

Design requirements for infiltration trenches with soils considered a treatment BMP (except for WSDOT and King County, call UIC coordinator)

Infiltration trenches are designed to the 2005 Stormwater Management Manual for Western (SMMWW) or Eastern (SMMEW) WA except for SMMEW, section 5.6 Subsurface Infiltration. UIC wells other than infiltration trenches with perforated pipe are required to be designed to the *Guidance for UIC Wells that Manage Stormwater*.

Requirements	Infiltration trenches located in Western WA (from 2005 SMMWW)	Infiltration trenches located in Eastern WA (from SMMEW, but does not include section 5.6).
Vadose zone separation between ground water/ impermeable layer and trench base	≥ 5 ft., see Vol. III p. 3-84 Separation down to 3 ft. may be allowed if mounding analysis determines no over topping into trench and overflow structure is adequate	≥ 5 ft., see p. 5-28. Separation down to 3 ft. may be allowed if mounding analysis determines no over topping into trench and overflow structure is adequate
Depth of soil considered as treatment BMP	≥ 18 inches, see Vol. III, p. 3-84 (can be part of the 5 ft. of required vadose zone separation)	≥ 18 inches (except for designed vegetated infiltration facility with an active root zone), see p. 5-28. (can be part of the 5 ft. of required vadose zone separation). See p. 5-28
Soil type	5 mill equivalents CEC* /100grams soils; Organic content unspecified, see Vol. III, p.3-84.	5 mill equivalents CEC/100 grams soils; Organic content unspecified. See p.5-28.
Treatment required?	Pretreatment or any basic treatmt. BMP**.see flow chart, see Vol. 1, p. 4-6 - Oil removal at high use sites, doesn't include high ADT road, see Vol. 1, p. 4-5. - If trench receives just NPGIS**/roof runoff then only need catch basin for pretreatment.	Pretreatment or any basic treatmt. BMP, see flowchart p. 5.4, (surface infiltration) - Oil removal at high use sites & high ADT*** traffic areas, see p.2-22. If trench receiving only NPGIS**** roof runoff then no treatment required.
Short term Infiltration rate for treatment	2.4 in/hr to a depth of 2.5 times depth of pond or 6 ft.; see Vol. III, p. 3-75.	Limited to ≤ 2.4 in/hr page 5-26.
Long term Infiltration rate	p. 3-75, use one of the 3 approaches, correction factor of 4 (appr.1) to 5.5 -18 (appr.3, p. 3-80, see Vol III, p. 3-75.	0.5 to a max of 2.4 in/hr with a 2-4 correction factor, p. 5-27.
In ground water protection area? (well head or critical aquifer recharge area)	Check WA State DOH website GIS tool, https://fortress.wa.gov/doh/eh/dw/swap/maps/ to determine if trench is in a well head protection area. If yes, contact local DOH for local ordinances pertaining to stormwater. For CARA call your local health department website or visit their website.	Check WA State DOH website GIS tool, at https://fortress.wa.gov/doh/eh/dw/swap/maps/ then contact local DOH for local ordinances pertaining to stormwater. For CARA call or visit your local health department
Operation and maintenance	Volume IV, SMMWW	Chapter 8 of SMMEW

*CEC - Cation exchange capacity

**BMP – Best Management Practice, must be approved by Ecology. For approved BMPS go to <http://www.ecy.wa.gov/programs/wq/grndwtr/uic/TreatmentOpts-EandWwa.pdf>

***ADT - Average Daily Traffic

****NPGIS – non pollutant generating impervious surface, see definition in either SMMEW or SMMWW, <http://www.ecy.wa.gov/programs/wq/stormwater/tech.html>

Design requirements for infiltration trenches used for flow control (soils not considered a treatment BMP)

Requirements	Infiltration trenches located in Western WA (from SMMWW)	Infiltration trenches located in Eastern WA (from SMMEW, but does not include section 5.6)
Separation between ground water/ impermeable layer and base of trench	5 ft.	5 ft.
Soil type	None required	None required
Treatment required, must use Ecology approved BMP*	Solids removal; except for NPGIS** Oil control for high use sites, SMMWW, Vol 5, p. 2-3	Solids removal, except for NPGIS Oil control for high use and high ADT*** roads, see p. 2-22.
Short term Infiltration rate for treatment	No minimum	No minimum
Long term Infiltration rate	No minimum	No minimum
In ground water protection area? (well head or critical aquifer recharge area)	Check WA State DOH website GIS tool, https://fortress.wa.gov/doh/eh/dw/swap/maps/ to determine if trench is in a well head protection area. If yes, contact local DOH for local ordinances pertaining to stormwater.	Check WA State DOH website GIS tool, at https://fortress.wa.gov/doh/eh/dw/swap/maps/ If yes, contact local DOH for local ordinances pertaining to stormwater.
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**NPGIS – non pollutant generating impervious surface, see definition in either SMMEW or SMMWW, <http://www.ecy.wa.gov/programs/wq/stormwater/tech.html>

***ADT - Average Daily Traffic