

Stormwater Management Design Guidance

For Projects within the Airport Zone (4 mi. of BWI and 3.3 mi. of MTN)

From www.birdstrike.org:

Bird and other wildlife strikes to aircraft are estimated to cause over \$900 million in damage to U.S. civil and military aviation annually. Furthermore, these strikes put the lives of aircraft crew members and their passengers at risk: over 250 people have been killed worldwide as a result of wildlife strikes since 1988.

Wildlife Strike Facts (from USDA-Wildlife Services)

- 97% of wildlife strikes occur below 3,000 feet above ground level.
- 97% of all wildlife strikes involve birds, 2% terrestrial mammals and 1% flying mammals and reptiles.
- Red-tailed hawks are responsible for the greatest loss of human life since 1990.
- European starlings are responsible for the greatest single loss of life event (1960).
- Canada geese are responsible for the greatest number of human injuries.
- White-tailed deer are responsible for the greatest number of destroyed aircraft.

The Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B (“Hazardous Wildlife Attractants on or Near Airports”) presents guidelines for minimizing wildlife strike hazards near airports. The Code of Maryland Regulations (COMAR) authorizes MAA to perform reviews of proposed developments within the Airport Zone; defined as within 4 miles of BWI Airport and 3.3 miles of Martin State Airport.

The MAA has developed guidelines for the design of stormwater management facilities and erosion and sediment control practices, to specify that **facilities within the Airport Zone must dewater within 24 hours of a one and two-year storm and 48 hours of a ten-year storm.**

Recommended stormwater management practices within the Airport Zone:

- Infiltration systems, where soil conditions allow
- Underdrain systems within BMPs
- Dry wells
- Underground filters/storage

Stormwater Management Practices NOT recommended within the Airport Zone:

- Extended detention facilities
- Constructed wetlands

Erosion and Sediment Control Practices NOT recommended within the Airport Zone:

- Sediment traps and basins

Best practices for facilities within the Airport Zone:

- Steep, Riprap-lined slopes
- Linear shaped facility
- Avoid creation of islands or peninsulas within facilities
- Refrain from mowing grass surrounding facility
- Wetland plantings within facility which mask surface of the water
- Wire Bird Deterrent System

Submission and Review Requirements

The following documents should be submitted to the MAA for review and approval for projects within the Airport Zone. It is recommended that the first review be performed early in the planning and design process, so that design teams can incorporate MAA comments into their final plans.

1. Preliminary Submission
 - a. Geotechnical Report/Investigation results
 - b. Preliminary design plans
 - c. SWM approach
 - i. BMP selection
 - ii. Contributing drainage area
 - iii. Underdrains/dewatering systems
2. Final Submission
 - a. Geotechnical Report/Investigation results
 - i. Include infiltration rates, if infiltration practices are proposed
 - b. Stormwater Management Report
 - i. Soils information
 - ii. Drawdown calculations
 - c. Final design plans
 - i. Erosion and Sediment Control plans
 1. Must include at least one dewatering device and its relevant detail:
 - a. Sump pit
 - b. Portable sediment tank
 - c. Removable pumping station
 - d. Filter bag
 2. Must include the following note on the ESC plans: "The Contractor is responsible for pumping all standing water through a filtering device to a clear water outfall within 24 hours of a storm event."
 - ii. Landscape Plans – must comply with the MAA Approved Species List
 - iii. SWM plans
 1. Plans, sections, and details of proposed facilities
 2. Contributing drainage area
 3. Drainage system and underdrains/dewatering devices

4. Maintenance criteria per the 2000 Maryland Stormwater Design Manual, requiring maintenance if the facility does not drain within 24 hours following a storm.
- iv. Details of wildlife deterrent systems, if applicable

Resources: (links or pdf)

- FAA AC 150/5200-33B
- Airport Zone Maps (4 mile radius from BWI, 3.3 mile radius from MTN)
- MAA Approved Plantings List
- Standard MAA ESC Notes
- Standard MAA Landscape Notes
- [MDE 2000 Stormwater Design Manual, Revised May 2009](#)
- MAA Airport Zoning Permit
<http://www.marylandaviation.com/content/permitsandforms/constructionzoning/index.html>
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