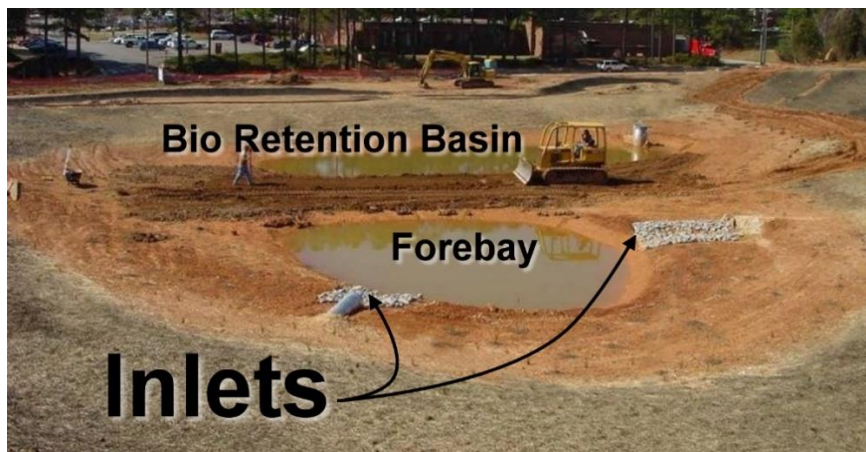




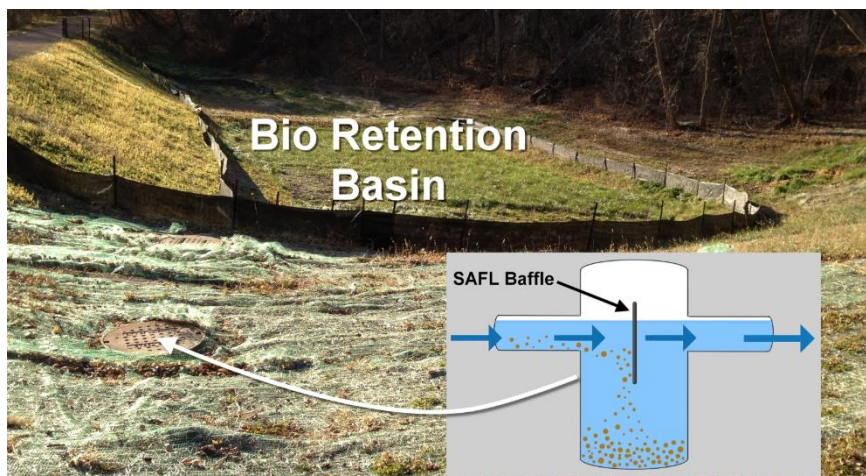
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SAFL Baffle vs. Forebay Construction and Maintenance Costs For Stormwater Pretreatment



Forebays cost less to construct than a sump and SAFL Baffle but the annual costs to maintain each is significantly higher for forebays.



When considering both construction and annual maintenance costs, the SAFL Baffle/Sump manhole is 35 to 40 percent less expensive than a forebay for pretreatment

Construction

Forebays are typically 10% to 20% of the volume of the rain garden or infiltration system they are designed to protect. Construction consists of:

- Excavating to the required depth, length, and width
- Construction of a berm to retain water to the required elevation
- Construction of an outlet structure/spillway

SAFL Baffle is installed in a manhole with a diameter of 4 to 10 feet and a sump depth of 4 to 6 feet. Construction consists of:

- Excavating to the sump bottom depth and diameter of the manhole
- Setting the bottom slab and barrel sections of the manhole
- Connecting the pipes to the manhole
- Installing the SAFL Baffle
- Installing the top slab and access casting

Maintenance

Forebays require an annual inspection and a report. This is frequently performed by a consultant engineer retained for this service. Sediment is dredged from the forebays once every 10 years, on average. Dredged sediment frequently needs to be disposed of in a designated hazardous waste landfill.

SAFL Baffle maintenance consists of vacuuming the sediment out of the sump twice per year. At each vacuuming, the vacuum truck operator measures and records the depth of sediment in the sump and inspects the SAFL Baffle for loose or broken parts. SAFL Baffle has a 20 year full guarantee, so any replacement costs are free. The sediment is weighed in the truck, and the weight recorded. Final disposal of the sediment happens at a municipal waste landfill, where it is typically used as daily cover.

Costs

Annualized Costs

<i>Drainage Area</i>	<i>Forebay</i>	<i>SAFL Baffle</i>
1 Acre	\$1030	\$670
2 Acres	\$1270	\$780
3 Acres	\$1510	\$950
4 Acres	\$1750	\$1120

Net Present Value Comparison

<i>Drainage Area</i>	<i>Forebay</i>	<i>SAFL Baffle</i>
1 Acre	\$16,510	\$11,500
2 Acres	\$20,340	\$13,430
3 Acres	\$24,420	\$16,300
4 Acres	\$28,110	\$19,160

Both the net present value and annualized costs are based on a 20-year life cycle and an annual inflation rate of 1.5%.

References

“BMP Cost Calculations”

<http://www.dnrec.delaware.gov/swc/wa/Documents/AppoPCsdocs/Appendix%20E%20-%20Cost%20Calculations.pdf>

“3.06.2 Post Construction Stormwater BMP Standards and Specifications”, DNREC Division of Watershed Stewardship, March 2013. Section 1.5 – Infiltration Pretreatment Criteria.