the development of nation-wide industry consensus standards (ANSI- A300,

parts 1-10), and complimentary Best Management Practices Guidelines. The following is a list of sections provided in these standards:

- Part 1 - Pruning
- Part 2 – Soil Management
- Part 3 – Supplemental Support Systems
- Part 4 – Lightning Protection Systems
- Part 5 – Management
- Part 6 – Planting and Transplanting
- Part 7 – Integrated Vegetation Management
- Part 8 - Root Management Standard
- Part 9 – Tree Risk Assessment
- Part 10 - IPM

Strategy:

- Place a requirement in the Town Oaks at Blue Ridge Design Standards that all tree work in the community is specified in accordance to the ANSI A-300 Standards, and conducted following industry Best Management Practices.
- Specifications should be either developed or reviewed by an ISA (International Society of Arboriculture) Certified Arborist.

Risk Management

Policy Recommendation:

Establish a tree risk policy to facilitate decisions regarding tree removal and risk mitigation.

Discussion:

Research and industry consensus has resulted in the establishment of a national Tree Risk Standard and complimentary Best Management Practice (ANSI A-300, part 9). These standards and practices have resulted in a science based and systematic approach to attributing risk ratings, and managing (preventing, and mitigating) risk associated with trees. These practices also provide a basis for community decision-making regarding the removal of trees due to potential risk.

Strategy:

- Employ the ANSI A-300, part 9 (Tree Risk Assessment) and complimentary Best Management Practices in determining risk associated with trees in the Town Oaks at Blue Ridge Community.
- Permit the removal of trees with a risk categorization of “moderate” or higher, if that risk cannot otherwise be mitigated (via removal of tree parts, moving a potential target, or restricting access in target range).

- Encourage but do not require tree replacement for the removal of a tree categorized with a moderate or higher risk rating. (If replacing a tree becomes an obstacle to removing risk, public safety may be compromised.)

Landmark or Heritage Tree Designation

Policy Recommendation:

Establish criteria to designate landmark tree status.

Discussion:

The designation and identification of special trees in your community, based upon pre-established criteria, will increase awareness and appreciation of this valuable resource. Special designations could also add a layer of protection for some of these unique trees. Types of recognition programs include specimen or landmark trees, historic designation, or dedications (to community service, deaths, births, etc.). Some communities have established arboretums along walking trails to increase awareness of trees.

Strategy:

- Decide on a set of criteria to identify landmark or heritage trees in your community, and build these criteria into the Town Oaks at Blue Ridge Design Standards.
- Use volunteer groups to identify and map the landmark or heritage trees.
- Consider acknowledging the status of these trees with signage.

Appendix 2: Town Oaks at Blue Ridge Design Guidelines

A new section to be added

Community Trees

The intent of this section is to establish standards of practice and best management practices that will assure a health, diverse, safe, and highly beneficial community forest. The trees of Town Oaks at Blue Ridge provide the overall community with clean air, protected water quality, improved storm water control, reduced energy costs, habitat for desirable wildlife, and improved property values. It is the overall intent of these guidelines to provide a zero net loss of tree canopy (currently at 51%) in Town Oaks at Blue Ridge, into the future.

- For single-family homes, tree replacement is required a 1:1 ratio (1 tree is replaced for every tree removed or lost).
- Replacement trees should be a minimum of 2" to 2.5" caliper and should be a species capable to growing to a comparable size as the species lost. (See the species selection list, Appendix _ of the Town Oaks at Blue Ridge Design Guidelines).
- Homeowners who choose not to replace a tree by planting on their own property may either pay $125 into a "tree bank" or voluntarily plant a tree on someone else's property.
- The HOA will maintain a list of homeowners who would like to have a tree. Those homeowners wishing to receive a tree from the donor homeowner must promise to properly care for it.
- Funds in the "tree bank" may be used for planting and/or maintaining trees on community property.
- For the new construction of homes, tree replacement is required when the overall canopy of a lot decreases below 51%. Canopy values for replacement trees are provided in the species selection list (Appendix _ of the Town Oaks at Blue Ridge Design Guidelines). Trees remove from outside the buildable envelope of a lot will be replace on a 1:1 ratio. In either case payment of $125 per tree removed will be accepted in lieu of planting.
- All tree work on private property in Town Oaks at Blue Ridge should be specified by an International Society of Arboriculture (ISA) Certified Arborist according to National Tree Industry Standards (ANSI-A300). All tree work should follow industry best management practices.

- All tree work on common areas in Town Oaks at Blue Ridge shall be specified by an International Society of Arboriculture Certified Arborist according to National Tree Industry Standards (ANSI-A300). All tree work shall follow industry best management practices.
- The topping or rounding of trees is prohibited. Topped trees will be considered destroyed and will result in a $125 replacement fee.
- If a homeowner believes a tree presents a safety or property risk they may remove and replace the tree with a species capable to growing to a comparable size as the species removed, or $125 into the tree bank. The replacement requirement is waived is the tree is documented to be a moderate or higher risk by an ISA Certified Arborist qualified in risk assessment.
- The Town Oaks at Blue Ridge Forest and Grounds Preservation Committee shall create and maintain a list of the 5 largest trees of each species (in good or better condition) occurring in Town Oaks at Blue Ridge, as the community's Heritage Tree List.

Tree protection *(Replaces language on pages 21, Site Design Documents and 29, Protection of Existing Vegetation.*

A tree protection plan shall be prepared for all new home construction and remodeling that alters the existing footprint of a structure. This plan will provide the following information:

1. Clearly delineated limits of disturbance, and the location of all structural footprints, including overhangs, decks, walks, drives secondary structures, patios.
2. The location of all existing and proposed underground utilities.
3. The location of all existing trees over 8" in dbh (diameter at breast height) within 30 feet of any proposed site disturbance.
4. The approximate limits of existing tree groupings and large understory massing (e.g., Rhododendron/Mountain Laurel) beyond 30 feet of proposed site disturbance.
5. The location of proposed tree protection fencing and erosion control devices. Tree protection shall be maintained throughout the duration of construction.
6. The location of staging areas for construction materials and debris.
7. A canopy analysis showing the pre-existing canopy and resulting canopy after tree removal.
8. A north arrow, graphic scale, submittal date and lot number, as well as owner, designer(s) and surveyor, and certified arborist information.
9. A separate landscape plan with proposed landscaping, indicating all species, sizes and locations, showing replacement for trees removed outside of the buildable envelope (or indicating payment of $125 per tree in lieu of planting) and to bring the site into compliance with the 51% canopy standard.