



Memorandum

To: Stormwater Management Task Force

From: CDM

Date: March 29, 2007

*Subject: Wake County Stormwater Task Force Meeting #11 Summary –
Tools & Strategies Module*

On March 15, 2007, CDM and Wake County staff facilitated the eleventh meeting for the Wake County Stormwater Management Task Force. Attendees were provided with meeting materials, including a copy of the agenda, materials for a voting exercise, and a PowerPoint presentation. All meeting materials can be found on the Task Force website at <http://www.wakegov.com/environment/stormwater/>.

The meeting began with a welcome by Commissioner Kenn Gardner, Chairman of the Wake County Stormwater Task Force. CDM staff then provided a brief update on the work plan status. Meeting #11 was the fifth meeting of the “Tools and Strategies” module. In this meeting, the Task Force continued reviewing detailed evaluations of toolsets that scored well when compared to the evaluation criteria. The “Conservation, Restoration, Rehabilitation & Replacement” and “Development/Re-Development Standards” toolsets were evaluated.

Work Plan Update

Brenan Buckley with CDM provided a brief update on the status of the work plan. Meeting #11 was the last meeting of the “Tools and Strategies” module before moving towards the recommendations phase. In the two meetings following the “Tools” discussion, Task Force members will discuss the results of the voting from previous meetings and begin to develop and review draft recommendations for the Task Force. In parallel to this process, Stormwater Managers in the County will convene to review the tools and recommendations in order to provide additional technical support.

Conservation, Restoration, Rehabilitation and Replacement Tools

The priority tool identified by the Task Force in the Conservation, Restoration, Rehabilitation and Replacement tools category was the following:

“Preserve land through open space acquisition, buffers, conservation easements, etc.”

In response, Chris Snow of Wake County was invited to present information on the Wake County Parks and Open Space Plan. The Open Space Plan was introduced in 2003 with the purpose of protecting land and water for the future. Development of the consolidated plan includes participation from all 13 local governments. A \$26 million bond was approved in 2004 to support the acquisition and protection of open space, as designated in the plan. At present, \$3.7 million remains from the bond.

The County has identified five acquisition projects totaling \$8.8 million. Since insignificant funds remain to fund the projects, the County is in the process of developing a tool to prioritize parcels for acquisition. The current approach for prioritization is subjective (focusing on aesthetics, etc.). One goal of the new prioritization tool would be to identify parcels that are best suited for water quality protection. A GIS-based approach that would provide an efficient way to make preliminary decisions is being considered. One criteria under consideration for the decision making process is the parcel's proximity to streams.

Following the presentation, Mr. Snow answered questions from the Task Force and received comments on the selection criteria. A summary is below:

- Is floodplain a target acquisition area? *Yes, floodplain is a target area since it's adjacent to streams.*
- Are water bodies included in the open space calculation? *Yes, water bodies are included as open space. It was unknown whether or not streams are included.*
- Are buffers, etc. updated to add to open space? *Yes, the County receives information from the Towns once per year on buffers. The data is delivered on plats so there has been some difficulty with consolidation of all the plans. It might be helpful for the Towns to develop shapefiles of all buffer areas.*
- Are riparian buffers and water supply watershed buffers part of the open space formula? If not, then why? *No, buffers are not part of the total open space budget calculation unless the buffers are publicly-owned. Historically, buffers have never been considered but Mr. Snow suggested that they probably should be.*
- For planning purposes, is there a way to calculate how much land is protected but not on public land? *Yes, this is possible. The County would need to coordinate with Towns to locate buffers on private property.*
- Is there going to be another set of criteria focusing on the threat of development? *This is being factored in. The goal would be to have equal participation from all municipalities regardless of their development trends.*

Development and Redevelopment Standards Tools & Strategies

The next major topic discussed at the meeting was “Development and Redevelopment Standards Tools.” Development standards are tools that define the character, form and quality of development activities, commonly codified in a uniform development ordinance. The priority tools identified for this category were the following: 1) strategies to reduce impervious surface and 2) site-level flood controls.

As explained in earlier meetings, urbanization causes an increase in total runoff volume which has an impact on streams and rivers in the County (both in water quantity and quality). We address these impacts through runoff control measures (peak and volume control), runoff reduction measures (impervious surface limits and low impact development), and risk prevention measures (floodplain restrictions and riparian buffer rules).

Runoff Control Measures

Brenan Buckley of CDM facilitated a discussion on the runoff control tools currently used within the County. The minimum control measures have been set by the Neuse Rules, NPDES Phase I and NPDES Phase II permits. These rules generally focus on peak controls for stormwater runoff of small storm events with the goal of addressing water quality. However, the Task Force expressed concern about flood control in addition to water quality control. Some communities in Wake County require control of larger storm events to address flooding issues. Also, Wake County’s stormwater ordinance focuses on control of runoff volume as opposed to peak runoff rate. Task Force members were presented with pros and cons of each control strategy (peak vs. volume and flood vs. water quality) and asked to vote on related issues. Voting results are attached.

Runoff Reduction Measures

Two aspects of runoff reduction measures were discussed. The first method considered changes to development ordinances that require installation of impervious surfaces and the second method considered components of low impact development. For the first method, a case study of a typical residential area was presented to provide examples of the relative amount of impervious surface associated with various features (driveways, sidewalks, streets, and parking lots) within the development. The purpose of the case study was to show the potential runoff reduction associated with changes to these components. The highest total impervious area within the development was associated with streets. However, reducing street widths by 20 percent only reduced the total impervious surface percentage of the entire development by 1.3 percent. At the conclusion of the case study, the Task Force was asked to vote on a list of questions regarding runoff reduction measures (see attached for results).

Risk Prevention Measures

Risk prevention measures are those that prohibit development near hazardous areas, such as streams that may flood in larger storm events. Examples of risk prevention measures include prevention of development in the 100-year floodplain and the protection of streamside buffer areas from disturbance. A table of ordinances within the county related to these two examples was presented. Four of the County's 13 jurisdictions restrict all development in the 100-year floodplain, as recommended in the Wake County Watershed Management Plan. Six of the County's 13 jurisdictions require 100-foot riparian buffers in the WSW and 50-foot buffers on all other streams, as recommended by the Wake County Watershed Management Plan. Following the presentation of these ordinances, the Task Force was asked to consider if a preventative approach to stormwater management was desirable. Voting results are attached.

Illicit Discharge/Good Housekeeping Tools

As a follow-up to Meeting #10, the project team provided information related to Illicit Discharge Detection and Good Housekeeping tools. These tools are minimum requirements of the State's NPDES Phase II stormwater permit. Therefore, most communities in the County will be required to implement these programs within the next three to five years. The project team defined each of these tool sets, listed examples, and presented the minimum required activities. The Task Force members were asked to provide any additional suggestions regarding these programs.

Wrap-Up and Path Forward

The next Task Force meeting will be held on April 26, 2007. At this meeting, the Task Force will be presented with the results of the voting analysis from prior meetings and suggestions from the area stormwater managers. The project team has begun to develop recommendations based on the voting and the suggestions of the stormwater managers. These recommendations will be presented and discussed.

Development Standards

Activity	Votes (choose all that apply)	Comments and Suggestions
1. Stormwater controls should focus on:		
1a. water quality by meeting the minimum standards required by the Neuse Rules and the NPDES Phase II Rules.	required	5 yr., 24 hr. min.
1b. flood control by providing some additional level of protection from nuisance flooding.	7	Optional for Local Government - this is a potential problem, but in my view it is not the most serious. County-wide. Not unless structural damage occurs. We should be careful trying to address nuisance flooding, Pandora's box. Development should be such that nuisance flooding does not occur to begin with. BMP's can be used to reduce peak discharges and allow infiltration.
1c. flood control by providing some additional level of protection from roadway and structural flooding.	8	By jurisdiction, some probably can't do it. Handle with stricter buildings codes.
1d. peak flow controls.	7	1d and 1e go hand in hand. Do we want ponds everywhere on private property.
1e. volume controls.	10	Allow performance based. Volume controls are the only way to ultimately meet the Clean Water Act. Give performance criteria not prescriptive criteria.
2. Should we review and consider modifications to development ordinances that prescribe the amount of impervious surface that is required, such as for streets and parking?		
2a. yes.	10	Don't require C&G/Reduce pavement widths except in coastal areas. Reduce parking requirements. Absolutely! If the net result is better protection of water resource. Where curb and gutter is required by ordinance, BMPs should be required at the outlets. Also, we need to get away from parking minimums, focus on parking maximums.
2b. no.	1	Allow performance based. If the result is lower level of water resource problem.

Development Standards

Activity	Votes (choose all that apply)	Comments and Suggestions
3. Should we consider preventative approaches to managing impacts due to flooding by:		
3a. limiting development in the existing conditions floodplain?	10	To assume the future conditions are extremely different, is to assume a change in hydrology, stream erosion, etc... Standards should try to assure the after development discharge does not significantly differ from the before discharge.
3b. limiting development in the future conditions floodplain?	11	Once FCFP are defined and that basis accepted. Future conditions aren't that far off into the future with periodic review and revisions.
3c. none of the above.		
4. Should we consider buffer platting requirements that preserve the buffer as open-space, HOA, or municipally-owned land to reduce nuisance flooding and ensure that the buffer is not disturbed?		
4a. yes.	13	Durham does too. Already doing this in Garner. Should be buffer or flood fringe, whichever is greater. Exception could be in Town Center areas.
4b. no.	1	