

Original (20)

Government of the District of Columbia
ADVISORY NEIGHBORHOOD COMMISSION 3F
North Cleveland Park • Forest Hills • Tenleytown

3F01 - Carl R. Kessler, Treasurer
3F02 - Karen L. Perry, Chair
3F03 - Robert V. Maudlin
3F04 - David J. Bardin, Vice Chair
3F05 - Judith M. Bernardi
3F06 - Catherine J. Wiss, Secretary
3F07 - Stephen N. Dennis



4401- A Connecticut Avenue, N.W.
No. 244
Washington, D.C. 20008-2322
web site: www.anc3f.org
e-mail: ANC3F@juno.com
Phone: 202.363.6120
Fax: 202.686.7237

18 August 2004

Zoning Commission of the District of Columbia
441 4th Street, N.W. -- Suite 200
Washington, D.C. 20001

SUBJECT: Forest Hills Tree and Slope Overlay District – ZC 02-19
NASB, "*Tree Preservation Ordinances*"

Dear Zoning Commissioners:

Herewith please find the full text of a thoughtful article out of which OP's July 12 Final Report [at 5] quoted two sentences (which are marked, at page 3 of 7 of the article): National Association of Home Builders, *Tree Preservation Ordinances* (1991).

Sincerely,

A handwritten signature in cursive script that reads "Karen Lee Perry".

Karen Lee Perry, Chair, ANC 3F

ZONING COMMISSION
District of Columbia

Case 02-19
Order 373

ZONING COMMISSION
District of Columbia
CASE NO.02-19
EXHIBIT NO.373



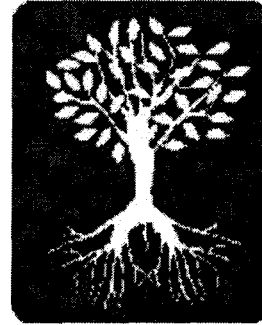
WWW.NAHB.ORG

NATIONAL ASSOCIATION OF HOME BUILDERS

TREE PRESERVATION ORDINANCES

Normal View

Tree and woodland preservation appears to be the next emerging environmental issue now that there are local, state, or federal regulations requiring the development community to address floodplains, stormwater, wetlands, water quality, endangered species, steep slopes, and even air quality. Trees are a visible presence in a community and easily noticed when they are removed or damaged. Many references are being made in the media to tree loss and its potential connection to global warming trends; even President Bush expressed concern about trees in his State of the Union address in 1989.



Often, the development community is viewed as being primarily responsible for removing or destroying trees. As a result, more and more communities are turning their attention from standards that protect street trees on public property to more complex tree or woodland preservation ordinances that protect trees affected by construction activity. In April, 1991, the Maryland General Assembly passed the nation's first statewide bill on forest preservation and reforestation, legislation that is likely to be viewed as a model by other states.

Yet, saving trees in a community is more difficult than merely expecting developers to try to do a better job by complying with new standards. What is needed is not an adversarial process between local officials, citizens, and developers, but a cooperative one. Flexibility and cooperation go a long way toward generating broad support for tree preservation requirements when they are adopted. Both those writing the regulations and those subject to them should realize that they share a common goal, namely, that mature trees and landscaping enhance a community's image and that protecting these resources is worthwhile. Trees are aesthetically pleasing and are well known to increase real estate values by as much as 15 percent. They increase home energy efficiency through shading and cooling, filter air pollution, buffer noise and wind, and provide wildlife habitat as well as pleasant visual relief.

Local officials and the public need to have a better understanding of development constraints and particularly need to recognize how other local regulations, such as grading, curbing, utility installation, and street width requirements, affect developers' ability to save more trees than they typically do.

Tree preservation standards themselves can be too prescriptive and inflexible. Communities need to be willing to use performance-based tree standards and to allow variation from other rigid development standards so that the project design team has flexibility to respond sensitively to the unique natural resource conditions on each site. Flexibility and reasonableness includes recognizing that buildings and parking unavoidably take up part of a site and need to be accommodated. Relying on a "no net loss" approach to saving trees or forests is not very realistic or workable.

For their part, developers need to be more aware that, by means of increasing real estate values, trees enhance the marketing and resale potential of any property. Besides this "curb appeal," mature trees can be a cost-effective alternative to clearing a site and then landscaping with nursery stock. Learning more about how to save or transplant trees on a site and how to reduce potential damage to trees from construction activities not only saves money in the landscaping budget but sets an example of responsible, environmentally sensitive development. This demonstration of stewardship

and excellence builds a strong public image of a developer who is taking positive environmental actions and is concerned about quality. Such a reputation can translate to not only to surer sales, but easier development approvals and respect within the industry.

Tree preservation ordinances vary in form and complexity across the country, though many have common elements. Some communities exempt all single-family development from adopted requirements, for example, while others may exempt only individual single family homes. The rest of this paper looks at the standard sections of a typical tree preservation ordinance and various approaches to tree preservation requirements under each section. This discussion should help provide guidelines for developers and local officials when they are revising a local tree preservation ordinance or developing one for the first time.

Some of the decisions about what to protect and how are choices a community must make, so that citizen input is essential. Others are more technical and require the involvement of a professional with special expertise in trees, such as an urban forester or landscape architect. Developing a task force with broad-based representation in the community is an effective way to develop an ordinance that is responsive to all interests and will be widely supported. It is also a good idea not to exempt local government, i.e., public agencies, from the preservation requirements, but to "lead by example," in order to foster greater support for the ordinance and its objectives.

Purpose and Authority

Tree preservation and landscaping ordinances historically have been upheld by the courts as reasonable extensions of a local government's zoning and subdivision authority, which are themselves a delegation of the rather broad police power that most states grant to local governments to protect the public health, safety, and welfare. Before adopting tree preservation requirements, however, communities should check their state enabling legislation to verify that their authority is broad enough to cover such special-purpose regulations.

Once authority is established, a tree preservation ordinance should clearly state its purpose or goals, and the requirements should clearly implement these goals, so that the ordinance is more legally defensible. Clearly defined goals will also assist in interpretation of the ordinance as it is implemented and enforced.

The ordinance also should state clearly who reviews tree preservation plans and who has the authority to enforce the ordinance. This person should be someone with special knowledge of trees, such as an urban forester, arborist, or landscape architect. He/she should be charged not only with implementing the ordinance but should be involved early on when the ordinance is being drafted, so that the tree standards that are developed are locally appropriate. If the community is financially unable to hire such an expert as a full-time staff person, a consultant in this field should be contracted for necessary services and a full-time staff person be made responsible for administering the ordinance.

Defining What Trees Will be Protected

A community should realize that not all trees are worth saving and should be very specific about which trees it does seek to protect. A professional arborist or landscape architect should be consulted to help determine which species and size trees are desirable or valuable locally for preservation or for replacement stock in light of species longevity; susceptibility to insects, disease, pollutants, and windthrow; aesthetic contribution; maintenance requirements; and the community's stated goals. There is no typical size tree that is used as a threshold for saving trees. However, the standard measurement used is tree caliper or diameter at breast height (dbh). Caliper is used for trees four inches in diameter or smaller and is the diameter of a tree trunk in inches taken at a point six inches above the ground. For trees larger than four inches, diameter at breast height is used; this is measured in inches on a tree's trunk at a point four-and-a-half feet above ground.

Ordinance standards vary from an extreme of protecting 2- to 3inch trees or larger (essentially

nursery stock size) up to venerable 24- or 36-inch trees. Many use 6-, 8-, or 12-inch trees as the baseline size for tree preservation. Lake Forest, Illinois, for example, uses 12-inch trees as the threshold size for protection

Some ordinances focus only on preserving historic or specimen trees. Charlotte, North Carolina, requires that all trees greater than 24 inches in diameter or any specimen trees more than 12 inches in diameter be shown on construction plans so they can be considered during the planning process. Prince George's County, Maryland, includes an unusually detailed, two-page list of specimen trees found in that area of Maryland that is to be used in conjunction with other county standards as a guide for determining which size trees might be eligible for protection on a property. This list is included in the appendix to this paper.

Other ordinances emphasize retention of native plant communities. Sanibel Island, Florida, strictly limits destruction of trees during construction and requires that primarily native plants be used in new landscaping. The ordinance of Hilton Head Island, South Carolina, attempts to maintain the same diversity and composition of species that existed on the predeveloped site through strict preservation standards and appropriate replanting requirements.

Instead of relying on tree sizes or types, still another approach is to require that a minimum percentage of a site be left in trees or replanted or to establish a minimum tree diameter, basal area, or square-inch total that must be met on each site. This approach is more typical and appropriate when the goal of the ordinance is focused on protecting woodlands, or whole blocks of trees, because it allows the flexibility to save or plant trees of various sizes and still meet the standard.

Quoted
by
OP

Obviously, the reasonableness of any of these standards will depend on how much protection is required.

Review of Development Plans

Many of the early tree protection ordinances primarily sought to protect street trees along public right-of-ways. Some of these ordinances are still in use in cities, where extensive land areas are no longer open to development and street trees are the major forestry resource. Since 1980 or so, however, an increasing number of ordinances have been broadened to extend to development activity on private lands. Many of these ordinances now require a permit for tree removal, while others tie tree preservation to approvals for grading or land disturbance permits.

A number of more recent ordinances, for example, require any development that disturbs either more than a half an acre or more than an acre of land to obtain a land disturbance permit. Prince George's County, Maryland, requires developers to submit forest stand delineation and preservation plans if a parcel is 40,000 square feet or larger and contains 10,000 square feet of woodlands or more before development. The rationale for this approach is partly to prevent unscrupulous developers from clearing a site before applying for site plan approval and to enable communities to scrutinize activities that may affect tree survival from the very outset of a project. Regardless of the process required, it is best to make tree permit reviews and approvals part of the normal subdivision or development review process and to do these reviews concurrently so that substantial, new delays, and thus costs, are not added to development approvals.

Many ordinances now require developers to submit detailed tree surveys or forest stand delineations with their preliminary plans as well as tree preservation plans that indicate which treed areas are to be saved, how they will be protected, and, if trees are to be removed, how they will be replaced. Prince George's County, Maryland, has produced A Technical Manual for Woodland Development in Prince George's County to implement its officially adopted tree policy that provide comprehensive explanation of what these plans generally contain, how they are used to obtain development approvals, and how they become project documents that guide the construction process so that trees are indeed saved.

A few ordinances go into substantial detail about how construction affects trees. The ordinances of Fulton County, Georgia, and Prince George's County, Maryland, are both excellent sources of

information on this point. Others merely stipulate that certain construction practices must be followed.

A key guideline often discussed is the importance of protecting the roots of a tree. Fencing off the trunk, an older standard, is ineffectual. Even the dripline of the tree is now being viewed as an inadequate protection zone now that the root network of a tree is better understood. The bulk of a tree's roots are a mat of finely meshed feeder roots that fan out well beyond the dripline of a tree and occur primarily within the top 12 inches of soil. Instead of a taproot, trees have a network of roots. Prince George's County's manual contains a rather technical discussion of the formulas now being used to calculate a tree's protection area, but explains that the basic concept is that a tree's root volume equals the volume of its canopy, as indicated in the diagram that is included in the appendix to this paper.

Chapel Hill, North Carolina, uses the simple rule of thumb of allowing one foot out in horizontal distance for each inch of the tree's diameter. According to the American Forestry Association, this easy-to-use formula is gaining in acceptance.

Another requirement that is beginning to appear in tree preservation ordinances is that developers educate subcontractors and any other members of their development team to communicate the importance of the tree save requirements and to explain the construction practices that must be followed on the project to protect the trees. These practices typically include flagged fencing, a signage program, and designated equipment parking and wash-out areas.

Tree Protection and Replacement Requirements

Many of the first ordinances that were adopted in the early 1980's to apply to development activities used the seemingly simple approach of requiring developers to plant one new tree for every tree they removed on a site. A few communities soon caught on to the fact that removing a mature, 24-inch diameter tree and replacing it with 2-inch nursery stock did not seem quite adequate, so various approaches other approaches were tried. Some existing ordinances still in use require replacement on a caliper-inch for caliper-inch basis, others use the more rigorous 1-for-1 square-inch replacement formula, while still others require the planting of 2 or 3 new trees for every existing tree removed.

The underlying problem with any of these "eye for an eye, tooth for a tooth" approaches is that they do not adequately account for the fact that small trees eventually do grow into large trees, and that buildings and parking do occupy space on a site.

On a wooded site, it may not be physically possible to accommodate replanted trees at a 1-to-1 or 2-to-1 basis. Thus, these approaches are now being seen as fairly rigid and even impractical in some instances.

Gibbsboro Borough, New Jersey, uses a modified version of this approach, requiring developers to replant one inch of new tree diameter for every four inches of existing tree removed. Existing trees are considered to be any trees in defined tree protection zones or any tree with a diameter of 30 inches or greater. Newly planted trees must be a minimum diameter of two inches. Annapolis, Maryland, uses a sliding replacement scale based on the size of existing trees:

- trees from 5 to 8 inches in diameter (dbh, diameter at breast height) must be replaced on the basis of 1 tree for every 4 trees removed
- trees 8 to 12 inches dbh are replaced 1 for every 2 removed
- trees 12 to 18 inches dbh are replaced 1 for 1
- trees 18 to 24 inches dbh are replaced 2 for 1
- trees greater than 24 inches dbh are replaced at the rate of 3 to 1.

This is an interesting approach, in that it places greater weight on protecting more mature trees. One flaw in the logic is that mature trees, while seemingly more valuable and irreplaceable, are well known to be more susceptible to being distressed by construction activity. Younger, mixed stands are more vigorous and adaptable and offer better potential for future woodlands.

The Fulton County, Georgia, ordinance recognizes this and relies instead on a standard based on a certain minimum number of trees per acre. Total minimum site density must be 15 "units" per acre, with units relating to dbh by means of a complex formula (see appendix). A single unit is essentially equal to a 13-1/2 inch caliper tree, but the relationship is not strictly linear, with proportionately more credit being given for increasingly larger trees. For example, a 27-inch diameter tree is worth 4 units. Though complex, this formula approach allows developers the flexibility to use a variety of tree sizes to meet the standard.

Prince George's County and the Maryland state legislation have developed an alternative, somewhat more intricate replacement schedule. In general, both emphasize retention of existing forest, afforestation of vacant areas, and relying on forest conservation measures during development. Afforestation refers to planting trees where none existed before or where they have been absent for a long time. Both policies establish woodland or forest conservation threshold levels, expressed in percentages, for various land uses or zoning districts. Trees removed that cause the woodland cover on a site to fall below the percentage for that land use must be replanted at a higher rate than trees removed above the percentage. If the original forest cover did not reach the designated percentage, the site must be "afforested" to 20 percent of the site in the Maryland bill or to 10 percent of the site in Prince George's County.

A summary of the Maryland law's requirements and a table of Prince George's County's conservation levels appear in the appendix to this paper. Neither policy sets exceedingly high preservation levels. In Prince George's County, the levels range from 10 percent in commercial and industrial zones to 50 percent in rural and agricultural areas, with most residential areas set at 20 percent. In the Maryland bill, the comparable range is from 15 to 50 percent.

However, both require the somewhat controversial concept of planting trees where none existed before, and both require developers to either plant trees offsite or to pay into a designated fund if it is not possible to replant the required number of trees onsite.

This concept of offsite mitigation is a new element in tree preservation ordinances. To some, it clearly reflects the more extreme "no net loss" attitude toward tree preservation. The courts have not yet examined whether such provisions violate the "rational nexus" test that conditions imposed on development must typically meet or, in the view of some, the more stringent "essential nexus" test imposed on development exactions by the Supreme Court in *Nollan v. California Coastal Commission*. These tests essentially require that conditions placed on development must be reasonably related to a need created by that development and also that the conditions imposed must benefit the development that, in this instance, plants the trees or pays the fee, rather than the community at large. Requiring developers to plant trees on another site bears a rather tenuous connection to these points and may be subject to legal challenge.

From a practical standpoint, offsite mitigation can also be difficult to implement. Anne Arundel County, Maryland's ordinance has required offsite plantings since its adoption in November, 1988. Yet, according to a Washington Post article in June, 1991, the county had collected more than \$500,000 from developers in its offsite mitigation fund and had not been able to find a single landowner who was willing to have replacement trees planted on his property.

As previously mentioned, flexibility and a cooperative approach go a long way toward ensuring the success of a new ordinance. With tree preservation requirements, this may mean trying to reduce and mitigate the impacts of development on trees rather than trying to achieve "no net loss." It means recognizing that in developing a site, a portion of the site becomes occupied with buildings, roads, and parking lots, leaving less area available for new trees. The Lake Forest, Illinois, ordinance offers a good example here. Developers must delineate a "construction area" that includes the building footprint plus 20 feet, roads, and utility pathways, but trees may be removed within this area.

A flexible approach also means crafting standards that leave site planners and foresters room to

creatively respond to the unique natural conditions on each parcel and be able to use them to best advantage. Due credit should be allowed to apply to landscaping requirements when existing trees are saved. The community should be willing to take a look at its other development standards and work with a development team to make changes to grading, curbing, road widths, or utility installation practices where those changes will allow more trees to be saved.

Prince George's County and the city of Bowie, Maryland, offer a compelling example to others on this point. The city of Bowie allowed 2-to-1 grades and, in conjunction with the county, reduced building pad setbacks, allowed cul-de-sacs with planted islands, reduced street widths, and allowed grassy swales instead of curbs in several areas of a large subdivision under construction in Bowie called North Ridge.

These concessions allowed many more trees to be saved on the project and a special rural atmosphere consistent with the surrounding area to be maintained. The appendix includes documents prepared by The Michael T. Rose Companies, the developer of North Ridge, to show the city and county what these changes mean in terms of additional trees that could be saved. The number of additional trees saved by the change in the grading requirement from 3-to-1 to 2-to-1 is particularly noticeable. Many areas of the country require 3-to-1 grades and could benefit from learning how this requirement alone affects tree preservation.

Enforcement

Last, but not least, most ordinances contain provisions for enforcement and penalties in the event violations occur. Many communities withhold occupancy permits until standards have been met and also require developers to submit performance bonds to ensure that the necessary trees are saved or planted. If protected trees are removed unlawfully, some communities require that a mitigation fee be paid into a special fund, so that the community can replant trees there or elsewhere in the community. Many ordinances also hold developers accountable for tree survival in the initial years following construction, since it may take three to five years for a tree to die that was injured during construction. Such communities typically require the developer to either replace the dead trees or pay a special fee.

References

NAHBNET issue summary, National Association of Home Builders, February 1990.

"FACT SHEET--The Maryland Forest Conservation Act." NAHB State and Local Government Affairs Department, May 1991.

Birchell, Robert S. "Using and Protecting Trees During Development and Construction." LAND DEVELOPMENT, National Association of Home Builders, May 1988.

Clark, Steve. "Using and Protecting Trees as a Development Asset--Revisited." LAND DEVELOPMENT, National Association of Home Builders, Winter 89/90.

"Saving Trees is Good Business." BUILDER, May 1989. Benefits of Urban Trees, Forestry Report R8-FR17, USDA Forest Service, Southern Region, Atlanta, Georgia, April 1990.

Moll, Gary. "Building in the Green." URBAN FORESTS, American Forestry Association, June/July 1991.

"A Systematic Approach to Building with Trees." James Fazio, Editor. Tree City USA Bulletin Number 20, National Arbor Day Foundation, 1991.

"How to Save Trees During Construction." James Fazio, Editor. Tree City USA Bulletin Number 20, National Arbor Day Foundation. Tree Preservation Ordinances page 11

"A Tree Grows in Suburbia." ZONING NEWS, American Planning Association, January 1989.

"Improving City Street-Tree Codes. ZONING NEWS, American Planning Association, May 1990.

Rodbell, Phillip, and Adam Kuby. "Laying Down the Law." URBAN FORESTS, American Forestry Association, December/January 1991.

Duerksen, Christopher. Aesthetics and Land Use Controls--Beyond Ecology and Economics, Chapter 4, Tree Protection Ordinances. Planning Advisory Service Report Number 399, American Planning Association, 1986.

Bernhardt, Elizabeth, and Tedmund Swiecki. Guidelines for Developing and Evaluating Tree Ordinances. Prepared for the California Department of Forestry and Fire Protection, Urban Forestry Program, April 1991.

Linowes and Blocher (law firm.) "Tree Protection Ordinances of the State of Maryland and Selected Local Jurisdictions." Annapolis, Maryland, June 1990.

Plott, David M., Esquire. "Forest Preservation--A Growing Concern." LANDS LETTER, Volume 2, Number 1, National Association of Home Builders.

Fulton County Tree Preservation Ordinance Administrative Guidelines, Fulton County, Georgia, 1985.

A Technical Manual for Woodland Conservation with Development in Prince George's County Maryland. Maryland National Capital Park and Planning Commission, Upper Marlboro, Maryland, May 1990.

Maryland Senate Bill Number 224, Forest Conservation Act. April 30. 1991.

"North Ridge--A Community that Lives with Nature," development proposal. The Michael T. Rose Companies, Laurel, Maryland, May 1988.

National Association of Home Builders
Land Development Services Department
October, 1991