

# SNAP v4.1 Tool Definitions Cheat Sheet

## Project Concepts

**Built-upon area** (*From N.C.G.S. 143-214.7*) means impervious surface and partially impervious surface to the extent that the partially impervious surface does not allow water to infiltrate through the surface and into the subsoil. "Built-upon area" does not include a slatted deck; the water area of a swimming pool; a surface of number 57 stone, as designated by the American Society for Testing and Materials, laid at least four inches thick over a geotextile fabric; or a trail as defined in G.S. 113A-85 that is either unpaved or paved as long as the pavement is porous with a hydraulic conductivity greater than 0.001 centimeters per second (1.41 inches per hour).

**Built-upon area** (*Tool-specific concept*) uses assigned percentages for different land cover types and SCMs in the Tool. The Tool checks pre- and post-project BUA as a method of QA/QC. BUA does not include local government BUA definitions which may be more expansive.

**Common plan of development** (*From 15A NCAC 2H .1002(8)*) means a site where multiple and distinct development activities may be taking place at different times on different schedules but governed by a single development plan regardless of ownership of the parcels. Information that may be used to determine a "common plan of development" include plats, blueprints, marketing plans, contracts, building permits, public notices of hearings, zoning requests, and infrastructure development plans.

**Disturbed Area** (*Tool-specific concept*) is used to determine applicability of Nutrient Management Watershed Rules. This is the area covered by land-disturbing activity but may have extended local definitions.

**Impervious Surface** (*Tool-specific concept*) land cover types that have 95% of their precipitation run off. In the Tool, Stormwater Control Measures (SCMs) are counted as "impervious" because 100% of the rainfall that they intercept contributes to the total volume the SCM receives. ***Impervious surface is not the same as built-upon area in the Tool.***

**Land-disturbing activity** (*From N.C.G.S. 113A-52*) means any use of the land by any person in residential, industrial, educational, institutional or commercial development, highway and road construction and maintenance that results in a change in the natural cover or topography and that may cause or contribute to sedimentation.

**Project Area** (*From 15A NCAC 02H .1002(38)*) means the proposed development activity for which an applicant is seeking a stormwater permit from the state or other entity in accordance with this Section. The Project shall exclude any land adjacent to the area disturbed by the project that has been counted as pervious by any other development regulated under a federal, State, or local stormwater regulation. Owners and developers of large developments consisting of many linked projects are encouraged to develop a master plan that illustrates how each project fits into the design of the large development.

**Project Area** (*Tool-specific concept*) is the total number of square feet comprising the project site to be analyzed. Generally, this is the entire parcel, excluding agricultural operations and undisturbed area counted in another project. This should additionally include all area draining to modeled SCMs if it extends beyond parcel boundaries.

## Development Activity Types

**Development** (*From N.C.G.S. 143-214.7*) is any land-disturbing activity that increases the amount of built-upon area or that otherwise decreases the infiltration of precipitation into the subsoil. When additional development occurs at a site that has existing development, the built-upon area of the existing development shall not be included in the density calculations for additional stormwater control requirements, and stormwater control requirements cannot be applied retroactively to existing development, unless otherwise required by federal law.

**Development – New** (*Tool-specific concept*) means a development project on previously undeveloped land, that is land lacking pre-existing built-upon area. This case is sometimes referred to by local planners and others as greenfield development.

**Development – Expansion** (*Tool-specific concept*) means a development project involving a net increase in built-upon area.

**Existing development** (*From 15A NCAC 02H .1002*) means those projects that are built or those projects that have established a vested right under North Carolina law as of the effective date of the state stormwater program or applicable local government ordinance to which the project is subject, based on at least one of the following criteria:

- a) Substantial expenditure of resources (time, labor, money) based on a good faith reliance upon having received a valid local government approval to proceed with the project;
- b) Having an outstanding valid building permit in compliance with N.C.G.S. 153A-344.1 or N.C.G.S. 160A-385.1; or
- c) Having an approved site specific or phased development plan in compliance with N.C.G.S. 153A-344.1 or N.C.G.S. 160A-385.1.

**Existing Development – Retrofit** (*Tool-specific concept*) means a project that reduces loading by converting an existing developed land cover to a lower-loading type or retrofitting an SCM into a developed landscape, or by a combination of these.

**Redevelopment** (*From N.C.G.S. 143-214.7*) is any land-disturbing activity that does not result in a net increase in built-upon area and that provides greater or equal stormwater control to that of the previous development.

## Land Cover Definitions

**Roof** – any impervious surface covering structures that is primarily getting nutrient deposition through dust or precipitation. These surfaces are raised above vehicular traffic and not affected by adjacent landscaping practices. This does not include the area of green roofs, which are treated as Land Taken Up By SCM.

**Roadway** – any paved or hard-packed surface intended for motorized traffic. This includes roads, streets, highways, on-street parking, road shoulders, road pull-offs, and bike lanes on the outside edge of roadways.

**Parking/Driveway/Sidewalk** – Parking/Driveway is any paved or hard-packed surface intended for parking and low-speed access of motorized vehicles to parking. This includes ordinary parking lots, driveways, parking decks, and drive-throughs. This does not include on-street parking. It also does not include permeable pavement, which is treated as Land Taken Up By SCM. Sidewalk is any paved or hard-packed surface intended for non-motorized traffic. This includes ordinary sidewalks, patios, paved/masonry paths, walkways, greenways, and bike paths separated from roadways.

**Other Pervious/Landscaping** – any vegetated area that is not protected by easements or covenants designed to protect existing vegetation and that generally supports low- to moderate-intensity development-related uses that include one or more of animal traffic, fertilization, mowing or other intentional vegetation management/maintenance. Vegetative cover can include lawn, landscaped area, open space, parkland, garden, golf course, or wooded area with a cleared, lawn, or otherwise maintained understory. **This includes Neuse/Jordan Riparian Zone 2 whether forested or not unless it is protected as forest.** This also includes areas with non-/less-vegetated pervious covers such as landscaping gravel and mulch.

**Protected Forest** – this is any wooded/forested area that is neither periodically/regularly mowed nor fertilized, is not managed according to a deferment for use value under forestry or a forest management plan, and where understory and groundcover are allowed to develop. Such areas tend to have minimal use (such as pervious-surface trails) and little management other than control of invasive species and disease. For New Development purposes, these are woods protected by covenants, easements, or other regulations that prevent its conversion to other pervious uses. This includes forests with conservation easements, Neuse/Jordan Riparian Zone 1, forested riparian zones protected by other regulations, and protected wetlands. For Existing Development purposes, this is any treed or forested area that is not regularly/periodically mowed or fertilized. Protected areas undergoing reforestation efforts, even with occasional mowing, can be considered forested if they are allowed to develop a natural understory and groundcover layer as canopy trees mature.

**CUSTOM LAND COVER** – this land cover type is set aside for uncommon land covers that don't fit well in the above set. This includes land covers such as open water, small agricultural areas, dog parks, and areas of #57 stone with a geotextile layer.

**LAND TAKEN UP BY SCM** – this land cover is set aside for the SCMs themselves. Most SCMs will have a land cover area greater than zero. Only underground installations that can have land covers above them can have an area equal to zero. Some SCMs have a land cover area the same as the area draining to it, such as green roofs.

## Stormwater and Nutrient Rule Concepts

**Buy-Down Threshold** is the loading rate that must be achieved in order to buy offsite nutrient credits to meet the nutrient load reduction needed.

**Event Mean Concentration (EMC)** is the concentration of nitrogen or phosphorus averaged over a rainfall event – either in runoff from a landcover type or discharged from a Stormwater Control Measure. *Expressed in milligrams per liter (mg/L) of nitrogen or phosphorus.*

**Load** is the mass of nitrogen or phosphorus that a stream or river carries over a given period of time. *Expressed in pounds per year (lb/yr) of nitrogen or phosphorus from a specific area.*

**Loading rate** is the mass of nitrogen or phosphorus contributed to a stream or river from a unit area of land over a given period of time. *Expressed in pounds per acre per year (lb/ac/yr) of nitrogen or phosphorus.*

**Load Target/Loading Rate Target** is the calculated annual load or loading rate that needs to run off from a project to achieve a nutrient rule requirement.

**Load Treatment Balance (“Credit”/“Debit”)** is how much of the Nutrient Load Reduction still needs to be achieved through onsite treatment or buy-downs. Sets Nutrient Offset value if positive. A negative value indicates overtreatment.

**Nutrient Load Reduction Needed** is a measure of how much stormwater treatment you need based on the Post-Project condition before installing SCMs and the type of project. Reduction needed = the export load Post-Project Whole Site without SCMs minus the target load.

**Off-site run-on** is runoff that comes onto the site from off-site when the drainage area goes beyond the extent of the parcel boundary. If this runoff goes to a modeled SCM you need to include it in your model.

**Percent of Full Size** (of an SCM) is relative to the runoff treatment volume required for your area. In all areas except the Coastal Counties, designers must calculate runoff volume from the 1” storm and design the SCM size accordingly.

**<SCM Type> per MDC** means the SCM has been designed to meet the new Stormwater Minimum Design Criteria Rules (15A NCAC 02H .1050 through .1062). **With the exception of Bioretention**, all SCM types designed to meet the 2009 Stormwater BMP Manual meet the new MDC (if they’re in the Manual!). ***Your local government is not obligated to allow use of all the SCM types in the SNAP Tool in your jurisdiction.***