

Tool: Post-Construction Runoff Controls

Post-construction runoff control measures that reduce the amount of runoff generated at the source (through a reduction of impervious surface) or control the increase in runoff generated from a developed site through the used of structural BMPs. In particular, the Task Force aimed to control the impacts of flooding events (10-year and larger storms) in addition to the NPDES Phase II requirements for smaller, water quality storms (1-yr storm).

What is a potential Task Force recommendation for implementation of this tool at the conclusion of this process?

The following subsections describe the suggestions related to post-construction stormwater runoff controls. However, specific recommendations are not identified in this document. It has been proposed that the Stakeholders Group associated with the H&H Modeling Recommendation #1 be used to also drive decisions on this area based on the assumption that various regulatory scenarios can be tested with the models to better predict the benefits of any post-construction runoff control regulations.

The following suggestions set forth by the Task Force regarding Post-Construction Stormwater Runoff Controls can be divided into two categories: 1) Source Controls and 2) Treatment Controls.

- ***Source Controls (i.e. impervious surface limits and LID practices)*** - Review and modify, as necessary, development ordinances to reduce the amount of impervious surface required for new development. The review process will evaluate potential changes to the following: 1) roadway width, 2) parking requirements, 3) setbacks, and 4) curb & gutter requirements.

As a first step, ordinances for each jurisdiction will be reviewed to identify all requirements that impact the amount of impervious surface installed on properties. These requirements will then be compared with model ordinance language that allows for low impact development and other “smart growth” strategies.

A Task Force or technical work group will be convened to review the results of these comparisons and develop an ordinance tailored to Wake County that maintains the aesthetic qualities of existing development in the County while also allowing for the flexibility of developers to implement designs that minimize the impacts of development on local streams. In particular, these ordinances will include potential changes to minimum street widths, minimum parking requirements, curb and gutter requirements, and minimum setback requirements.

- ***Treatment Controls (i.e. structural BMPs)*** - The Task Force members agreed that adding flood protection measures would address some of the flooding concerns identified in the Task Force objective statements. As such, this suggestion would

add an additional requirement for control of the 10-year, 24-hour design storm in addition to control of the 1-year, 24-hour design storm. Each of these requirements may be used jointly with the source control measures identified above. The H&H modeling performed in Recommendation #1 will be used to test these suggestions and explore other alternative control practices.

A Task Force or technical work group will review the results of the model tests and determine if these controls are appropriate and, if so, what size storm should be controlled. Also, this group will consider the use of volume-based controls in lieu of traditional peak runoff rate controls. Lastly, the group will consider opportunities to meet with EPA Region 4 regarding restrictions on the use of regional stormwater detention structures.

What problems identified by the Task Force (Objectives) does this tool address?

The implementation of this tool will directly address structural and nuisance flooding concerns, as identified by the Task Force, in addition to water quality goals required by NPDES Phase II regulations. As proposed in this document, the tool will address nine of the 14 Task Force objective statements

What is the minimum regulatory requirement, if any, for this tool?

There is no minimum regulatory requirement for controlling “flood-level” events (10-year and larger storms). State rules for post-construction stormwater control primarily address water quality issues (control the 1-yr storm and remove 85% of TSS). Similarly, there is no specific regulatory requirement that requires the County and its jurisdictions to make changes to existing development ordinances to reduce the amount of impervious surface that is required on-site.

How is this tool currently applied within Wake County?

A majority of the development ordinances in Wake County follow traditional design standards, which include wider roads, generous parking requirements, and long setbacks. As written, these ordinances can limit the flexibility of developers to propose unique approaches (such as low impact development or LID) that may reduce the impact of the development on the local environment.

In terms of treatment controls or structural BMPs, all jurisdictions in Wake County have or will have post-construction stormwater controls for the 1-yr, 24-hour design storm as per the NDPE MS4 stormwater regulations. Only the City of Raleigh, Town of Apex and the Town of Wake Forest currently require post-construction stormwater controls to address water quantity issues. These two jurisdictions require control of the 10-year, 24-hour design storm in addition to control of the 1-year (or 2-year) storm event.

Is there an opportunity for collaboration on the implementation of this tool?

Local jurisdictions may collaborate and agree on a uniform, minimum design standard for post construction stormwater controls that includes consideration of structural BMPs as well as consideration of source controls to reduce the amount of runoff generated from a site.

What is the expected outcome of this potential recommendation?

A design standard that addresses multiple elements of the Task Force objectives, which includes concern for the generation of additional runoff volume from new development and issues related to flooding created from higher peak runoff rates. This recommendation also may result in changes to development ordinances regarding the roadway width, parking requirements, setbacks, curb & gutter requirements and more.