

5.9 NATURAL AREA PRESERVATION

DEFINITION OF NATURAL AREA PRESERVATION

A stormwater credit is given when natural areas are conserved at development sites, thereby retaining pre development hydrologic and water quality characteristics. For low impact development compliance, the preserved area is included in the impervious cover calculations to determine the gross development and cluster development impervious cover levels. The credit for stormwater basin volume is computed by subtracting the preserved area from the area draining to individual water quality basins. This credit is granted for all preservation areas permanently protected under conservation easements or other locally acceptable means. Examples of natural area conservation include:

- Wooded and meadow areas protected from disturbance
- Wetlands and associated buffers
- Creek buffers
- Other lands in protective easement (floodplains, open space, steep slopes)
- Stream systems

DA_{eff} = DATOT - ANA

Where: DA_{eff} = Effective drainage area

ANA = Natural area preserved

DATOT = Total drainage area

To receive the credit, the proposed preservation area:

- Must not be disturbed during project construction (e.g., cleared or graded) except for temporary impacts associated with selective management of invasive vegetation such as ashe juniper and incidental utility construction or mitigation projects (selective clearing of invasive vegetation shall be performed in a manner so as to not disturb the soil);
- Must be protected by having the limits of disturbance clearly shown on all construction drawings and be delineated in the field except as provided for above;
- Must be located within an acceptable conservation easement or other enforceable instrument that ensures perpetual protection of the proposed area. The easement must clearly specify how the natural area vegetation shall be managed and boundaries will be marked (Note: managed turf (playgrounds, regularly maintain open areas) is not an acceptable form of vegetation management); and
- Must be located on the development project.

Example calculation: The required water quality volume for a ten-acre site with three acres of impervious area and three acres of protected conservation area before the credit would be:

Impervious cover = 30%

1.5-inch storm runoff volume = 0.48 inches based on Equation 4-9

Water quality volume = (0.48 inches) * (10 acres) * (43,560/12) = 17,424 cubic- feet.

Applying the credit, three acres of conservation area is subtracted from total site area, which yields a smaller water quality basin volume. The impervious cover amount is not revised to reflect the smaller drainage area:

DA_{eff} = (10 acres) - (3 acres) = 7 acres

Effective impervious cover = 30%

1-year runoff volume = 0.48 inches based on Equation 4-9

Water Quality Volume = (0.48 inches) * (7 acres) * (43,560/12) = 12,196 cubic-feet.

The BMP water quality storage volume is reduced by 30% in this example.