

Environmental Enhancements To the Unified Development Ordinance

Summary of Steering Committee Actions

Presented to the EEUDO Steering Committee

May 5, 2009

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Environmental Enhancements to the UDO

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Environmental Enhancements to the UDO: Summary of Recommendations

I. Introduction

Over the past several decades, Durham and other Triangle communities have witnessed increasing demand for growth and development. At the same time, citizens and government officials have become concerned that many of the qualities that attract people and businesses to the region, such as clean air, clean water, and green open spaces, are threatened by that growth. In response, every few years Durham evaluates its development regulations related to environmental protection and takes steps to strengthen the provisions that protect the natural environment.

The latest of these efforts is called the Environmental Enhancements to the Unified Development Ordinance (EEUDO). The EEUDO process began in the summer of 2008 when the Joint City-County Planning Committee (JCCPC) established a Steering Committee to investigate and report on ways that the Unified Development Ordinance (UDO) could be improved in regards to environmental protection. The Steering Committee and its supporting staff were directed to focus on four core areas:

- Sedimentation and erosion control;
- Water quality and stream buffers;
- Site preparation; and
- Tree protection/preservation.

The EEUDO Steering Committee met for the first time in November 2008, and has met on a monthly basis since then. Each month one of four environmental topics, determined by the JCCPC, was addressed: sedimentation and erosion control, water quality and stream buffers, site preparation, and tree protection/preservation. Staff presented background material and policy options to the Steering Committee in the form of a policy paper for their review and input.

This report serves as the culmination of the EEUDO Steering Committee's work to date. Of the 30 policy options within the four topic areas that the JCCPC asked the Steering Committee to address, positive recommendations were made on 24 of them. The Committee has expressed interest in meeting again to review staff recommendations on UDO language to implement the Committee's recommendations at the appropriate time.

A special thank you goes out to the members of the EEUDO Steering Committee who have given their extremely valuable time and effort to this endeavor. In addition, many thanks are given to the staff for both the City and County who dedicated their time to this project.

II. Sedimentation and Erosion Control

A. Background

The purpose of the Sedimentation and Erosion Control section of the UDO (Section 12.10) is to regulate private, non-exempt land disturbing activities in order to limit accelerated erosion and sedimentation. The goal of the proposed program enhancements is to improve the limitation of accelerated erosion that occurs due to land disturbing activities.

Staff identified for the Steering Committee six issues regarding sedimentation and erosion control to be addressed through the EEUDO process, including policy options. The issues and policy options recommended by the Steering Committee are outlined below.

B. Proposed Policies

1. Lower the threshold for the size of land disturbance that requires an erosion control plan.

Currently, the UDO requires that all projects with disturbed areas greater than one acre (43,560 square feet) submit an erosion control plan for approval. Many non-residential projects that have disturbed areas between 20,000 square feet and one acre require more detailed erosion control planning than the common stand alone residential lots.

Steering Committee. The Steering Committee recommends UDO amendments to require an Erosion Control Plan for all land disturbance activities over 20,000 square feet in size, and that the Plan be submitted and stamped by a certified professional engineer.

Concerns. The Steering Committee is concerned about the availability of staffing adequate for administration and enforcement, and potentially unreasonable cost for individual homeowners.

2. Require skimmers in sediment traps or basins.

Skimmers in sediment traps and basins are effective in that they drain the water stored in a trap or basin from the surface level down. Stormwater at the surface of these traps or basins contains the least amount of sediment due to sediment fallout.

Steering Committee. The Steering Committee recommends that the UDO be amended to require skimmers in traps and basins.

3. Decrease the incentive for the use of skimmers.

Presently, temporary sediment traps or basins that do not use skimmers must be designed to handle 3,600 cubic feet of storage volume per disturbed acre. The UDO provides an incentive for using skimmers: if a skimmer is used, the design volume of a temporary trap or basin can be reduced up to 50 percent. However, if skimmers are to be required, then no incentive is necessary.

Steering Committee. The Steering Committee notes that if skimmers are required in all traps and basins, then no incentive is required and, therefore, the 50% volume credit should no longer be allowed. However, due to site constraints and smaller lot sizes in urban areas, the minimum basin size should be 1,800 cubic feet in the Downtown, Compact Neighborhood, and Urban Tiers; and 3,600 cubic feet in the Suburban and Rural Tiers.

4. **Decrease the size of drainage areas for a skimmer sediment trap.**

In accordance with the Erosion and Sediment Control Planning and Design Manual, the maximum drainage area for a skimmer sediment trap is 10 acres. A smaller catchment area increases the amount of runoff that will be treated in a trap or basin and lessens reliance on silt fences.

Steering Committee. The Steering Committee reached no consensus on this policy option.

Concerns. The Steering Committee notes that designing sedimentation and erosion control devices for smaller drainage areas improves the sediment capture rate by basins and traps and lessens reliance on silt fences. However, they may also decrease site design flexibility and increase maintenance costs. Further research is necessary as to the efficacy of smaller drainage areas. The Committee also notes that no other jurisdictions in the area do this.

5. **Increase design standards for traps and basins from 10-year to 25-year storm.**

The UDO, in Section 12.10.7, Design and Performance Standards, requires that, within High Quality Waters (HQW) zones, sediment traps and basins must be designed to the 25-year storm standard. The UDO requires that all traps and basins located outside of the HQW zones be designed at a minimum for the 10-year storm standard.

Steering Committee. The Steering Committee reached no consensus on this policy option.

Concerns. Further research is necessary about the potential environmental benefits and possible impacts on future development. The possibility of incentives for larger basins should be considered.

6. **Tighten stabilization requirements after land disturbance.**

The UDO requires that all disturbed land surfaces left exposed shall be stabilized: All slopes left exposed are required to be stabilized within 21 calendar days; all other portions of the completed project are to be stabilized within 15 working days or 30 calendar days, whichever is less. Shorter stabilization periods should reduce erosion.

Steering Committee. The Steering Committee recommends that the UDO be amended to require the following stabilization periods:

- A maximum of ten calendar days on moderate slopes;
- A maximum of seven calendar days on steep slopes; and
- A maximum of seven calendar days on traps, basins, and diversion ditches.

Concern. Instituting the above recommendation may require a re-evaluation and redefinition of steep and moderate slopes. Created slopes, as well as natural slopes, should be included in the new definitions. Height differential should be considered more important than horizontal size of the slope when determining the minimum size of a steep or moderate slope. The Steering Committee chose not to recommend requiring a minimum stabilization period of 14 calendar days for all other areas not defined above.

III. Water Quality and Stream Buffers

A. Background

Almost every land development affects water quality. Buildings, streets, sidewalks, parking and other construction alters the landscape: forests and pasture are replaced with hard surfaces. Rainwater that previously percolated into the soil is now channelized causing runoff to occur at higher velocity. Stormwater runoff washes pollutants into streams and reservoirs. Fast moving streams scour their banks, contributing to silt and sediment in the water. Site design features and stormwater management can minimize the effect of new development on streams. However, in addition to such measures, requiring natural buffers around streams is an important regulatory technique for protecting water quality.

Durham is facing a fundamental issue related to water quality and new development. The environmental protections that were implemented in the past few years have proven insufficient to protect water quality in streams and reservoirs. Enhancing Durham's development regulations for protection of streams and wetlands will not comprehensively address water quality problems in streams reservoirs. However, modifications to the UDO that improves site design, taking into account water quality concerns, can provide a higher level of protection for streams and wetlands.

B. Proposed Policies

1. Increase the required stream buffer widths.

The primary purpose of stream buffers is to mitigate the impacts of non-point source pollution on streams. Vegetated stream buffers also slow floodwaters, thereby helping to maintain stable stream banks and protect downstream property. Stream buffers provide valuable habitat for wildlife and corridors for wildlife movement. Forested streamside areas benefit game species such as deer, rabbit, and quail, and nongame species, such as migratory songbirds.

Steering Committee. The Steering Committee recommends that the UDO be amended to require the following stream buffer widths:

- 100 feet on all perennial and intermittent streams in the Suburban and Rural Tiers;
- 50 feet on all perennial and intermittent streams in the Downtown and Compact Neighborhood Tiers; and
- 100 feet on all perennial and intermittent streams in the Urban Tier, which could be reduced to 50 feet through an approval process based on land availability.

The Steering Committee also recommended that the UDO use the zone method for all 100-foot buffers, as follows:

- 75-foot stream bank undisturbed zone; and
- 25-foot outer managed zone.

The Steering Committee also recommends that the UDO not allow the undisturbed stream buffer to be incorporated into platted lots and to allow for areas affected by additional buffer width to be counted towards density calculations.

Concerns. The Steering Committee expresses concern about future environmental enhancements to address steep slope considerations, street standards, reducing setbacks by right along stream buffers, and regulating buffer width by soil type. The staff has serious concerns about using soil type to regulate buffer width due to the lack of reliable data and administrative costs.

2. Require buffers on smaller order streams.

Smaller order streams, those that do not qualify as either perennial or intermittent, can drain up to 85 percent of a river basin, and are therefore very important in nutrient management and downstream water quality. However, the buffering of such streams could make development of many parcels problematic, if not impossible, due to the amount of land that would be removed from potential use.

Steering Committee. The Steering Committee does not support stream buffers for smaller order streams. The Committee does support requiring buffers where there is a gap in a perennial or intermittent stream and requiring buffers at the ends of regulated streams.

Concerns. The Committee notes that regulating and enforcing buffers on smaller streams could be resource and time intensive, and that identifying lower order streams in a consistent manner is difficult.

3. Reduce the size of wetlands that require a buffer.

Wetlands maintain water quality by filtering pollutants, reducing flooding, and preventing erosion. Properly managed wetlands also reduce flooding

and protect the public health, safety, and welfare. There is also scientific evidence that wetlands contribute to atmospheric maintenance. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide.

A wetland buffer is an area of land that surrounds wetlands and provides a transition zone to filter runoff caused by adjacent development. Wetland buffers function like stream buffers and are integral to preserving the valuable eco-system services wetlands provide. Requiring buffers around wetlands recognizes the surrounding uplands impact to the wetland's quality and function. Current UDO regulations require that wetland areas of at least one acre in size be buffered.

Steering Committee. The Steering Committee recommends that buffers be required on all wetlands that are contiguous to a stream buffer. This wetland buffer should be the same size as the corresponding stream buffer. For all wetlands not contiguous to a stream buffer, the committee chose to maintain present regulations regarding the one acre minimum to trigger a wetland buffer.

Concern. The Committee expressed that enforcing an appropriate wetland buffer width is more important than buffering small wetlands, and therefore chose to maintain present regulations regarding wetlands that are not contiguous to a stream buffer.

4. Increase the size of wetland buffer width.

A wetland buffer is an area of land that surrounds wetlands and provides a transition zone to filter runoff caused by adjacent development. Buffering wetlands recognizes the surrounding uplands impact to the wetland's quality and function.

The UDO currently requires a wetland buffer width of 25 feet along the perimeter boundary of any wetland area of at least one acre in size. The buffer may be reduced to 10 feet if the applicant agrees to utilize construction management techniques that will provide a similar level of protection.

Steering Committee. The Steering Committee recommends that the UDO be amended to increase the wetland buffer to 50 feet for wetlands larger than one acre that are not contiguous to a stream buffer.

5. Limit the ability to construct stream crossings.

Stream crossings are sometimes necessary for a development to meet connectivity and access requirements. However, stream crossings can remove natural habitat and increase storm water velocity. The UDO allows various stream buffer intrusions, such as streets, driveways, stormwater control structures, recreational trails, and sanitary sewer lines. DENR must approve all stream crossings, regardless of UDO regulations.

Steering Committee. The Steering Committee expressed the desire to maintain present regulations.

6. Limit the ability to pipe streams.

The piping of streams eliminates natural connections between overland flow of stormwater and its channelization and removes natural wildlife habitat. Furthermore, stormwater velocity increases and a degradation of water quality occurs as natural filter capabilities are removed. Durham’s development regulations allow piping of perennial and intermittent streams for a stream crossing and with a variance issued by the Board of Adjustment.

Piping of an intermittent stream can be approved only outside the Rural Tier and only when the DRB (or the Public Works Director or County Engineer for projects that do not require a site plan) determines that the site plan provides water quality benefits at least equal to those of the stream buffer.

Steering Committee. The Steering Committee expressed the desire to maintain present regulations.

IV. Site Preparation

A. Background

Site preparation activities, such as grading and clear-cutting, though aesthetically unpleasant and fraught with potential environmental consequences, are in many cases a necessary part of development. The purpose of this section is to identify policies that can best mitigate the negative effects of these site preparation activities.

B. Proposed Policies

1. Redefine mass grading.

Mass grading in the UDO is currently defined as.

...The grading of one acre or more at one time to prepare multiple lots for construction, rather than lot-by-lot grading at the time of building construction of any project that would require the preparation of a Sediment and Erosion Control Plan pursuant to Sec. 12.10.3 General Requirements. This definition does not include grading necessary to install required infrastructure such as roads.

The UDO has no standards that limit the use or extent of mass grading.

Steering Committee. The Steering Committee recommends that the UDO be amended to redefine mass grading as, “The grading of four acres or more at one time to prepare land for construction. This definition includes grading necessary to install required infrastructure such as roads.”

This would put mass grading more in line with the UDO definition on land disturbance.

2. Require fingerprint grading for single-family subdivisions.

Fingerprint grading restricts grading to the portion of the site proposed for roadways, utilities, and building site pads. Under this model, only the area to be used for roadways, utilities, and up to 20 feet around building pads could be graded. This practice enables preservation of native vegetation and minimizes the effect of soil erosion and compaction issues.

Steering Committee. The Steering Committee recommends that the UDO be amended to require fingerprint grading strategies for single-family subdivisions with lots of 10,000 square feet or greater.

3. Require phased grading plan for mass grading.

A phased grading plan, submitted with a site plan or preliminary plat, is one in which the site is divided into smaller areas or “phases” for grading purposes. The developer would be required to complete and stabilize the graded area in one phase before grading in another phase could begin. The benefit to a phased grading plan is to limit the amount of area exposed at one time. Phased grading plans are best suited for residential projects that do not have large building footprints.

Steering Committee. Large residential developments that are going to be phased and mass-graded should be required to phase the grading. No acreage cap should be placed on the amount that could be mass graded at one time.

Concerns. Site plan expiration should not be triggered if delay is due to phased grading requirements.

4. Require a staged grading plan.

A staged grading plan shows separate plans for the initial mass grading and for the final grading of the site, and therefore provides greater detail about the construction sequence. Staged grading plans work best for sites with large building footprints that require a large amount of grading. A staged grading plan would allow more detailed review of the sedimentation and erosion control for the project during the approval process. Staged grading plans allow sedimentation and erosion control staff to better monitor these controls throughout the construction process.

Steering Committee. The Steering Committee recommends that the UDO be amended to require a staged grading plan under the following conditions:

- Only applicable to developments that fall under the new mass grading definition;
- The staged grading plan should be submitted during construction drawing phase; and

- A land disturbance permit would not be issued until the staged grading plan is approved.

5. Amend the land disturbance buffer requirements.

Currently, there is a disconnect in the UDO between “mass grading” and “land disturbance.” The latter requires buffers while the former does not. In section II.C.2 of this report, the Steering Committee recommended that the mass grading definition be amended and clarified. This proposal would amend the land disturbance buffer requirements so that they are consistent with the proposed new mass grading provisions.

Steering Committee. The Steering Committee recommends that the UDO be amended to apply land disturbance buffers to all areas where mass grading, under the new definition, will occur. Rename them “mass grading buffers.”

Concern. This Committee recommendation assumes that the mass grading buffer is clarified and rewritten to include site improvements.

6. Increase the width of required land disturbance (mass grading) buffers.

The UDO requires land disturbance buffers for sites of greater than four acres. Current UDO land disturbance buffer requirements are:

- 50 feet along public rights-of-way; and
- 32 feet along adjoining property lines.

The buffers currently required under the UDO are less than those currently allowed by state enabling legislation.

Steering Committee. The Steering Committee recommends that the UDO be amended to increase the land disturbance (mass grading) buffers to the State allowed maximum in the Rural, Suburban, and Urban Tiers, which are:

- 65 feet for property edges adjacent to existing roads;
- 65 feet for property edges adjacent to developed properties (including properties for which a plan for development has been proposed or approved); and
- 32 feet for property edges adjacent to undeveloped properties.

The Steering Committee further recommends:

- Do not require a buffer within the Urban Tier on edges that require a build-to line; and
- Remove all mass grading buffer requirements in the Compact Neighborhood and Downtown Tiers, unless the edge is adjoining a residential use or zone in the Urban or Suburban Tier.

7. Limit allowable mass grading buffer intrusions.

Amend the UDO to restrict the allowable intrusions into the buffers.

Steering Committee. The Steering Committee did not support this policy option and suggests that it be removed from further consideration.

8. Clarify types of clear cutting in the UDO.

There are currently three types of clear cutting activities that occur in Durham:

- Forestry within a State-approved Forestry Management Plan (FMP);
- In preparation for development for which there is an approved site plan identifying environmental areas to be protected, tree coverage areas, etc.; and
- Unregulated clear cutting that does not fall under either of the above two conditions.

The goal of this policy option is to define more clearly these clear-cutting activities so that currently unregulated clear cutting may be regulated.

Steering Committee. The Steering Committee recommends that the UDO be amended to adopt the State definition of forestry and to clarify and define non-forestry activities that are to be regulated at the local level.

9. Require documentation of legitimate forestry activities.

At the present time, the Durham City-County Planning Department, which locally enforces the existing regulations on clear cutting, has no reliable method to determine if an FMP exists when a citizen complaint regarding clear cutting is made. By registering an approved FMP with the Planning Department, a more efficient investigation can be made on such complaints.

Steering Committee. The Steering Committee recommends that the UDO be amended to require property owners to register an approved FMP with the Durham City-County Planning Department before the property owner engages in clear cutting as defined in the UDO.

Concerns. Although not a UDO issue, the Steering Committee suggests that, should this recommendation become law, the Durham City-County Planning Department work with the Durham County Cooperative Extension Office to educate property owners about new rules regarding forestry and clear cutting. The registration process should be as easy as possible. Violations should be reported to the Durham County Tax Assessors office for possible actions on present-use value status.

10. Require a clear cutting permit.

For property owners who may want to clear cut without an FMP or development or site plan, the requirement to secure a clear cutting permit would allow the Durham City-County Planning Department to review the site and ensure that buffers are maintained and sensitive environmental areas are protected, in accordance with Section 8 of the UDO.

Steering Committee. The Steering Committee recommends that the UDO be amended to require a clear cutting permit to clear cut an area of 12,000 square feet or greater, where an FMP or an approved site plan has not been approved. In order to receive the permit, a Simplified Site Plan would be submitted and approved by the Durham City-County Planning Department.

Concerns. Although not a UDO issue, the Steering Committee suggests that, should this recommendation become law, the Durham City-County Planning Department work with the Durham County Cooperative Extension Office to educate property owners about new rules regarding forestry and clear cutting. Violations should be reported to the Durham County Tax Assessors office for possible actions on present-use value status.

11. Establish penalties for violation of clear cutting regulations.

In instances where proper documentation has not been submitted, a permit has not been issued, or the required buffers have not been protected, penalties should be established in order to encourage compliance with the clear cutting rules.

Steering Committee Recommendation. The Steering Committee recommends that the UDO be amended to require revegetation, but reached no consensus on the level of revegetation. In addition, a fine of \$2 per square foot to a maximum of \$40,000 should be instituted in order to help ensure compliance.

Concerns. Although not a UDO issue, the Steering Committee suggests that, should this recommendation become law, the Durham City-County Planning Department work with the Durham County Cooperative Extension Office to educate property owners about new rules regarding forestry and clear cutting. The proposed fine could be excessive to property owners that would be unaware of the new rules. Lack of a fine, or an insufficiently large fine, would not be enough of a deterrent to those who want to avoid the new rules. Violations should be reported to the Durham County Tax Assessors office for possible actions on present-use value status.

V. Tree Protection-Preservation

A. Background

Tree coverage and tree protection provide many benefits to a community. Trees provide valuable benefits to our daily lives, including energy savings, water and air quality improvement, greenhouse gas mitigation, and riparian buffer stabilization. In addition, the presence of trees is commonly associated with higher visual and amenity ratings within new development and an abundance of mature trees is associated with enhanced property values. Though Durham's tree coverage regulations are some of the most stringent and progressive in the area,

there are provisions within the UDO that provide an unintended incentive to remove otherwise healthy trees.

B. Proposed Policies

1. Allow tree coverage credit for smaller trees.

Preserving existing trees enhances soil retention, the survivability of trees, and the immediate visual impact of new development. The UDO requires that, in order to receive tree preservation credit, existing trees must be a minimum of two-inch diameter at breast height (dbh). Since stands of existing small trees do not count towards preservation credit, there is an implicit encouragement to cut down and replace these trees to secure tree coverage credit. The choice to preserve trees is not necessarily the best option for a developer or landowner.

Steering Committee. The Steering Committee recommends that the UDO be amended to allow partial credit for a healthy stand of young pines or hardwoods of less than two-inch caliper. Full credit could be obtained if the stand is supplemented with a certain percentage of smaller canopy trees or understory planting.

Concerns. This provision should not include street trees, which would have to meet ordinance standards.

2. Allow for smaller replacement trees for tree coverage calculations.

Native understory species will have a greater chance of survival than larger hardwoods when planted among existing canopy trees. These trees would be 0.75 to 1.5 inch caliper trees planted bare-root (approximately a five to six foot tall tree).

Steering Committee. The Steering Committee recommends that the UDO be amended to allow for native, hardwood, understory species of less than 2-inch caliper to count towards tree replacement. UDO amendments should also increase the percentage of allowed replacement trees that are less than 2.5 inches caliper (currently a minimum of 50 percent must be 2.5-inch caliper or greater) where there is an existing stand of canopy to be supplemented to meet the tree coverage requirements.

Concerns. The species that will be allowed to count under this provision should be clearly defined in the landscape guidelines. Staff should be specific about a recommendation for the percentage of trees that will need to be 2.5 inches dbh for replacement.

3. Allow greater flexibility in the dimensions of tree protection areas.

Allowing a variation in the width of tree coverage areas so that existing trees can be credited will reduce the incentive to cut down healthy trees. These trees should still be in a stand and all precautions taken to preserve the trees' root protection zone. The intent of this option is to allow a natural, variable-width cluster of trees to remain with full credit, as long as

it meets the minimum area requirement for the size lot it is on and the trees are protected.

Steering Committee. The Steering Committee recommends that the UDO be amended to allow for greater flexibility in tree protection areas regarding width and size to remove the incentives to remove existing trees. A minimum width and area would still be required.

4. Modify the uses allowed within tree coverage areas.

The UDO allows for certain uses within tree coverage areas that are not compatible with tree planting or survival. Such uses include utility lines and storm water facilities. Developments can currently count these areas as tree coverage, even though they cannot accommodate tree replacement.

Steering Committee. The Steering Committee recommends that the UDO be amended to prohibit stormwater and utility facilities in tree coverage areas. These facilities are currently permitted in tree coverage areas, even though trees cannot grow in these areas. In addition, amend the UDO to allow a percentage of amenity areas to be located within the tree coverage area as long as those amenities do not disturb existing trees, are not located on steep slopes, and do not increase impervious surface coverage.

5. Extend tree coverage requirements to the Urban and Rural Tiers.

The UDO has no requirement for tree coverage in the Urban or Rural Tiers. This situation has led to citizen concerns about inappropriate infill development, particularly in the Urban Tier, that does not match the character of older neighborhoods with mature groves of trees. Examples exist of residential development in the Urban Tier that has completely denuded the site of trees with no requirement to replace them.

Steering Committee. The Steering Committee recommends that the UDO be amended to extend tree coverage requirements to the Rural Tier, with the same requirements as the Suburban Tier, but allow for those tree coverage areas to be located on residential lots rather than within common areas. UDO amendments should extend tree coverage requirements to the Urban Tier for residential developments at half the amount required in the Suburban Tier.

6. Redefine specimen trees.

The current definition of specimen trees in the UDO is less stringent than that found in neighboring jurisdictions, such as Chapel Hill and Raleigh.

Steering Committee. The Steering Committee recommends amending the UDO to define a “specimen tree” as:

- Pine trees over 18 inches dbh;
- Hardwood trees over 15 inches dbh; and
- North Carolina native hardwood species over 10 inches dbh.

7. **Require that specimen trees be protected as part of a tree protection area.**

Specimen trees are large, mature trees that provide many environmental and other benefits to the community. Preserving specimen trees is beneficial to all. However, preservation of a specimen tree can be problematic if it forces a developer to configure the site layout in a way that is inefficient or out of context with surrounding development.

Steering Committee. The Steering Committee recommends that the UDO be amended to require that specimen trees be protected within buffer areas unless removal is required for site and/or utility access. The Committee recommended that the UDO allow greater tree coverage credit for the preservation of specimen trees outside of any required buffers.

Concern. Further research should be conducted on the possibility of enacting greater protection for rare and/or champion trees, based on a link to sustainability. Possible incentives for protecting these trees should be investigated.

VI. Next Steps

The policy recommendations summarized in this report represent conscious changes to Durham's development regulation for the purposes of protecting environmental resources. These recommendations by the Steering Committee for UDO changes will be presented to the Durham Joint City-County Planning Committee (JCCPC) in June, 2009. The JCCPC may then direct the staff to initiate specific UDO text changes to implement these changes. Given the breadth of the proposed changes, preparing UDO text changes could take several months. Specific UDO text changes would be brought back to the JCCPC for review prior to being forwarded to the City Council and Board of Commissioners for consideration. The Steering Committee has asked for the opportunity to review UDO text changes prior to consideration by the governing boards.

Many of the policy recommendations have staffing implications. They may require additional qualified staff to review site plans and development plans, or to process and issue permits. Prior to the consideration by the governing boards of any UDO text changes, the staff recommends performing an implementation analysis to identify specifically what resources would be required to implement these enhancements. In addition, during the process of drafting ordinance language to enforce these policies, staff will coordinate with other state and local agencies regarding new environmental policies and rules, such as new regulations for Jordan Lake and the Cape Fear River Basin, etc.

Table 1, Summary of Policy Options

Policy Option	Steering Committee	Concerns
Sedimentation and Erosion Control		
1. Lower the threshold for the size of land disturbance that requires an erosion control plan. <i>UDO Reference 3.8.1 and 12.10.3A</i>	Require an Erosion Control Plan for all land disturbance activities over 20,000 square feet in size, and that the Plan be submitted and stamped by a certified professional engineer.	The Steering Committee was concerned about the availability of staffing adequate for administration and enforcement, and potentially unreasonable cost for individual homeowners.
2. Require skimmers in sediment traps or basins. <i>UDO Reference 12.10.6</i>	Require skimmers in traps and basins.	--
3. Decrease the incentive for the use of skimmers. <i>UDO Reference 12.10.3C</i>	If skimmers are required in all traps and basins, then no incentive is required. However, the minimum basin size should be 1,800 cubic feet in the Downtown, Compact Neighborhood, and Urban Tiers; and 3,600 cubic feet in the Suburban and Rural Tiers.	--
4. Decrease the size of drainage areas for a skimmer sediment trap. <i>UDO Reference 12.10.3C</i>	No consensus.	Further research on the efficacy of smaller drainage areas is warranted.
5. Increase design standards for traps and basins from 10-year to 25-year storm. <i>UDO Reference 12.10.7</i>	No consensus.	Further research is necessary about the potential environmental benefits and possible impacts future development.
6. Tighten stabilization requirements after land disturbance. <i>UDO Reference 12.10.6B, 12.10.6C, and 12.10.7B.5</i>	Require the stabilization, as follows: <ul style="list-style-type: none"> • A maximum of ten calendar days on moderate slopes; • A maximum of seven calendar days on steep slopes; an • A maximum of seven calendar days on traps, basins, and diversion ditches. 	Instituting the above recommendation may require a re-evaluation and redefinition of steep and moderate slopes. Created as well as natural slopes should be included in the definition. The minimum size of a steep or moderate slope should also be examined. The Committee did not recommend requiring a minimum stabilization period of 14 calendar days for all other areas.

Water Quality and Stream Buffers		
<p>1. Increase the required stream buffer widths. <i>UDO Reference 8.5.2, 8.5.4, and 8.7.2E</i></p>	<p>Require the stream buffers as follows:</p> <ul style="list-style-type: none"> • 100 feet on all perennial and intermittent streams in the Suburban and Rural Tiers; • 50 feet on all perennial and intermittent streams in the Downtown and Compact Neighborhood Tiers; and • 100 feet on all perennial and intermittent streams in the Urban Tier, which could be reduced to 50 feet through an approval process with additional sedimentation and erosion controls. <p>The Steering Committee also recommended that the UDO use the zone method for all 100-foot buffers, as follows:</p> <ul style="list-style-type: none"> • 75-foot stream bank undisturbed zone; and • 25-foot outer managed zone. <p>Do not allow platted lots to incorporate the undisturbed stream buffer. Allow for additional buffer area to be included in density calculation.</p>	<p>The Steering Committee expressed concerns about future environmental enhancements to address steep slope considerations, street standards, reducing setbacks by right along stream buffers, and regulating buffer width by soil type. The staff has serious concerns about using soil type to regulate buffer width due to the lack of reliable data and administrative costs.</p>
<p>2. Require buffers on smaller order streams. <i>UDO Reference 8.5</i></p>	<ul style="list-style-type: none"> • No support for stream buffers for smaller order streams. • Support for requiring buffers where there is a gap in a perennial or intermittent stream. • Support for requiring buffers at the ends of intermittent streams. 	<p>Regulating and enforcing buffers on smaller streams could be resource and time intensive.</p>
<p>3. Reduce the size of wetlands that require a buffer. <i>UDO Reference 8.9</i></p>	<p>Require buffers on all wetlands that are contiguous to a stream buffer. Buffer should be the same size as the corresponding stream buffer.</p>	<p>--</p>
<p>4. Increase the size of wetland buffer width. <i>UDO Reference 8.9</i></p>	<p>Increase the wetland buffer to 50 feet for wetlands larger than one acre that are not contiguous to a stream buffer.</p>	<p>--</p>

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5. Limit the ability to construct stream crossings. <i>UDO Reference 8.5.5, 8.7, and 13.6</i>	Maintain present regulations.	--
6. Limit the ability to pipe streams. <i>UDO Reference 3.15, 8.5.5, and 8.5.6</i>	Maintain present regulations.	--
Site Preparation		
1. Redefine mass grading. <i>UDO Reference 6.2.4, 8.3.1, 9.5.1, and 12.10.3</i>	Redefine mass grading as, “The grading of four acres or more at one time to prepare land for construction. This definition includes grading necessary to install required infrastructure such as roads.”	
2. Require fingerprint grading for single-family subdivisions. <i>UDO Reference 9.5 and 12.10.3</i>	Require fingerprint grading strategies for single-family subdivisions with lots of greater than 10,000 square feet.	--
3. Require phased grading plan for mass grading. <i>UDO Reference 9.5.1 and 12.10</i>	Large, phased residential developments should be required to grade based on phasing plan with no acreage limit.	Site plan approval expiration should not go into effect due to phased grading requirements.
4. Require a staged grading plan. <i>UDO Reference 12.10</i>	Require a staged grading plan under the following conditions: <ul style="list-style-type: none"> • Only applicable to developments that fall under the new mass grading definition; • The staged grading plan should be submitted during construction drawing phase; and • A land disturbance permit would not be issued until the staged grading plan is approved. 	--
5. Amend the land disturbance buffer requirements. <i>UDO Reference 9.5.1</i>	Apply land disturbance buffers to all areas where mass grading, under the new definition, will occur. Rename them “mass grading buffers.”	

<p>6. Increase the width of required land disturbance (mass grading) buffers. <i>UDO Reference 9.4.1 and 9.5</i></p>	<p>Increase the land disturbance (mass grading) buffers to the State allowed maximum in the Rural and Suburban, and Urban Tiers, which:</p> <ul style="list-style-type: none"> • 65 feet for property edges adjacent to existing roads; • 65 feet for property edges adjacent to developed properties (including properties for which a plan for development has been proposed or approved); and • 32 feet for property edges adjacent to undeveloped properties. <p>Do not require a buffer within the Urban Tier on edges that require a build-to line. In addition, remove all mass grading buffer requirements in the Compact Neighborhood and Downtown Tiers, unless the edge is adjoining a residential use or zone in the Urban or Suburban Tier.</p>	<p>--</p>
<p>7. Limit allowable mass grading buffer intrusions. <i>UDO Reference 9.5</i></p>	<p>Remove from consideration.</p>	<p>--</p>
<p>8. Clarify types of clear cutting in the UDO. <i>UDO Reference 8.3.4 and 16</i></p>	<p>Adopt the State definition of forestry and to clarify non-forestry activities that are to be regulated at the local level.</p>	<p>--</p>
<p>9. Require documentation of legitimate forestry activities. <i>UDO Reference 8.3</i></p>	<p>Require property owners to register an approved FMP with the Durham City-County Planning Department.</p>	<p>Although not a UDO issue, the Steering Committee suggested that the Durham City-County Planning Department work with the Durham County Cooperative Extension Office to educate property owners about new rules regarding forestry and clear cutting.</p>
<p>10. Require a clear cutting permit. <i>UDO Reference 8.3</i></p>	<p>Require a clear cutting permit to harvest timber of 12,000 square feet in area or greater, where a FMP or an approved site plan has not been approved.</p>	<p>Although not a UDO issue, the Steering Committee suggested that the Durham City-County Planning Department work with the Durham County Cooperative Extension Office to educate property owners as to new rules regarding forestry and clear cutting regulation.</p>

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<p>11. Establish penalties for violation of clear cutting regulations. <i>UDO Reference 8.3, 9.5.3, and 15.4.7</i></p>	<p>Require revegetation, but reached no consensus on the level of revegetation. No consensus on whether or not a fine should be imposed.</p>	<p>Although not a UDO issue, the Steering Committee suggested that the Durham City-County Planning Department should work with the Durham County Cooperative Extension Office to educate property owners as to new rules regarding forestry and clear cutting regulation.</p>
<p>Tree Protection and Preservation</p>		
<p>1. Allow for tree coverage credit for smaller trees. <i>UDO Reference 8.3.1</i></p>	<p>Allow partial credit for a healthy stand of young pines or hardwoods of less than two-inch caliper. Full credit could be obtained if the stand is supplemented with a certain percentage of smaller canopy trees or understory planting.</p>	<p>This provision should not include street trees.</p>
<p>2. Allow for smaller replacement trees for tree coverage calculations. <i>UDO Reference 8.3.1</i></p>	<p>Allow for native, hardwood, understory species of less than 2-inch dbh to count towards tree replacement. UDO amendments would increase the percentage of replacement trees that can be less than 2.5 inches dbh (currently 50 percent).</p>	<p>The species that will be allowed to count under this provision should be clearly defined in the landscape guidelines. Staff should be specific about a recommendation for the percentage of trees that will need to be 2.5 inches dbh for replacement.</p>
<p>3. Allow greater flexibility in the dimensions of tree protection areas. <i>UDO Reference 8.3.1</i></p>	<p>Allow for greater flexibility in tree protection areas regarding width and size to remove the incentives to remove existing trees. A minimum width and area would still be required.</p>	<p>--</p>
<p>4. Modify the uses allowed within tree coverage areas. <i>UDO Reference 8.3.1 and 8.3.2</i></p>	<p>Prohibit stormwater and utility facilities that do not allow trees to grow to be counted as part of a tree coverage area. Allow a percentage of amenity areas to be located within the tree coverage area as long as those amenities do not disturb existing trees and are not located on steep slopes.</p>	<p>--</p>

<p>5. Extend tree coverage requirements to the Urban and Rural Tiers. <i>UDO Reference 8.3.1</i></p>	<p>Extend tree coverage requirements to the Rural Tier, with the same requirements as the Suburban Tier, but allow for those tree coverage areas to be located on residential lots rather than within common areas. Extend tree coverage requirements to the Urban Tier for residential developments at half the amount required in the Suburban Tier.</p>	<p>--</p>
<p>6. Redefine specimen trees. <i>UDO Reference 8.3.3C.2</i></p>	<p>Define a “specimen tree” to include.</p> <ul style="list-style-type: none"> • Pine trees over 18 inches dbh; • Hardwood trees over 15 inches dbh; and • North Carolina native hardwood species over 10 inches dbh. 	<p>--</p>
<p>7. Require that specimen trees be protected as part of a tree protection area. <i>UDO Reference 8.3.1 and 8.3.3C</i></p>	<p>Require that specimen trees be protected within buffer areas unless removal is required for site access. Allow greater tree coverage credit for the preservation of specimen trees outside of any required mass grading buffers.</p>	<p>Further research should be conducted on the possibility of enacting greater protection for rare and/or champion trees, based on a link to sustainability. Possible incentives for protecting these trees should be investigated.</p>