

Land Cover for Stormwater Management  
Interim Guidance  
1/11/2021

Land cover in the City of Alexandria is used to calculate Stormwater Management (SWM) requirements and Water Quality Volume Default (WQVD) requirements.

Land cover is divided into three categories for SWM:

1. Forest and Open Space Area
2. Managed Turf Area
3. Impervious Area

Land cover is divided into two categories for the WQVD:

1. Pervious Area
2. Impervious Area

A pre- and post-development impervious area exhibit is required on all plans indicating the land cover areas for both SWM and the WQVD.

All soils in the City of Alexandria are considered “D” soils unless a soils test is performed that indicates a different soil type is present on site.

### **SWM Land Cover Calculations**

#### Forest and Open Space Land Cover

1. Land that will remain undisturbed OR will be restored to a hydrologically functional state including:
  - a. Portions of residential lots that will not be disturbed during construction,
  - b. Community open space areas that will not be mowed routinely, but left in a natural vegetated state (areas can be bush hogged no more than four times per year), and
  - c. Utility rights-of-way that will be left in a natural vegetated state (areas can be bush hogged no more than four times per year).
2. Surface area of stormwater BMPs that are NOT wet ponds, have some type of vegetative cover, and that do not replace an otherwise impervious surface. This includes:
  - a. Bioretention areas (with a soil/stone bottom layer on top of earth), dry swales, grass channels, extended detention (ED) ponds that are not mowed routinely, stormwater wetlands, soil amended areas that are vegetated, and infiltration practices that have a vegetated cover.
3. Other areas of existing forest and/or open space, including wetlands, that will be protected during construction and that will remain undisturbed.

#### Maintenance and Documentation for Forest and Open Space

All areas that will be considered forest/open space for stormwater purposes must have documentation that prescribes that the area will remain in a natural, vegetated state. Appropriate documentation includes: subdivision covenants and restrictions, deeded operation and maintenance agreements and plans, parcel of common ownership with maintenance plan, third-party protective easements, or other documentation approved by the City. Some activities may be allowed if prescribed in the documentation such as forest management, control of invasive species, replanting and revegetating, passive recreation (e.g., trails), and limited bush hogging.

### Managed Turf Land Cover

1. Portions of residential yards that are graded or disturbed, including residential utility connections,
2. Roadway rights-of-way that will be mowed and maintained as turf,
3. Turf areas intended to be mowed and maintained as turf within residential, commercial, industrial, and institutional settings, and
4. Landscaped areas that will be regularly maintained.

### Impervious Land Cover

1. Roadways, driveways, buildings, rooftops, parking lots, sidewalks, and other impervious areas,
2. Areas with compacted gravel,
3. All areas over structure. Vegetated areas over structure may be considered as green roof if designed per the latest edition of the DEQ BMP Clearinghouse, and
4. The surface area of stormwater BMPs that: (1) are wet ponds, or (2) replace an otherwise impervious surface. This includes vegetated roofs, pervious pavement, and urban bioretention areas contained within a solid box or container or lined on the bottom by an impermeable liner.

### **WQVD Land Cover Calculations**

#### Pervious Area Land Cover

1. Land that will remain undisturbed OR restored to a hydrologically functional state including:
  - a. Portions of residential lots that will not be disturbed during construction,
  - b. Community open space areas that will not be mowed routinely, but left in a natural vegetated state, and
  - c. Utility rights-of-way that will be left in a natural vegetated state.
2. Surface area of above ground stormwater BMPs including bioretention areas, dry swales, grass channels, extended detention (ED) ponds, stormwater wetlands, soil amended areas, infiltration practices, wet ponds, vegetated roofs and permeable pavement.
3. Other areas of existing forest and/or open space, including wetlands, that will be protected during construction and that will remain undisturbed. Portions of residential yards that are graded or disturbed, including residential utility connections,
4. Roadway rights-of-way that will be mowed and maintained as turf,

5. Turf areas intended to be mowed and maintained as turf within residential, commercial, industrial, and institutional settings, and
6. Landscaped areas that will be regularly maintained.

#### Impervious Land Cover

1. Roadways, driveways, buildings, rooftops (unless vegetated), parking lots, sidewalks, and other impervious areas,
2. Areas with compacted gravel, and
3. All surfaces over structure that are not designed as a stormwater BMP.

### Land Cover Calculations Chart

<b>Stormwater Management (SWM)</b>	<b>Pre-Development Acres</b>	<b>Pre-Development Square Feet</b>	<b>Post-Development Acres</b>	<b>Post-Development Square Feet</b>
Forested/Open Space				
Managed Turf				
Impervious				
<b>Water Quality Volume Default</b>	<b>Pre-Development Acres</b>	<b>Pre-Development Square Feet</b>	<b>Post-Development Acres</b>	<b>Post-Development Square Feet</b>
Pervious				
Impervious				