



# Drainage Wells

## Description

Drainage well SMPs are perforated stormwater manholes that detain runoff and allow it to infiltrate into the surrounding soil. Stormwater flows into the drainage well where it collects within the manhole structure and surrounding open-graded stone. Drainage wells are typically constructed from precast concrete or a thermoplastic (typically PVC). Drainage wells are a specific application of subsurface infiltration and are typically deeper than other types of infiltration SMPs.







## Key Advantages

- Can be useful on smaller sites with limited area available for bioinfiltration or subsurface infiltration footprints
- Can be easier to maintain than other subsurface infiltration types
- Less reliant on infiltration through the bottom surface of the SMP than other subsurface infiltration SMPs. Therefore, reduction in infiltration through the bottom of the SMP as a result of clogging may not be as detrimental to the long-term performance of drainage wells as it is to other subsurface infiltration SMPs.
- Eligible for dynamic sizing





## Key Limitations

- Can be more costly and challenging to install than surface practices like bioinfiltration SMPs, as well as more difficult to maintain post construction
- Monitoring the water table over time via groundwater monitoring wells is advised, though this can increase time needed for design and potentially reveal a water surface elevation too high for the drainage well's proper function, requiring alternate siting or an alternate design
- Not appropriate for runoff with high sediment loads without robust pretreatment
- Requires regularly scheduled inspections because maintenance needs are not easily visible
- Does not improve natural aesthetics or provide the ancillary environmental benefits associated with vegetated SMPs, such as habitat creation and improved air quality

## DEVELOPMENT ATTRIBUTES

<b>Construction Costs</b>	 MODERATE
<b>Operations &amp; Maintenance Costs</b>	 LOW
<b>Likelihood of Failure</b>	 LOW
<b>Ground-Level Encroachment</b>	 LOW
<b>Building Footprint Encroachment</b>	 MODERATE
<b>Triple Bottom Line Benefits</b>	 LOW

## COMPLIANCE ATTRIBUTES

<b>Water Quality Effluent Pollutant Load</b>	<b>Water Quality Infiltration &amp; Volume Reduction</b>	<b>Water Quality Evapotranspiration</b>	<b>Water Quality Rate Control</b>	<b>Channel Protection/ Flood Control/ PHS Rate Control</b>
 LOW	 HIGH	 LOW	<b>Yes</b>	 MODERATE

A description of each evaluated attribute can be found in the SMP Hierarchy Ranking Criteria in [Section 3.2.2](#).