Maricopa County
Planning & Development Department
Department Directive

Purpose:

1. To establish consistent practices in the application of composite value of Rational Method Runoff Coefficients (C) based on actual land uses for Subdivisions.
2. To ensure the composite value of runoff coefficients are applied consistently for all Subdivisions within Maricopa County.
3. To develop a procedure in calculating the composite value of runoff coefficients that will be an accepted method as part of the drainage plan review process for determining site retention and storm water conveyance requirements.

References:

Drainage Design Manual for Maricopa County, Vol. 1 - Hydrology.
Drainage Policies and Standards for Maricopa County (Draft Revised 01/11/13)
Maricopa County Zoning Ordinance, Section 1205 - Drainage Provisions.

Policy/ Procedures:

Approved Methods in Calculating Runoff Coefficients for Subdivisions

Method 1: Default Value

The default runoff coefficient values from Table 6.3 of the Drainage Policies and Standards Manual for Maricopa County will be used. The value selected will be based on the zoning of the project and not based on calculated dwelling units (DU) per acre. If the project has an RUPD, the runoff value will be based on the parent zoning.

Examples of this method are listed below:
1. R1-6RUPD with an overall DU per acre of 5.5: use .94
2. R1-8 with an overall DU per acre of 5.5: use .84
3. R1-8 with an overall DU per acre of 3.8: use .84
4. R1-10 with an overall DU per acre of 3.8: use .80

Method 2: Composite C Values - Subdivisions

The default runoff coefficient values from Table 6.3 of the Drainage Policies and Standards Manual for Maricopa County will be used. The design engineer will use the land use class for each residential building lot or non-drainage tract within the subdivision. The engineer can calculate the total amount of area for each land use based platted boundaries and apply the land use code for each area. Drainage tracts for subdivision will use the runoff coefficient for Class 700 - General Open Space (0.50) regardless of ground cover. Roadway right-of-ways will use the runoff coefficient for Class 600 - General Transportation (0.95).

An example of this method is listed below:

A subdivision is zoned R1-8 with a total of 70 acres, of which 45 acres are residential lots, 10 acres are right of way, and 15 acres are open space/drainage tracts (retention basins).

Lots   45 ac X .84 = 37.8   37.8+9.5+7.5=54.8
Right of Way 10 ac X .95 = 9.5   54.8/70 = .78
Open Space 15 ac X .50 = 7.5

The composite runoff coefficient (C) for this subdivision is 0.78.

Site retention and storm water conveyance facilities that use the Rational Method to determine design volumes/flows shall be based on the calculated composite runoff coefficient and the methods prescribed by the Maricopa County Drainage Design Manual – Volume 1 – Hydrology – Section 3.