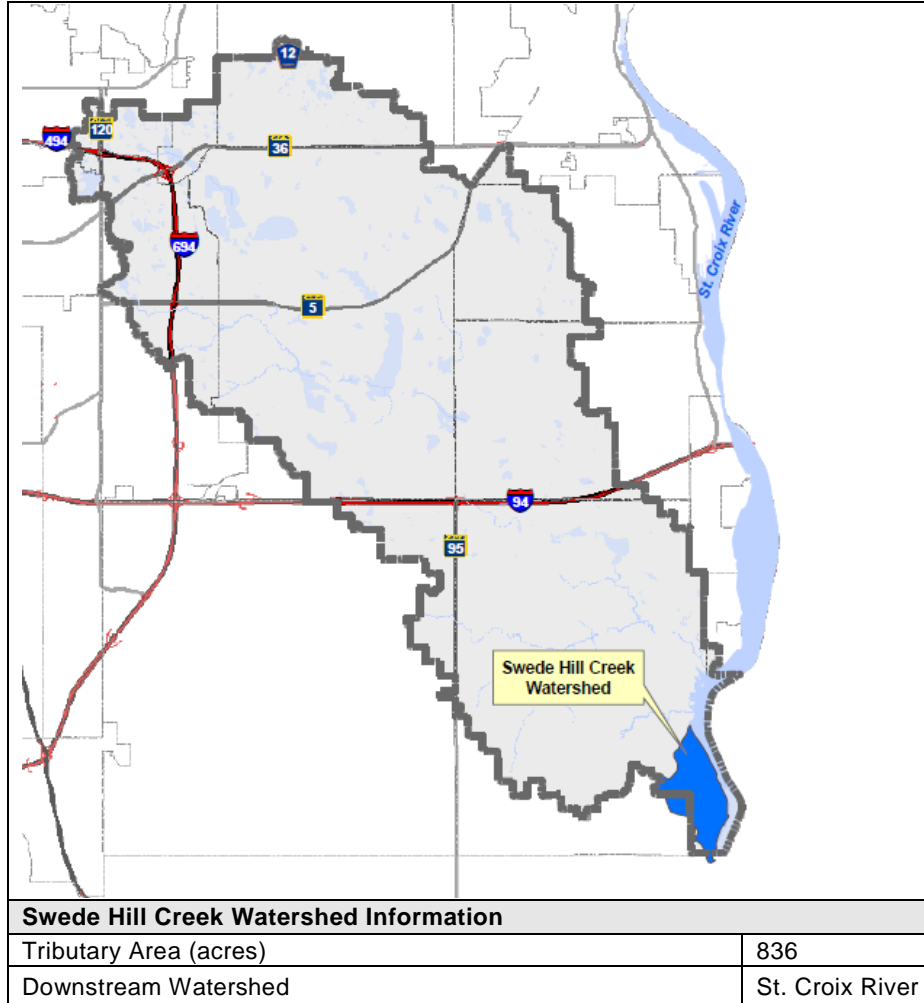


5.38 Swede Hill Creek Watershed Management Plan

5.38.1 General Information



The Swede Hill Creek watershed contains several steep-sided ravines and bluffs that drain directly to the St. Croix River. There are no perennial streams or other water bodies in the watershed.

The Swede Hill Creek watershed has a drainage area of 836 acres, or approximately 1.3 square miles. Most of the watershed is undeveloped and heavily forested. Existing and proposed land use is primarily rural residential in the northeast portions of the watershed, agricultural uses in the uplands along the western edge of the watershed, and parkland

(Afton State Park) in the southern third of the watershed.

5.38.2 Water Quality Management Plan

Although there are no surface water bodies within the Swede Hill Creek watershed, its location along the banks of the St. Croix River adds to the importance of maintaining high water quality. Being directly tributary to the St. Croix River, stormwater runoff from this watershed will directly impact river water quality, and there may be limited opportunities for treatment prior to discharge. Because of this, the VBWD rules applicable to the Valley Creek watershed (and described in Section 4.4) will also be applied to the Swede Hill Creek watershed.

5.38.2.1 Water Quality Implementation Plan

The VBWD plans to undertake the following specific water quality implementation tasks for the Swede Hill Creek watershed:

1. The VBWD will perform a spring and erosion inventory to identify areas of special concern with regards to karst geology and potential locations for streambank and gully stabilization.

The geologic and topographic features within the Swede Hill Creek watershed merit additional management considerations when the VBWD designs or reviews projects in this watershed. The VBWD will apply the following management standards, which are adapted from the *LSCWMO Watershed Management Plan* (EOR 2009) and *Kelle's Coulee Stream Management Plan* (EOR 2007b).

1. For projects disturbing steep slopes, erosion control measures must be installed at 75-foot intervals along steep slopes. Such slopes must be protected with temporary or permanent erosion control within seven days of disturbance.
2. Projects proposing stormwater facilities in karst sensitive areas should follow the management guidelines included in the *LSCWMO Karst Feature Inventory and Management Plan* (EOR 2007a), the Minnesota Stormwater Manual (MPCA 2008) or other more-recent documents such as those developed through the Minnesota Pollution Control Agency's Minimum Impact Design Standards (MIDS) project.

5.38.2.2 Water Quality Issues

There is no available surface water quality or groundwater quality data for the Swede Hill Creek watershed. The undeveloped nature of the watershed and large areas of forest and grassland result in low levels of imperviousness and valuable wildlife habitat. Streambank and ravine erosion has been reported in the Swede Hill Creek watershed, as discussed in the *LSCWMO Watershed Management Plan* (EOR 2009).

The largest threats to surface water quality in the watershed are development and poor vegetation management. Increased runoff from development has the potential to carry excessive nutrients and contaminants to the stream, as well as increase erosion into and within the stream. Appropriate stormwater management practices and maintenance of vegetated buffers between developed areas and the stream will reduce these risks.

5.38.3 Water Quantity Management Plan

The City of Afton's local water management plan (WSB, 2011) identifies runoff from the bluffs adjacent to the St. Croix River as a source of flooding present in the Swede Hill Creek watershed. Runoff from the bluffs has caused damage to city infrastructure and has seeped into residents basements, causing property damage. The City of Afton held a public task force meeting to address flooding issues including bluff runoff.

The VBWD Managers will continue to determine the appropriate level of VBWD involvement in local and regional flooding issues on a case by case basis. If requested by the City of Afton, the VBWD may support the city's efforts to address these flooding issues. VBWD support could include assisting the city in evaluating solutions, obtaining funding, or other means in accordance with the policies of the VBWD (see Section 4.5).

5.38.4 References

Emmons & Olivier Resources (EOR). June 2007. *Karst Feature Inventory & Management Plan, Lower St. Croix Watershed Management Organization.*

Emmons & Olivier Resources (EOR). December 2007. *Kelle's Coulee Stream Management Plan, Lower St. Croix Watershed Management Organization.*

Emmons & Olivier Resources (EOR). February 2009. *LSCWMO Watershed Management Plan, Lower St. Croix Watershed Management Organization.*

Minnesota Pollution Control Agency (MPCA). January 2008. *Minnesota Stormwater Manual. Version 2.*

WSB and Associates, Inc. 2011. *Surfacewater Management Plan.* Prepared for the City of Afton.