5.12 DEALING WITH MULTIPLE STORM WATER CREDITS

Site designers are encouraged to perform a development design that works with natural topography, soils, and vegetation to utilize as many credits as possible. Greater reductions in stormwater storage volumes can be achieved when credits are combined (e.g., disconnecting rooftops and protecting natural conservation areas). The use of multiple credits can gain compliance with the Low Impact Development (LID) approach or significantly reduce water quality basin size and cost.

Example: Combined Use of Multiple Stormwater Credits to Achieve Alternate Standards Compliance

Development area = 10 acres
40 single-family lots
Lot sizes average 9,500 square feet (70 feet by 135 feet)
Lot impervious cover = 2,500 square feet/lot per Table 4-2
Use roadside swales, not curb and gutter to gain Alternate Standards Compliance
Proposed impervious cover = 3.4 acres = 34%
Maximum allowed impervious cover for Low Impact Development = 20%
Need to use Stormwater Credits to achieve 20% effective impervious cover

Use pervious pavement credit for driveways; receive 90% I.C. credit for pervious pavement area
Driveway Area = 800 square feet (50 feet long by 16 feet wide)
Ar = Allowable impervious cover reduction = (40 lots) * (800 sq ft) * (0.90) = 0.66 acres

Use roof-top disconnection credit for lots with slopes less than 5%

Flow length from home to street = 50 feet, however only 30 lots meet 5% slope limitation
Designer chooses not to include rainwater gardens or dry wells to gain additional credit
Impervious cover reduction = 60% per Table 5-1
Roof Area = 2500 – 800 (driveway area) = 1,700 square feet
Ar = Allow. Imp. Cover Reduction. = (30 lots) * (1,700 sq ft) * (0.60) / 43,560 = 0.70 ac
ICeff = (IC TOT) – (Sum of Ar) = (3.4 acres) - (0.70 + 0.66) = 2.0 acres
ICeff = Effective Impervious Cover = 2.0 / 10 = 20 %

Combining pervious driveways and disconnected impervious cover create a development project where the Low Impact Development approach is met and the project does not need to construct stormwater basins.

No water quality design for permanent BMPs is necessary. The designer may proceed to the preparation of an erosion and sedimentation control plan and coordinate with the jurisdictional stormwater authority to develop appropriate water quality education programs for residents.