Infiltration Basins

Description: Infiltration basins are stormwater runoff impoundments that are constructed over permeable soils. Pretreatment is critical for effective performance of infiltration basins. Runoff from the design storm is stored until it exfiltrates through the soil of the basin floor.

Ability to meet specific standards

Standard	Description
2 - Peak Flow	Can be designed to provide peak flow attenuation.
3 - Recharge	Provides groundwater recharge.
4 - TSS Removal	80% TSS removal, with adequate pretreatment
5 - Higher Pollutant Loading	May be used if 44% of TSS is removed with a pretreatment BMP prior to infiltration. For some land uses with higher potential pollutant loads, use an oil grit separator, sand filter or equivalent for pretreatment prior to discharge to the infiltration basin. Infiltration must be done in compliance with 314 CMR 5.00
6 - Discharges near or to Critical Areas	Highly recommended, especially for discharges near cold-water fisheries. Requires 44% removal of TSS prior to discharge to infiltration basin
7 - Redevelopment	Typically not an option due to land area constraints

Advantages/Benefits:

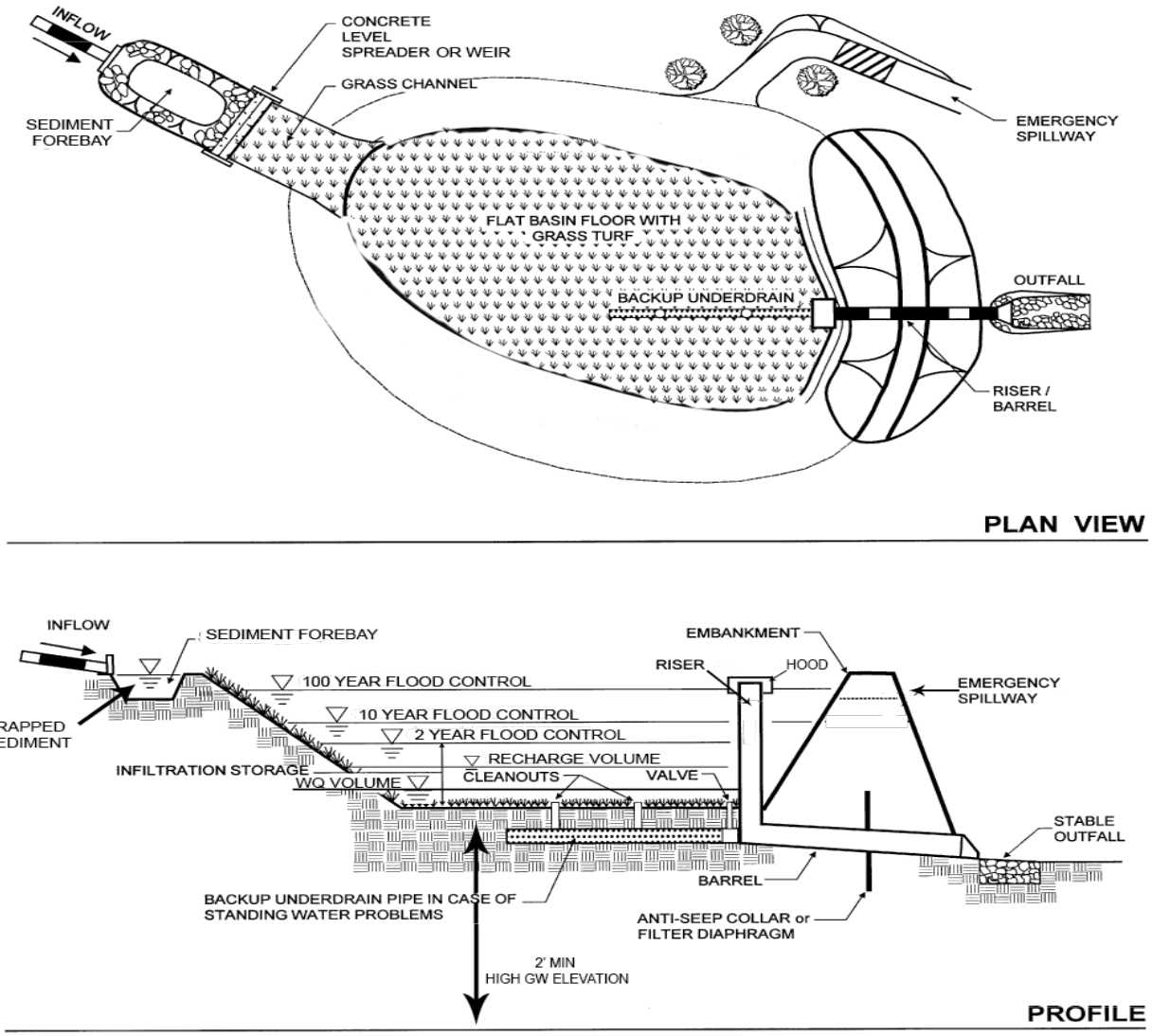
- Provides groundwater recharge.
- Reduces local flooding.
- Preserves the natural water balance of the site.
- Can be used for larger sites than infiltration trenches or structures.

Disadvantages/Limitations:

- High failure rates due to improper siting, inadequate pretreatment, poor design and lack of maintenance.
- Restricted to fairly small drainage areas.
- Not appropriate for treating significant loads of sediment and other pollutants.
- Requires frequent maintenance.
- Can serve as a “regional” stormwater treatment facility

Pollutant Removal Efficiencies

• Total Suspended Solids (TSS)	80% with pretreatment
• Total Nitrogen	50% to 60%
• Total Phosphorus	60% to 70%
• Metals (copper, lead, zinc, cadmium)	85% to 90%
• Pathogens (coliform, e coli)	90%



adapted from the Vermont Stormwater Manual

Maintenance

Activity	Frequency
Preventative maintenance	Twice a year
Inspect to ensure proper functioning	After every major storm during first 3 months of operation and twice a year thereafter and when there are discharges through the high outlet orifice.
Mow the buffer area, side slopes, and basin bottom if grassed floor; rake if stone bottom; remove trash and debris; remove grass clippings and accumulated organic matter	Twice a year
Inspect and clean pretreatment devices	Every other month recommended and at least twice a year and after every major storm event.

Special Features: High failure rate without adequate pretreatment and regular maintenance.

LID Alternative: Reduce impervious surfaces. Bioretention areas