

Appendix B: Infiltration Rates & Surficial Geology Data

1. CONCEPT INFILTRATION RATES

Concept design infiltration rates shall be taken from Table B-1 based on the soil textures typically found to be associated with the surficial geology. Sources for this information are the 2007 Surficial Geology of the Twin Cities Metro Area atlas and the Carver County Geological atlas, due to be completed in 2009. Final design shall require submittal and review of in-situ testing data.

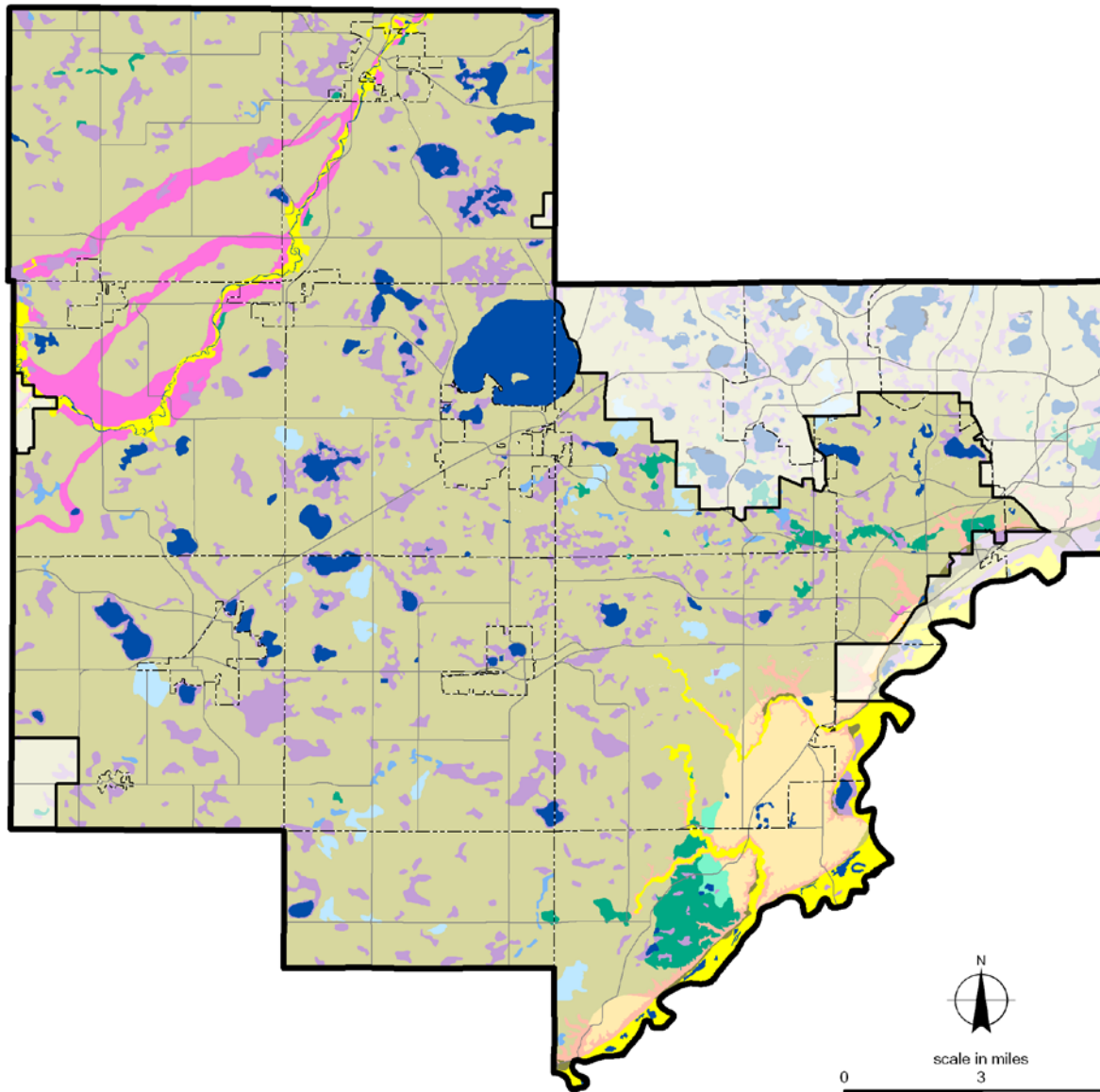
The area required for infiltration/filtration/bio-retention is calculated using the above volume and rates and a selected design infiltration period, not to exceed 48 hours. Vegetation shall be selected that tolerates the design inundation period.

Table B-1. Concept-Level Infiltration Rates for Surficial Geologic Map Units

Mapped Surficial Geology*	Infiltration Rate	Potential Soil Textures
Lacustrine Deposit (Q _l)	0.1 in/hr	Sand, loamy sand & loam w/ local organic-rich layers; overlies peat or muck
Floodplain Alluvium (Q _a)	0.1 in/hr	Sand & gravel (channels); fine-grained sand & silt (floodplains); fine-grained downstream of St. Paul (mix of silt & clay)
Alluvial Fan Deposit (Q _f)	0.1 in/hr	Loam to loamy fine-grained sand w/ beds of silt loam, silty clay loam, fine-grained sand & gravel
Colloivium (Q _c)	0.0 in/hr	Mixture of clay to boulders, may contain disseminated debris; re-worked sediments on steep slopes
Peat & Muck (Q _p)	0.0 in/hr	Fine-grained organic matter & marl (calcareous clay)
Grey Cloud Terrace (Q _{wg})	0.3 in/hr	Sand, gravel & loamy sand
Langdon Terrace (Q _{wl})	0.3 in/hr	Sand, gravel & loamy sand
Richfield Terrace (Q _{wr})	0.3 in/hr	Sand, gravel & loamy sand
Lake Clay & Silt (Q _{ni})	0.0 in/hr	Laminated clay to silt
Ice-Contact Stratified Deposit (Q _{ni})	0.2 in/hr	Sand, gravelly sand & cobbly gravel, locally interbedded w/ till deposits
Outwash (Q _{no})	0.3 in/hr	Sand, gravelly sand & gravel
Loamy Till (Q _{nt} , Q _{nm} , Q _{nh})	0.0 in/hr	Chiefly loam-textured, unsorted sediments; pebbly, with scattered cobbles & rare boulders
Clayey Till (Q _{nc})	0.0 in/hr	Chiefly clay-loam textured, unsorted sediments; pebbly, with scattered cobbles & rare boulders
Sandy Till (Q _{na})	0.1 in/hr	Loam to sandy-loam textured, unsorted sediments; pebbly, with scattered cobbles & rare boulders

Source: Surficial Geology of the Twin Cities Metro Area, USGS, 2007

Figure B-1. Surficial Geology



Legend

Surficial Geology

- Quaternary
 - Lacustrine deposit
 - Floodplain alluvium
 - Alluvial fan deposit
 - Colluvium
 - Quaternary peat and muck
- West Campus
 - Grey Cloud Terrace
 - Langdon Terrace
 - Richfield Terrace
- New Ulm Formation
 - Lake clay and silt
 - Outwash
 - Ice-contact deposit
 - Loamy till
 - Sandy till
 - Clayey till
- Water
- County Boundary
- CCWMO Boundary
- Municipal Boundaries
- Major Roads

Carver County Water Plan 2010-2020
Public Health & Environment Division
Planning & Water Management Dept.



This map was created using Carver County's Geographic Information Systems (GIS), it is a compilation of information and data from various City, County, State, and Federal offices. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Carver County is not responsible for any inaccuracies contained herein.