

# Watershed Outlet Monitoring Program

West Chaska Creek Station – CH 1.0 Site  
Chaska, MN

## Summary Report

February – October 2012



Prepared By: Carver County Land and Water Services  
Prepared For: Lower Minnesota River Watershed District  
February, 2013



## Introduction

The West Chaska Creek CH 1.0 site, located in Chaska north of US Highway 212 along Creek Road, has been in operation since 1998. The West Chaska Creek Watershed drains approximately 9,900 acres of mostly agricultural and undeveloped land (Appendix A). This report summarizes the results of flow, precipitation, and water quality for February – October 2012. The data is preliminary and is subject to change until the Metropolitan Council submits the final report for this period.

## Flow and Precipitation

Average flow in West Chaska Creek was 8.18 cubic feet per second (cfs) or 5.29 million gallons per day (mgd) (Table 1). This is lower than the average from 2011 (11.63 cfs). The 2012 sampling season was characterized by little spring runoff and an extremely dry late summer and fall. A graph describing flow and precipitation results is provided (Figure 1).

Table 1. Average flow and total precipitation at West Chaska Creek CH 1.0 Station February – October 2012.

Period	Average Flow (cfs/mgd)	Precipitation (inches)	*Average Monthly Precipitation, 2000-2012 (inches)
FEBRUARY	2.64/1.71	1.99	1.02
MARCH	4.79/3.10	1.37	1.82
APRIL	2.21/1.43	2.59	3.23
MAY	24.76/16.01	10.69	4.44
JUNE	23.45/15.16	5.2	4.27
JULY	3.75/2.42	3.32	2.94
AUGUST	2.09/1.35	2.51	4.29
SEPTEMBER	1.92/1.24	0.44	3.30
OCTOBER	2.45/1.58	1.48	2.36
TOTAL	8.18/5.29	29.59	27.67

\*Ave. monthly precipitation data obtained from the National Weather Service station #211465.

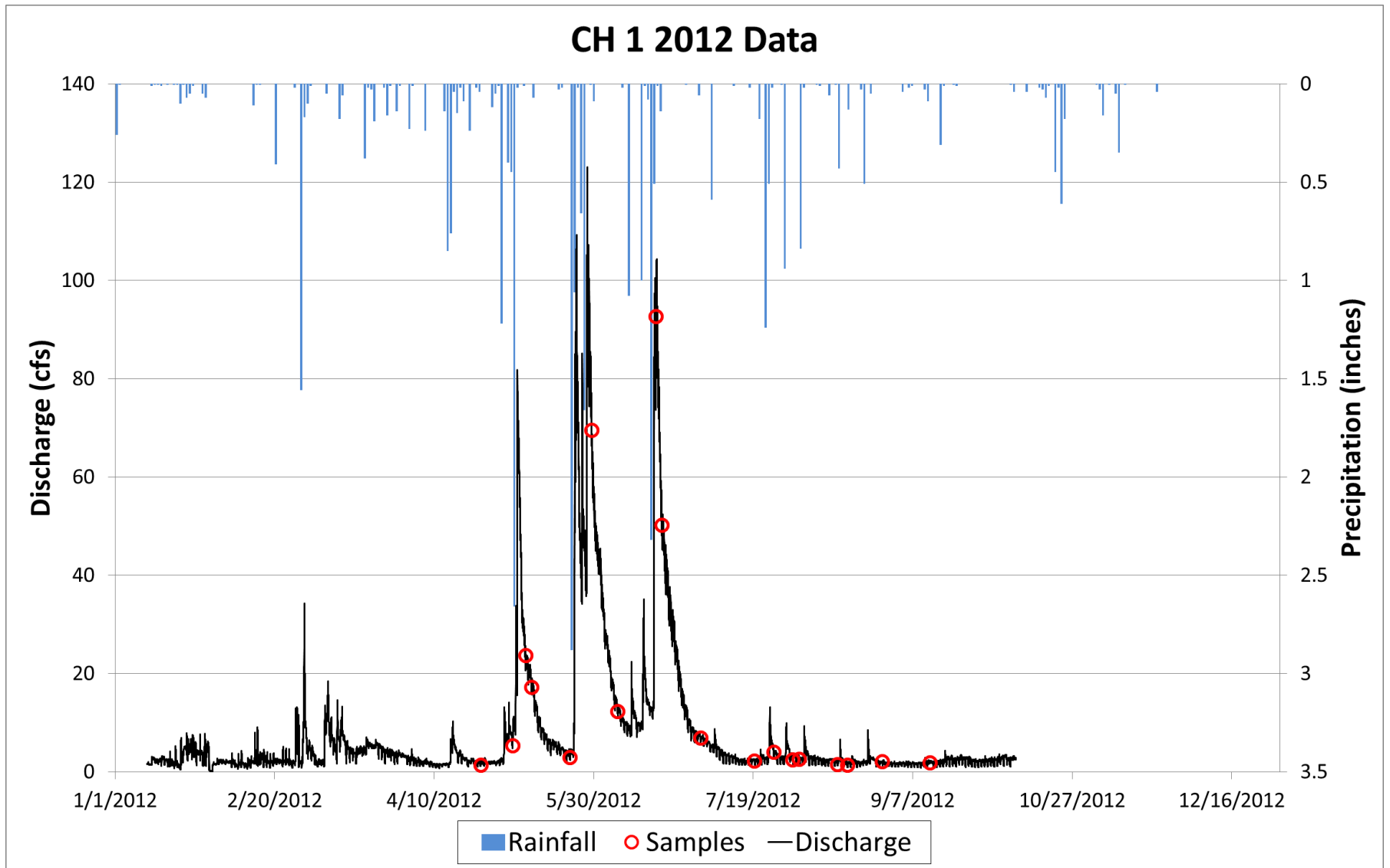


Figure 1. Flow and precipitation at CH 1.0 Station February-October 2012

## Water Quality

Nine nutrient samples and eleven Escherichia Coli (E. coli) grab samples were collected at the CH 1.0 Station during the 2012 season. Some water quality parameters for West Chaska Creek declined from the previous year while others improved. The levels of alkalinity, E. coli, nitrate+nitrite, and total phosphorus were all lower in 2012 than they were in 2011. Chemical oxygen demand, ammonia, suspended solids, turbidity, and volatile solids were all higher than the previous year.

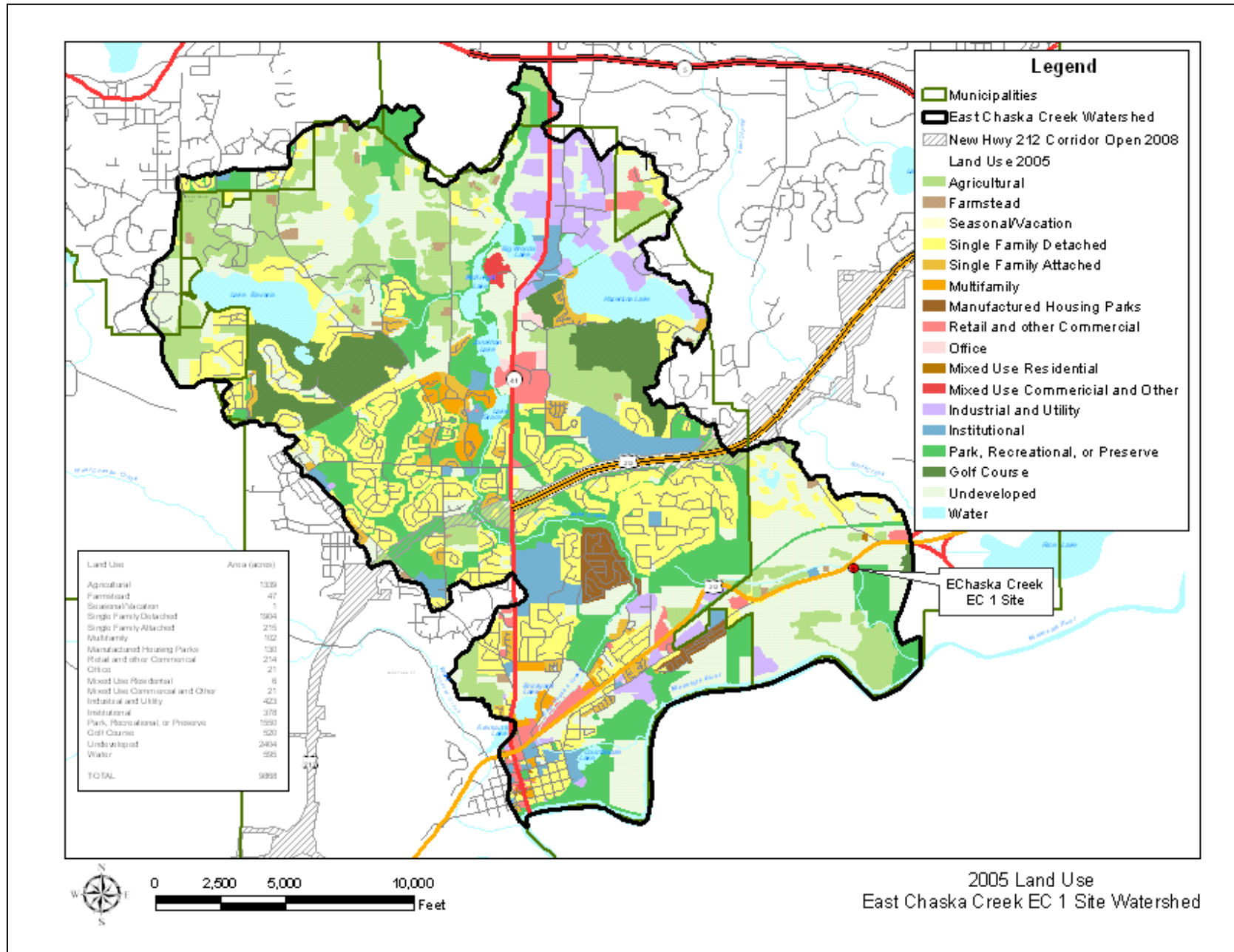
Most parameters still exceeded that of typical streams in the North Central Hardwood Forest ecoregion(see Table 2). The 2012 average concentration of total phosphorus (118.89 µg/L) was in the higher end of the typical ecoregion mean while the concentration of nitrate+nitrite (996.67 µg/L) was still much higher than the typical range. E. coli levels slightly dropped in 2012, however, the geometric mean of 206 MPN per 100 mL is approaching twice the state standard. This information can also be found in the 2012 Carver County Water Quality Report that can be downloaded or accessed through an interactive GIS water quality mapping program (<http://www.co.carver.mh.us/departments/LWS/wqmp.asp>).

Table 2. Average concentrations at West Chaska Creek CH 1.0 Station February – October 2012.

Parameter	2012 Ave. Concentration	Notes
Alkalinity	250 mg/L CaCO <sub>3</sub>	
Chemical Oxygen Demand	53.33 mg/L	
E. coli (mean/ geomean)	412/ 206 MPN per 100 mL	Standard is 126/ 1260*
Nitrogen Ammonia	58.89 µg/L	
Nitrate + Nitrite	996.67 µg/L	Ecoregion mean (40-260 µg/L)
Phosphorus, Total	118.89 µg/L	Ecoregion mean (60-160 µg/L)
Suspended Solids	244.89 mg/L	Ecoregion mean (4.8 - 16 mg/L)
Turbidity	136.11 NTRU	Ecoregion mean (3-8.5 NTRU)
Solids, Volatile	27.67 mg/L	

\*As stated in MN Rules Chapter 7050.0222, E. coli shall not exceed 126 organisms per 100 mL as a geometric mean of not less than five samples, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 mL.

# Appendix A



2005 Land Use data source provided by Metropolitan Council Environmental Services

