

# Watershed Outlet Monitoring Program

East Chaska Creek Station – Site EC 2  
Chaska, MN

## Summary Report

March – October 2011



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Prepared For: Lower Minnesota River Watershed District  
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## Introduction

The East Chaska EC 2 site, located in Chaska near the intersection of two walking paths behind Brandondale at 715 Creek Trail, has been monitored since 2003. The East Chaska Creek watershed drains 9,868 acres of various types of land uses including residential, agricultural, undeveloped, and park/recreation areas (Appendix A). This 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 East Chaska Creek from March to October was 11.04 cubic feet per second (cfs) or 7.13 million gallons per day (mgd) (Table 1). This is higher than the average flow from 2010 (7.08 cfs) and can be attributed to severe spring flooding in 2011. The 2011 sampling season was characterized by a very wet spring 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 East Chaska Creek EC 2 Station March – October 2011

Period	Average Flow (cfs/mgd)	Precipitation (inches)	*Average Monthly Precipitation, 2000-2010 (inches)
MARCH	33.47 / 21.64	1.95	1.85
APRIL	15.44 / 9.98	2.85	3.33
MAY	16.65 / 10.76	4.17	3.90
JUNE	11.52 / 7.45	4.05	4.20
JULY	9.65 / 6.24	5.82	2.64
AUGUST	1.43 / 0.92	2.22	4.65
SEPTEMBER	0.02 / 0.01	0.41	3.82
OCTOBER	0.10 / 0.06	1.12	2.56
TOTAL	11.04 / 7.13	22.58	26.94

\*Average monthly precipitation data obtained from National Weather Service station located near the EC 2 site

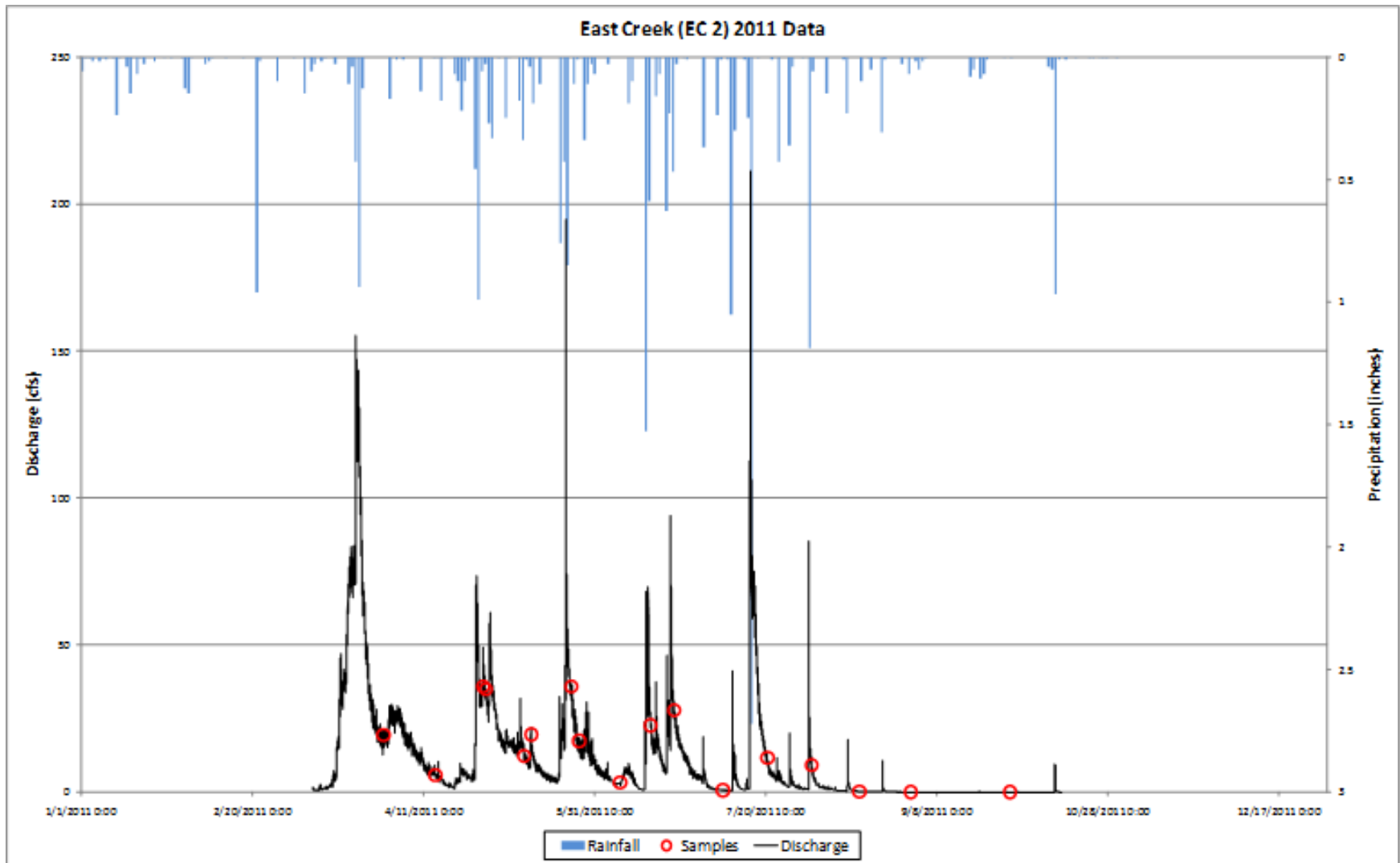


Figure 1. Flow and precipitation at East Chaska Creek EC 2 Station March - October 2011

## Water Quality

Nine nutrient samples and eleven Escherichia Coli (E.coli) samples were collected at the EC 2 station during the 2011 season. Some of the water quality parameters at EC 2 improved from last year while others did not. Alkalinity, E. coli and suspended solids were all higher in 2011 than they had been in 2010 while ammonia, nitrate+nitrite and total phosphorus were all lower. The most noticeable improvement was the amount of total phosphorus decreasing from 2010 levels by approximately 70%.

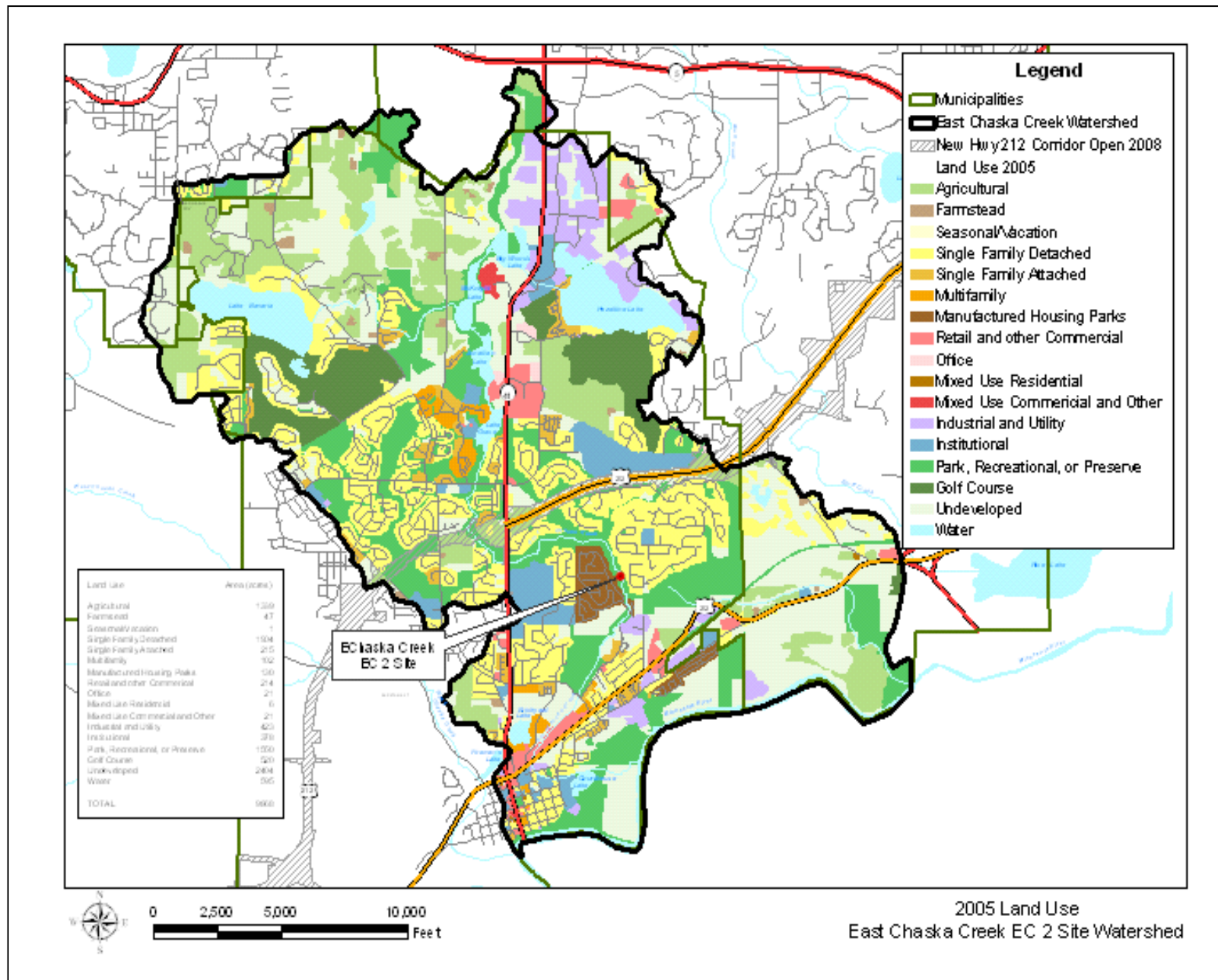
When compared to other streams in the North Central Hardwood Forest ecoregion, the results for EC 2 are more encouraging this year. For the first time in many years, the total phosphorus concentration fell below the ecoregion mean. The geometric mean for the amount of E. coli in the water was 120 MPN per 100 mL which is also slightly below the state standard of 126 MPN per 100 ML. Turbidity, suspended solids, and nitrate+nitrite concentrations for 2011 were all above the ecoregion mean. This data as well as additional information about phosphorus and E. coli loading, statistical analyses, and biomonitoring data can be found in the 2011 Carver County Water quality report. The report can be accessed through the Carver County website (<http://www.co.carver.mn.us/departments/LWS/wqmp.asp>) as a document that can be downloaded or through an interactive GIS water quality mapping program.

Table 2. Average concentrations at East Chaska Creek EC 2 Station March – October 2011.

Parameter	2011 Ave. Concentration	Notes
Alkalinity	212 mg/ L CaCO <sub>3</sub>	
Chemical Oxygen Demand	33.55 mg/ L	
Cadmium	N/A	Not tested at this site
Chloride	N/A	Not tested at this site
Chlorophyll-a	N/A	Not tested at this site
Chromium	N/A	Not tested at this site
Conductivity	N/A	Not tested at this site
Copper	N/A	Not tested at this site
Escherichia Coli (mean/geomean)	311/120 MPN per100 mL	Standard is 126/ 1260*
Hardness	N/A	Not tested at this site
Lead	N/A	Not tested at this site
Nickel	N/A	Not tested at this site
Nitrogen Ammonia	82 µg/ L	
Nitrate + Nitrite	411 µg/ L	Ecoregion mean (40-260 ug/L)
Phosphorus, Total	0.04 mg/L	Ecoregion mean (0.060-0.160 mg/L)
Suspended Solids	44.9 mg/ L	Ecoregion mean (4.8 - 16 mg/L)
Turbidity	19 NTRU	Ecoregion mean (3-8.5 NTU)
Volatile Solids	6.4 mg/ L	
Zinc	N/A	Not tested at this site

\*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 provide by Metropolitan Council Environmental Services