
WASHINGTON COUNTY GROUNDWATER PLAN



2011 WORK PLAN

TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
WASHINGTON COUNTY GROUNDWATER ADVISORY COMMITTEE.....	3
WASHINGTON COUNTY TECHNICAL ADVISORY COMMITTEE.....	4
WORK PLAN KEY TO ACRONYMS.....	5
INTRODUCTION.....	6
SECTION I – Accomplishments.....	7
SECTION II – 2010 Schedule of Activities.....	17
Chapter 2.0 Non-Agricultural Land Use Goals.....	17
Chapter 3.0 Agriculture, Turf, and Animal Waste Management Goals.....	24
Chapter 4.0 Subsurface Sewage Treatment System Goals.....	26
Chapter 5.0 Wellhead-Aquifer Protection and Well Management Goals.....	28
Chapter 6.0 Groundwater Supply Goals.....	31
Chapter 7.0 Groundwater Surface Water Interaction Goals.....	38
Chapter 8.0 Hazardous Materials Management and Transportation Goals.....	41
SECTION III – Emerging Issues.....	44
SECTION IV – 2011 Anticipated Funding Sources.....	45
Watershed Management Organizations 2011 Budget Summary.....	46
Appendix of Accomplishments.....	47

For reference the Washington County Groundwater Plan 2010 Work Plan can be found at:
<http://www.co.washington.mn.us/asset/jl3gg7/ENV-GW-2010WorkPlan.pdf>

WASHINGTON COUNTY GROUNDWATER ADVISORY COMMITTEE

Washington County would like to acknowledge and recognize the members of the Groundwater Advisory Committee (this page) and Technical Advisory Committee (following page) for their dedication and efforts to develop the 2011 Work Plan.

Committee Member	Affiliation
Robert Bankers	Construction Industry
Mark Frazer	Citizen at Large
Edward Gordon (Chair)	Citizen at Large
Dave Hume	Hydrogeology Industry
Brian Johnson (Vice Chair)	Watershed District
Jennifer Levitt	Municipal Government
John Rheinberger	Citizen at Large
Raymond Stevens	Citizen at Large
Richard Thron	Well Drilling
Rick Vanzwol	Watershed District
Julia Welter	Municipal Government
Jon Whitcomb	Water Management Organization
Gary Kriesel (Commissioner Liaison)	Commissioner District 3

WASHINGTON COUNTY TECHNICAL ADVISORY COMMITTEE

TAC Member	Affiliation
Cliff Aichinger	Watershed District
Scott Alexander	University of Minnesota
Jim Almendinger	St. Croix Watershed Research Station
Kyle Axtell	Watershed District
John Barry	Engineering Consulting Firm (EOR)
Amy Carolan	Watershed District
Tina Carstens	Watershed District
Jessica Collin-Pilarski	Washington County Public Health & Environment
Amal Djerrari	Minnesota Department of Health
Brian Davis	Metropolitan Council
Chris Elvrum	Metropolitan Council
John Freitag	Minnesota Department of Health
Pete Ganzel	Washington County Public Health & Environment
John Hanson	Watershed District/Hydrogeology Industry
Karen Kill	Washington Conservation District
Sharon Kroening	Minnesota Department of Natural Resources
Jack Lavold	Watershed District
Chris LeClair	Washington County Public Health & Environment
Craig Leiser	Watershed District
Ryan Lemickson	Minnesota Department of Agriculture
Melissa Lewis	Board of Water and Soil Resources
Bruce Montgomery	Minnesota Department of Agriculture
Matt Moore	Watershed District
Dennis O'Donnell	Washington County Land Management
Jay Riggs	Washington Conservation District
Patrick Sarafolean	Minnesota Department of Health
Kurt Schroeder	Minnesota Pollution Control Agency
Jim Shaver	Watershed District
Molly Shodeen	Minnesota Department of Natural Resources
Amanda Strommer	Washington County Public Health & Environment
Doug Thomas	Watershed District
Bob Tipping	Minnesota Geological Survey
Jeff Travis	Washington County Public Health & Environment
Brian Williams	Minnesota Department of Agriculture
Craig Wills	Minnesota Department of Natural Resources

WORK PLAN KEY TO ACRONYMS

BMP	Best Management Practice
BWSR	Minnesota Board of Water and Soil Resources
CURA	Center for Urban and Regional Affairs
DNR	Minnesota Department of Natural Resources
EMWREP	East Metro Water Resource Education Program
GIS	Geographic Information System
GWAC	Groundwater Advisory Committee
GWDNR	Groundwater Dependant Natural Resource
LCMR	Legislative Commission on Minnesota Resources
LCCMR	Legislative-Citizen Commission on Minnesota Resources
LGU	Local Government Unit
MC	Metropolitan Council
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MGS	Minnesota Geological Survey
MLCCS	Minnesota Land Cover Classification System
MNEXT	University of Minnesota Extension Service
MPCA	Minnesota Pollution Control Agency
MUSA	Metropolitan Urban Service Area
NRCS	Natural Resources Conservation Service
PFC	Perflourochemical
PW-SLM	Public Works – Survey Land Management
SONAR	Statement of Need And Reasonableness
SSTS	Subsurface Sewage Treatment System
SWCA	Special Well Construction Area
SWCD	Soil and Water Conservation District
SWPPP	Stormwater Pollution Prevention Plan
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TCE	Trichloroethylene
USGS	United States Geological Survey
VOC	Volatile Organic Carbon
WC	Washington County Water Consortium
WCD	Washington Conservation District
WCPHE	Washington County Public Health & Environment
WD	Watershed District
WMO	Watershed Management Organization

INTRODUCTION

The 2003 – 2013 Washington County Groundwater Plan provides a County-wide framework for the protection and conservation of groundwater resources. The Groundwater Plan complements existing water plans and establishes a structure for the writing of the next generation of water management plans in the County by establishing goals and policies to protect groundwater. Section II of the Groundwater Plan outlines the Groundwater Plan Implementation Expectations. The annual work plan includes a summary of the previous year's activities and accomplishments, the implementation tasks to be completed within that year, a schedule of activities, and a proposed budget.

Users of the 2011 Work Plan will range from city and county officials, watershed organizations, and state agencies. Washington County Department of Public Health & Environment provides overall leadership and coordination of the 2011 Work Plan. It will take a coordinated effort at all levels of government to continue to make the Groundwater Plan and 2011 Work Plan a success.

The Work Plan is intended to be a working document that will be updated yearly. The 2011 Work Plan was presented to the Washington County Groundwater Advisory Committee and the Washington County Technical Advisory Committee for review and comment. Team leaders and members provided updates on the status of methods/projects cited in the 2010 Work Plan. Meetings were held in October, November and December of 2010.

The purpose of the Groundwater Advisory Committee is to advise the County on the development, content, and implementation of the Washington County Groundwater Plan. This is a requirement of Minnesota Statute 103B.255. The Washington County Board of Commissioners appoints members to the Groundwater Advisory Committee. The 2011 Board of Commissioners include: Gary Kriesel (Chair), Dennis Hegberg (Vice-Chair), Autumn Lehrke, Bill Pulkrabek, and Lisa Weik.

2011 WORK PLAN CONTACT INFORMATION:

Jessica Collin-Pilarski
Associate Planner
Washington County Department
of Public Health & Environment
14949 62nd Street North
PO Box 6
Stillwater, MN 55082-0006
651-430-6703
jessica.collin-pilarski@co.washington.mn.us

Amanda Strommer
Program Manager
Washington County Department
of Public Health & Environment
14949 62nd Street North
PO Box 6
Stillwater, MN 55082-0006
651-430-6744
Amanda.strommer@co.washington.mn.us

(*Cover photo by Pete Ganzel)

Section I

Accomplishments

This section includes a list of significant past accomplishments and projects still being utilized annually and accomplishments specific to Watershed Districts/Water Management Organizations (WD/WMOs). The Section II 2011 Schedule of Activities includes detailed progress of specific implementation actions and activities.

The *Integrating Groundwater Protection into Watershed Rules* report was developed through the Water Consortium. Model language was developed to address groundwater supply, groundwater pollution prevention, groundwater dependent natural resources, and volume control and groundwater recharge protection. In 2007, WD/WMOs interested in adopting groundwater protection rules conducted a technical review of the rules and developed a Statement of Need and Reasonableness (SONAR).

The *Intercommunity Groundwater Protection, Sustaining Growth and Natural Resources in the Woodbury/Afton Area* study (funded through an LCMR Grant and grant partners) developed a groundwater and surface water model. The model evaluated the potential impacts increased pumping in Woodbury has on the aquifer system and on Valley Branch trout stream. In 2009, WCPHE had the model refined and updated the updated model will be incorporated into the Met Council's Metro Model. The updated model will be utilized to predict effects of future wells.

The *Integrating Groundwater and Surface Water Management in Southern Washington County* study and *Integrating Groundwater and Surface Water Management in Northern Washington County* study (funded through a BWSR Challenge Grant and grant partners) categorized groundwater and surface water resources. In 2009, WD/WMOs utilized the studies to implement watershed management plan goals.

Part I and II of the Wellhead Protection Program have been completed by: the City of Bayport, Cimarron Park, City of Cottage Grove, City of Forest Lake, City of Hugo, City of Lake Elmo, City of Lakeland, Minnesota Correctional Facility, City of Newport, City of Oakdale, Oak-Land Junior High, City of Oak Park Heights, City of St. Paul Park, City of Stillwater, and City of Woodbury. In addition, the Cities of Lino Lakes and North Saint Paul also completed Parts I and II of the Wellhead Protection Program. Regions of both cities' Wellhead Protection Areas reach into Washington County

MC published the Metropolitan Area Master Water Supply Plan that includes guidance documents, community and county profiles, datasets, and planning tools for state, regional and local water supply planners. The Plan emphasizes conservation, interjurisdictional cooperation, and long-term sustainability (2010).

The East Metro Water Resource Education Program (EMWREP) has funding dedicated through 2011 to provide water resource education county-wide. Funding partners include: the Cities of Cottage Grove, Dellwood, Lake Elmo, Forest Lake, Stillwater, and Willernie; the Town of West Lakeland; the Brown's Creek, Carnelian Marine St. Croix, Comfort Lake Forest Lake, Ramsey-Washington Metro, Rice Creek, South Washington, and Valley Branch Watershed Districts; the Middle St. Croix WMO; Washington County and Washington Conservation District.

In 2010, EMWREP education efforts within the county included:

- The MN DNR coordinated with EMWREP and other local partners hosted a “Workshop on the Water” for communities on the St. Croix River. Over 100 elected officials and decision makers attended. Topics included establishing policies and procedures to protect surface and groundwater resources during development and redevelopment.
- EMWREP and MN Extension hosted Stormwater U programs for several municipal staff and contractors in Washington County. Programming included turf maintenance, illicit discharge detection/elimination, and parking lot snow and ice management.
- The cities of Cottage Grove and Forest Lake (EMWREP partners) distributed MS4 Toolkit education materials at community events.
- Held six Blue Thumb workshops to encourage use of native plants, raingardens and shoreline plantings to reduce stormwater runoff and increase groundwater recharge. Blue Thumb was promoted at neighborhood parties, presentations and community events.
- News articles covered winter salt use; turf maintenance and irrigation; household water conservation; lake level/ groundwater level connection; and use of native plants and raingardens to improve infiltration and reduce household water use.
- Developed outreach materials for commercial entities, published an article in the Cottage Grove Chamber newsletter and gave a presentation at a Cottage Grove Chamber luncheon.
- Developed outreach programs for non-agriculture rural land owners and commercial entities.
- Conducted a survey during the County Fair, and a research assistant with the University of Minnesota CURA program conducting three focus group sessions with rural landowners this fall.

WD/WMOs Accomplishments

WDs, WMOs and WCPHE participated in staffing the Washington County Water Consortium Fair Booth in August. The exhibit included information on Blue Thumb initiatives and information on groundwater-surface water interactions. The 2010 fair booth focused on activities to protect natural resources and water resources on rural and agricultural properties.

Brown's Creek WD

- Continued the BMP cost-share program and approved 19 water quality improvement projects (e.g. raingardens) which promote groundwater recharge.
- Hosted groundwater model learning station at the Children's Water Festival in September. Educated over 1500 fifth grade students from the metro area on the importance of groundwater and the inter-relation of surface and groundwater quality and quantity.
- Implemented rules, including volume control for the 2-year rain event (pre-settlement vs. post-development); promotion of soil amendments to alleviate construction site soil compaction; and enhanced protection of groundwater dependent natural resources.
- Implemented the Fen Groundwater Dependent Natural Resources (GWDNR) Comprehensive Management Plan by reducing surface water flows into the fen.
- Completed the Stormwater Audit Pilot Program with the Washington Conservation District and Middle St. Croix Watershed Management Organization, including site specific education for landowners regarding water resource issues.
- Brown's Creek Biota Total Maximum Daily Load (TMDL) draft undergoing official review. Groundwater quantity and quality were determined, including their impact to the quality of Brown's Creek. Developing Brown's Creek Biota TMDL Implementation Plan.

Carnelian Marine St. Croix WD

- Reviewed development plans and revised rules to include buffers, infiltration, and document drainage areas.
- Joined the EMWREP program in March 2010. The Watershed District collaborated with County Parks and the Washington Conservation District on a demonstration stormwater treatment project at Square Lake that includes interpretive signage. This project was highlighted at the annual Square Lake Triathlon in September 2010.
- Hosted three neighborhood meetings with landowners in the Square, Sand and Long lake subwatersheds.

Comfort-Lake Forest Lake WD

- Initiated updates to the District's 2001 Watershed Management Plan, including a section on groundwater resources.
- Hosted a "*Planting for Clean Water*" workshop. The workshop addressed shoreland restoration and stabilization plantings using native plants as well as the use of infiltration/filtration practices (i.e. raingardens) to reduce stormwater runoff.
- Continued a BMP cost share program to promote native plantings (shoreline and raingardens) to provide wildlife habitat, control erosion, and protect water quality. To date projects have accounted for 48,000 square feet of native plants and over 1,450 feet of shoreline.

- Presented surface and groundwater management needs and alternative agricultural practices at the Forest Lake High School Agricultural Day.

Middle St. Croix WMO

- Implemented performance standards in the Second Generation Watershed Management Plan. The standards address wetlands, erosion and sediment control; and stormwater management including rate, and volume control. The WMO has increased coordination with the Local Governmental Units (LGUs) on the implementation of the standards.
- Continued BMP cost share program. Thirteen projects received funding; five of the thirteen projects are complete and include raingardens, buffer plantings, and pervious paver installation. The remaining projects will be completed in the spring of 2011.
- Completed the Stormwater Audit Pilot Program, a joint project with the BCWD, and the Washington Conservation District, funded by the BWSR to educate residents on water quality related issues on their own property.
- Completed an assessment of the land area within the MSCWMO draining to both Lily and McKusick Lake in Stillwater to identify priority locations for stormwater treatment features that would provide the most benefit for lake water quality in the most cost efficient manner.

Ramsey Washington Metro WD

- Provided watershed education and used new office building as a BMP demonstration/education site. The site includes raingardens, a green roof, and a porous pavement parking lot.
- Implemented district BMP Cost-Share Program to provide cost-share assistance to homeowners, businesses, and government agencies.
- Implemented rules and a permit program. The rules and permit requirements include stormwater runoff volume control standards and policies.
- Continued to implement the performance standards of the District's Watershed Management Plan, as well as increased coordination with the LGUs on the implementation of the standards. The plan includes standards for wetlands, erosion control, stormwater management, rate, and volume control.

Rice Creek WD

- Expanded implementation of a Resource Teacher Program that provides teachers at the middle school level with ready-made environmental education units including groundwater.
- Included Rice Creek WD's Groundwater Management & Planning Program in its 2010 Watershed Management Plan Update. This program established a number of monitoring and possible implementation activities necessary to better understand the relationship between surficial groundwater and groundwater dependent natural resources in the Rice Creek Watershed.
- Three raingarden projects were approved for funding in Washington County in 2010 as part of the Water Quality BMP Cost-Share program.
- Hosted a Winter Road Maintenance Workshop emphasizing innovative practices for reducing road salt usage and chloride inputs to our surface waters and groundwater. Nearly 50 municipal employees attended, including staff from the Cities of Forest Lake, Hugo and Birchwood Village.

South Washington WD

- Completed the Highway 61 and Powers Lake Retrofit Analyses in cooperation with the Washington Conservation District and Association of Metro Conservation Districts to identify the most cost effective projects for meeting the District's water quality goals. When implemented, projects identified in the reports will reduce phosphorus loading to surface waters and promote groundwater recharge through infiltration.
- Monitored surface water and groundwater to assess potential impacts, including extensive groundwater quality monitoring in the vicinity of the District's regional infiltration facilities in cooperation with the Washington Conservation District and Minnesota Department of Health. Data will provide insight to infiltration impacts on groundwater and the affects of land use changes as the area continues to develop.
- Continued the District's water quality cost share program to provide funding in three categories: Commercial/Municipal, Neighborhood, and Residential.
- Monitored snowmelt runoff to assess the benefit of retrofitting the City of Cottage Grove's de-icing equipment.

Valley Branch WD

- Evaluated the effect of developments on Valley Creek and assisted determining appropriate minimum floor elevations for proposed homes utilizing the tools developed through the groundwater/surface water interactions studies.
- The cost-share incentive program funded stormwater infiltration practices throughout the Valley Branch Watershed District.
- Participated with stakeholders to evaluate the effects on the baseflow of Valley Creek due to groundwater pumping by the City of Woodbury and identified potential sites to conduct additional monitoring.

In 2010 the following topics were addressed at the Washington County Water Consortium meetings.

January

Minimal Impact Design Standards and New State Stormwater Legislation

Jay Riggs, Washington Conservation District (WCD)

Minnesota updated its approach to managing stormwater by passing legislation directing the Pollution Control Agency to "develop performance standards, design standards, and other tools" to enable and promote improved stormwater management and better protect Minnesota's water resources. The result is Minimal Impact Design Standards (MIDS). The MIDS package allows communities in Washington County to adopt effective stormwater standards and techniques, meet regulatory requirements, and help Minnesota reach clean water goals.

Discussion on a Stormwater Retrofit Assessment Model and BMP Funding Opportunities

Shawn Tracy, Anoka Conservation District and Jay Riggs, WCD)

Shawn Tracy and the Anoka Conservation District have developed a Stormwater Retrofit Assessment model for urban areas. There is also the potential to use the assessment model for rural areas with some changes. There will be \$50,000 of cost-share funding available from the Metro Conservation Districts in 2010 for implementing targeted BMP's in Washington County. WCD staff discussed the implications of this project with water consortium members and strategized the best ways to leverage funding and design resources that will be available.

February

Urban Sub-watershed update

Pete Young, WCD

Follow-up from last month's meeting - the process of selecting sub-watersheds and moving forward with the initial assessment.

Groundwater Protection Spending Proposal

Shannon Lotthammer, Minnesota Pollution Control Agency (MPCA)

The 2009 Legislature requested MPCA to craft a groundwater spending plan for their review and approval. The five million dollar proposal includes implementation, planning and data sharing activities. Shannon gave an update on the status of the proposal, planned activities, and potential for collaboration and funding opportunities.

March

East Metro Water Resource Education Program (EMWREP)

Angie Hong, Washington Conservation District

Consortium meeting began a discussion about strategies for public outreach, education and communication. As a follow-up to that discussion, Angie reviewed some of the education and communication efforts already underway and/or planned in Washington County.

Capitol Region Watershed District - 2009 Resident Survey
Elizabeth Storey, Capitol Region Watershed District (CRWD)

This past year, CRWD worked with Wilder Foundation to conduct a research project that used phone surveys and focus groups to assess the knowledge, attitudes and behaviors of residents within their district. Elizabeth presented a summary of the project along with implications for how the findings will help CRWD to implement two new programs designed to reduce residential runoff: a downspout redirection program and a community leaf raking program.

Measuring the Impact of Blue Thumb Outreach Efforts in Washington County
Angie Hong, WCD

Since 2007, the EMWREP has been using the Blue Thumb program to promote partner BMP programs. In addition to counting the number of projects in the ground, there are other ways of measuring the impacts of our outreach.

Hardwood Creek Total Maximum Daily Limits (TMDL) Implementation Activities and Lower Hardwood Creek Restoration Project

Doug Thomas and Matt Kocian, Rice Creek Watershed District (RCWD)

Doug and Matt provided an update on current activities the RCWD is implementing on Hardwood Creek.

April

Tour of the Washington County Environmental Center

Adam Frederick, Washington County Public Health and Environment

Adam gave a tour of the facility including details on the sustainable features of the design and operation.

Capturing Phosphorus with Enhanced Stormwater Filtration

Andy Erickson, St. Anthony Falls Laboratory, University of Minnesota

Most treatment practices for urban runoff use settling or filtration to remove pollutants (e.g., phosphorus) associated with solids, but dissolved pollutants are typically not captured. Research has shown that a combination of sand filtration with steel wool or iron filings can capture dissolved phosphorus by adsorption to iron oxide (i.e., rust), which can significantly reduce the phosphorus load to water bodies. The presentation discussed results from the research, an application of an iron-enhanced sand filter that was installed in Maplewood and other applications that are being considered or are already in construction.

May

Washington County Land and Water Legacy Program Conservation Plan

Jane Harper, Washington County Administration

Amy Carolan and Jessica Thiel, WCD

WCD and a multi-agency work group discussed plan preparation to prioritize the county's natural area habitats for the purpose of guiding the expenditures of the county's Land and Water Legacy Program. Staff described the process used and presented the map products.

Minimal Impact Design Standards (MIDS) Pilot Project Update

Jay Riggs, WCD

Jay explained the MIDS project is to address anti-degradation. The legislative initiative was unallotted but funded through a 319 grant with WCD as the project manager. The group will choose one in each of the following categories for a pilot project: a MS4, a non MS4, and a county. In all cases there must be direct discharge to the St. Croix River.

Washington County MS4 Audit

Jay Riggs, WCD

Jacob Gave, Washington County Public Works Department

Jay and Jacob gave information on the process the county had to go through for the MS4 audit. The county was the first metro county to be audited. The MPCA is continuing to audit MS4's in Washington County.

Angie Hong, EMWREP

Angie updated the EMWREP website and shared the updates with the group.

Summer Workshop Brainstorm

Angie Hong, EMWREP

As a follow up to last year's boat tour series on the St. Croix River, Angie, Molly Shodeen and Michelle Hanson (DNR) met to discuss the 2010 summer plan. Angie solicited brainstorming ideas.

June

Washington County Rural and Agricultural BMP Programs Primer

Washington Conservation District

- State Cost-Share and other Board of Water and Soil Resources Programs
- Green Acres/Rural Preserves BWSR and Natural Resources Conservation Service (NRCS) programs
- Sustainable Forests Incentive Act
- Buckthorn and Other Weed Grants
- EMWREP Rural Lands
- Two new rural conservation programs

Natural Resources Conservation Service (NRCS) and other Federal Programs

Michelle Wohlers, USDA NRCS

3rd Crops and Water Quality

Jeff Jensen, Rural Advantage

Discovery Farm Program

Dennis Frame, University of Wisconsin-Extension

July

NO CONSORTIUM

August

Land Spreading in Washington County

Tina Dale, Washington County Public Health and Environment

Provided a brief history of Washington County's beneficial use utilization program, land application of by-products, and discussed of the department's current program and development.

Land Spreading of Septage

Pete Ganzel, Washington County Public Health and Environment

Discussed septic tank maintenance and recycling of septage, along with examples of land spreading of septage in other counties. Discussed potential and suitable application areas and whether land spreading should be considered in Washington County.

Land Spreading of Septage across the State of Minnesota

Clarence Manke, Minnesota Pollution Control Agency

Discussed the state's role as it pertains to land spreading of septage.

September

NO CONSORTIUM

October

Lake St. Croix TMDL Update and New Initiatives

- *Lake St. Croix TMDL Update and Status*

Denise Leezer, MPCA

Denise gave an overview of the TMDL Report, discussed the allocations/reductions needed and the process timeline. There was a brief discussion on the implementation planning timeline.

- *St. Croix River Association*

Deb Ryun, St. Croix River Association

Provided an update on the St. Croix River Association events and introduced recent grants.

- *Fixing the Top 50 Rural Nonpoint Phosphorus Sources (Top 50 P)*

Jay Riggs, WCD

The Top 50 P project will identify, assess, prioritize, and implement phosphorus reduction practices in rural areas directly tributary to Lake St. Croix.

- *The Valley Branch Watershed Outlet Monitoring Program*

John Hanson, Valley Branch Watershed District

This project will collect actual flow and phosphorus data at the only two remaining unmonitored discharge points from the VBWD into Lake St. Croix.

- *The Lake St. Croix Storm Water Retrofit*

Amy Carolan, Middle St. Croix Watershed Management Organization

This project will retrofit storm water treatment facilities in developed portions of Stillwater and Bayport. These retrofits propose to reduce the phosphorus load to Lake St. Croix at Perro Creek and in the City of Stillwater.

- *Lake St. Croix Nutrient Loading and Ecological Health Assessment*
Sue Magdalene, Science Museum of Minnesota St. Croix Watershed Research Station
The joint project partners of this project are the USGS, MCES, and SMM. The project will further the understanding of nutrient and trophic dynamics within Lake St. Croix, by providing improved estimates of the in-coming nutrient loads and of the internal nutrient loads of Lake St. Croix.

November

NO CONSORTIUM – BUDGET PRESENTATION

December

Afton/Lakeland Gully Stabilization Project

Amy Carolan, Middle St. Croix Watershed Management Organization

Pamela A.K. Massaro, P.E., Wenck Associates

The MSCWMO and the communities of Afton and Lakeland recently completed a stabilization project on a 1,000 linear foot ravine, which straddled the boundary between the two communities. Amy and Pam talked about the design and installation of the project as well as the successes and challenges associated with completing the project.

State of the Waters

Erik Anderson, WCD

Erik discussed lake grades and long-term water quality trends by watershed, summarized stream and stormwater nutrient loading assessments, and provided an update on impaired water bodies found in Washington County.

Section II

2011 Schedule of Activities

This section includes a progress update of the policies and methods from the 2010 Work Plan. Many of the goals in the 2010 work plan are carried over into 2011. It also includes a detailed breakdown of the 2011 Implementation Actions including team leaders and members, as well as specific activities to implement the Groundwater Plan policies.

The activities listed are not intended to be an all inclusive list of projects in Washington County. There may be other projects and studies in Washington County that may not be listed in the Schedule of Activities.

CHAPTER 2.0 NON-AGRICULTURAL LAND USE GOALS:

Chapter 2, Policy 1

Washington County supports basing planning, zoning and land use decisions on sound scientific data and understanding.

Implementation Action 1: Research Land Use Impacts on Groundwater Quality and Quantity

Lead: WCPHE

Team: MNEXT, DNR, MC, WD/WMO, LGUs, MPCA, MDH, WCD

Objective 1

Assess groundwater resources and the potential impacts from various non-agricultural land uses on water quality and quantity.

New Activities

- 1) South Washington WD are partnering with the Minnesota Department of Health to monitor groundwater quality down gradient of Bailey Lake, surrounding the District's large infiltration basins. Data will provide insight to infiltration impacts on groundwater and the effects of land use change as the area continues to develop.
- 2) MPCA was charged by the legislature to develop rules that consider groundwater sensitivity when siting landfills.
Applicable extract of legislative charge:
"The rules for the disposal of solid waste shall include site-specific criteria to prohibit solid waste disposal based on the area's sensitivity to groundwater contamination, including site-specific testing."

The new Financial Assurance and Siting (FASIT) Rule is expected to go into effect on July 31, 2010.

<http://www.pca.state.mn.us/index.php/waste/waste-permits-and-rules/waste-rulemaking/financial-assurance-and-siting-fasit-rulemaking.html>

- 3) Comfort Lake Forest Lake WD will be finalizing the 10 year update of its 2001 Watershed Management Plan in 2011, the updated plan includes a section on groundwater and groundwater dependent natural resources.

Ongoing Activities

- 1) Long range planning is critical to understanding and protecting groundwater resources. The following planning activities are ongoing:
 - WC is working with MPCA to identify monitoring wells in key urban and undeveloped settings for MPCA's ambient groundwater quality monitoring network. WCPHE is working with LGUs, MDH, and other agencies to collect and interpret data for groundwater monitoring plans and groundwater protection plans, as requested.
 - The Metropolitan Area Water Supply Advisory Committee will meet through 2012 to help guide the MC through the implementation of a Metropolitan Area Master Water Supply Plan.
 - WCD is working with WC to assist in implementing the WC Land and Water Legacy Program and watershed-based land conservation programs. The Washington County Land and Water Legacy Program Conservation Priorities Report includes a groundwater module that identifies lands that are critical to protect for both groundwater quality and quantity purposes. This information can be used by communities in guiding future development and land protection.
 - WCPHE and WCD will explore options to assess potential impacts to groundwater resources by stormwater management practices by coordinating surface and groundwater quality monitoring, and creating a guidance document for stormwater and groundwater sampling. This document should contain guidance on selection of sampling locations, water quality parameters to be monitored, sampling frequency, recommended analytical methodologies, data protocol, and data assessments to establish quality trends and risks to water supplies. WD/WMOs and LGUs will be encouraged to coordinate monitoring programs to minimize cost, optimize data, and assess potential impacts to groundwater through stormwater management.
- 2) Monitoring and interpretation of data is a cornerstone for observing trends and decision making. The following activities are in place for monitoring groundwater baseflow, impact on groundwater dependent natural resources, and water quality trends.
 - Groundwater baseflow monitoring in Brown's Creek and its tributaries (Brown's Creek WD).
 - Discharge and water quality in six groundwater dependent natural resources (Swedish Flag Creek, Gilbertson Creek, Mill Stream, Zavoral, Arcola and Willow Brook). Three of the six are also designated trout streams (Carnelian Marine St. Croix WD).

- Surficial groundwater levels and impacts to groundwater dependent natural resources (Rice Creek WD)
- The WCD and Watersheds are partnering with the MPCA to conduct multiple TMDL studies. The Brown's Creek Biota TMDL is undergoing official review (2010). Additional TMDLs underway include Lake St. Croix and the Carnelian Marine St. Croix Multi-Lakes. South Washington WD is also discussing approval of the watershed's plan as a TMDL report. TMDL implementation will be coordinated with LGUs and all other stakeholders.
- The WCD continues to work with the watersheds, the state, and others to develop and implement BMP performance and trend monitoring programs.
- South Washington WD works with member cities to monitor and assess the risk of stormwater infiltration to groundwater resources. The South Washington WD plan provides guidelines for local and regional infiltration of stormwater.

Completed Activities

- 1) Hardwood Creek (Rice Creek WD) and Comfort Lake Six Lakes (Comfort Lake Forest Lake WD) completed TMDLs and implementation plans.

Objective 2

Develop guidelines based on building density, percentage of impervious surfaces, stormwater management and groundwater consumption based on hydrogeologic characteristics.

Ongoing Activities

- 1) Most WD/WMOs have developed rules/ guidelines for stormwater management including methods to mimic the predevelopment infiltration of rainfall into the aquifer. These rules are enforced through on-going permitting of development and other land disturbing activities.
- 2) South Washington WD continues to work closely with member cities to monitor and assess the risk of stormwater infiltration to groundwater resources. The South Washington WD plan provides guidelines for local and regional infiltration of stormwater.
- 3) Implementation of TMDLs by the WCD will include activities to restore impaired waters.

Chapter 2, Policy 2

Washington County supports sharing technical information with local governments for developing land use plans and zoning ordinances, and in making land use decisions protective of groundwater.

Implementation Action 1: Land Use-Technical Consultation for Land Use Decisions

Lead: WCPHE

Team: LGUs, WCLM, WD/WMO, MC, WC

Objective 1

Provide cities and townships with descriptions of land uses that may not be suitable in un-sewered areas.

New Activities

- 1) WCD is working with the County to help guide land protection under the Land and Water Legacy Program and watershed-based land conservation programs. The Washington County Conservation Plan includes a groundwater module and will be implemented as part of the County Conservation Plan. This information will be useful for communities in guiding future development and land protection.

Ongoing Activities

- 1) Carnelian Marine St. Croix WD adopted and will implement rules to include buffers, infiltration, and document drainage areas.

Objective 2

Provide cities and townships with specific groundwater-related standards to look for in reviewing and making decisions for conditional use permits.

Ongoing Activities

- 1) WD/WMOs will attend meetings of the LGUs with which they share common land area to inform the LGUs of important watershed data which can assist LGUs in land use decision planning.
- 2) The South Washington WD watershed management plan contains specific guidance regarding infiltration of stormwater, both on-site and regionally. This guidance includes sensitivity to groundwater pollution. This information accounts for local groundwater conditions and is built from the South Washington County Groundwater Study.
- 3) WD/WMOs will continue developing guidelines for GWDNRs. WD/WMOs will begin contacting LGUs in their boundaries and conduct informational meetings.
- 4) Many of the LGU surface water management plans incorporate required wellhead protection plans to ensure adequate analysis of local infiltration practices when proposed.

Ongoing Activities

- 1) The South Washington WD promotes the adoption of surface water management plan containing an alternative sequencing procedure for areas where stormwater volume control using infiltration is not desired. The City of Cottage Grove has incorporated this approach into its plan.

Chapter 2, Policy 3

Washington County promotes local planning, land use and controls that protect groundwater quality and sustainability.

Implementation Action 1: Land Use-Groundwater Supply Sustainability

Lead: WCPHE

Team: WD/WMO, LGUs, DNR, MC

Objective 1

Recommend the Metropolitan Council consider the long-term sustainability of groundwater resources with respect to both water supply and importance in sustaining natural resources as a primary consideration in granting the extension of the MUSA.

Completed Activities

- 1) MC published the Metropolitan Area Master Water Supply Plan that includes guidance documents, community and county profiles, datasets, and planning tools for state, regional and local water supply planners. The Plan emphasizes conservation, interjurisdictional cooperation, and long-term sustainability.
- 2) The Minnesota Legislature created the Metropolitan Area Water Supply Advisory Committee to assist the MC in its effort to develop a Metropolitan Area Master Water Supply Plan. The Advisory Committee will continue to meet through 2012 to help guide the MC through the implementation of the Plan. (2010)

Implementation Action 2: Land Use-Integrating Groundwater Protection into Comprehensive Plans, Zoning Ordinances, and Decisions

Lead: LGUs

Team: WCLM, WD/WMO, WCPHE

Objective 1

Establish groundwater protection as a goal when making land use decisions and as a part of the comprehensive planning process. Incorporate Groundwater Plan recommendations into LGU comprehensive plans.

Ongoing Activities

- 1) DNR regional offices will provide presentations and general information upon request to LGUs on the *Quick Guide to Using Natural Resource Information* CD and booklet. The guide identifies key steps in natural resource based planning at the local level.

Objective 2

Assure coordination with other LGUs for groundwater sensitive areas, wellhead protection areas, water use contingency and allocation plans, and other groundwater issues so that the plans may complement and not conflict with other jurisdictions.

Ongoing Activities

- 1) LGUs will notify adjoining LGUs and WD/WMOs when developing a wellhead protection plan for drinking water supply wells.
- 2) WC will provide an educational platform for LGUs to interact and share information.
- 3) WD/WMOs will attend meetings of the LGUs with which they share common land area to inform the LGUs of important watershed data which can assist LGUs in land use decision planning.
- 4) WD/WMOs will continue developing guidelines for GWDNRs. WD/WMOs will begin contacting LGUs in their boundaries and conduct informational meetings.
- 5) LGUs are invited to participate when WD/WMOs update watershed management plans and rules.
- 6) The WCD, WD/WMOs, LGUs, and WCPHE will provide education regarding how land use change impacts surface water and groundwater and promote activities to protect groundwater quality and quantity.

Implementation Action 3: Land Use-Enforcing and Amending Groundwater Provisions in County and Local Mining Ordinances

Lead: WCLM

Team: LGUs, WCPHE, MPCA

Objective 1

Enforce groundwater-related provisions in County and local mining ordinances.

Ongoing Activities

- 1) PW-SLM will require, as a condition of approval for permits, that contamination be reported, removed, and treated according to existing law. Permits are up for review every five years.
- 2) PW-SLM will require a plan for on-site servicing of equipment and waste disposal that protects groundwater from contamination as a condition for issuance of renewed or new permits for asphalt plants. Permits are up for review every five years.
- 3) PW-SLM will require groundwater protection plans for asphalt production facilities including such measures as impermeable liners and proper waste disposal measures as necessary.
- 4) PW-SLM will require a bond from the operator of mining operations and/or asphalt plants to assure clean-up of any pollution or pollutant sources as necessary. PW-SLM currently requires a bond of reclamation for mining sites.

- 5) PW-SLM will continue to require annual reports and earmark mining license fees for regulatory activities. As necessary, PW-SLM will request additional information regarding protection of groundwater.
- 6) PW-SLM will amend the Washington County Mining Ordinance to require further groundwater protection measures.

Implementation Action 4: Land Use-Incorporating Wellhead Protection Plans

Lead: LGU

Team: WCPHE, WCLM, MDH

Objective 1

Adopt wellhead protection plan; create overlay districts and standards and incorporate them zoning ordinances and other related land use regulations.

New Activities

- 1) Lakeland and Oak Park Heights will begin to amend their existing Wellhead Protection Plans
- 2) The City of White Bear Lake and White Bear Township are developing Part II of their Wellhead Protection Plan; part of their Wellhead Protection Areas lie within Washington County.

Ongoing Activities

- 1) LGUs will continue to work with MDH and other agencies to collect and interpret data for wellhead protection plans.
- 2) MDH will continue to involve community public water systems in wellhead protection planning efforts. Forty-six Washington County public water supply systems are pending.
- 3) Scandia Elementary School will complete Part II of their Wellhead Protection Plan.
- 4) Mahtomedi began to develop Part 1 of its Wellhead Protection Plan

Completed Activities

- 1) Stillwater and Bayport completed Part II of their Wellhead Protection Plan. (2010)

Note: For a complete list of community water supplies that have completed their Wellhead Protection Plans to date please refer to Section I, Accomplishments.

**CHAPTER 3.0
AGRICULTURE, TURF, AND ANIMAL WASTE MANAGEMENT GOALS:**

Chapter 3, Policy 1

Washington County supports using sound scientific methods to assess agriculture and turf management impacts to groundwater resources and to develop education and best management practices programs.

Implementation Action 1: Research Groundwater Impacts from Agriculture, Turf Management, and Animal Wastes

Lead: WCPHE

Team: LGUs, WD/WMO, MDA, WCD, MPCA, MNEXT, WCLM

Objective 1

Conduct ongoing groundwater resource assessments to identify groundwater resources that have been impacted by or may be highly sensitive to fertilizer, pesticide, manure and animal wastes.

New Activities

- 1) County solid waste staff will coordinate with WD/WMOs and WCD in review of land application permits in areas where there are identified sensitive groundwater resources.

Ongoing Activities

- 1) A number of WD/WMOs have identified sensitive groundwater resources and are considering rules that require notification of materials applied to agricultural fields in these areas.

Objective 2

Provide model zoning language and mitigation strategies in areas shown to have the highest impacts or susceptibility to fertilizers, pesticides, or animal wastes.

Ongoing Activities

- 1) WD/WMOs will continue to develop and implement mitigation strategies in areas sensitive to groundwater contamination.

Chapter 3, Policy 2

Washington County promotes implementing educational and best management practices programs for storage, handling, and use of pesticides, fertilizers, and animal wastes.

Implementation Action 1: Education of Public and Local Government

Lead: MDA, MNEXT

Team: WCD, NRCS, WCPHE

Objective 1

Expand educational programs to educate the public and LGUs.

New Activities

- 1) Brown's Creek WD will begin a rural lands BMP/cost share incentive program in 2011.
- 2) Carnelian Marine St. Croix WD will begin an Agriculture BMP/Cost share incentive program.

Ongoing Activities

- 1) A number of WD/WMOs offer cost-share and technical assistance to landowners for rural and agricultural BMPs in cooperation with WCD.
- 2) MDA and MNEXT will provide education on the impacts of fertilizer and pesticide use on groundwater quality. MDA and MNEXT will facilitate and teach educational offerings for commercial and non-commercially licensed pesticide applicators at regional metro meetings. Licensed applicators are required to attend training and the focus is on pesticide safety and environmental protection. Additional educational outreach includes presentations at applicator recertification training and Certified Crop Adviser continuing education, crops day open houses and field days.
- 3) MNEXT will provide education on the proper use of chemical products, including the effects of different soil conditions on application rates and different application regimes. MNEXT provides information over the phone (1-800-232-9077) or on the internet (www.extension.umn.edu) as a source for gardening, agriculture, and environmental education.
- 4) WCD continues to work closely with land owners concerning rural and agricultural land management practices to protect water quality, including managing fertilizers and pesticides and impacts on soils. The WCD works with NRCS and other state and federal agencies to focus efforts to protect and restore natural resources in Washington County. WCD provides educational, technical, and cost-share assistance.
- 5) MDA has a number of programs that address groundwater, including a drinking water protection web-page that maps wellhead protection areas (<http://www.mda.state.mn.us/protecting.aspx>). MDA offers free irrigation water nitrate testing, and has a Nutrient Management Initiative program available for farmers enabling them to evaluate their current nitrogen or phosphorus management with respect to NRCS requirements (www.mda.state.mn.us/nmi).

Chapter 3, Policy 3

Washington County supports legislation and administrative rules that protect groundwater quality from degradation by agriculture, turf management or animal waste management practices.

Implementation Action 1: Exert Political Influence on Agriculture Related Legislation or Rules

Lead: MDA

Team: LGUs, WD/WMO, WCD

Objective 1

Provide comments on current legislative issues and administrative rules.

Ongoing Activities

- 1) MDA will be responsible for the development, promotion, and evaluation of voluntary Best Management Practices for pesticide use. Currently, pesticide BMPs for acetachlor are in the process of being updated. More information about this method may be found at:

<http://www.mda.state.mn.us/en/protecting/bmps.aspx>

- 2) The Agricultural Fertilizer Research and Education Council will continue to promote nutrient research and education.

<http://www.mda.state.mn.us/chemicals/fertilizers/afrec.aspx>

CHAPTER 4.0

SUBSURFACE SEWAGE TREATMENT SYSTEMS GOALS:

Chapter 4, Policy 1

Washington County supports a coordinated, multifaceted approach to regulating subsurface sewage treatment systems, including research, education, and regulation.

Implementation Action 1: Integrate County Programs

Lead: WCPHE

Team: LGU

Objective 1

Assure coordination and integration of SSTS program activities with Hazardous Waste and Groundwater program activities to reduce groundwater contamination related to subsurface sewage treatment systems.

Ongoing Activities

- 1) WCPHE, under the County SSTS Ordinance and local SSTS ordinances, will continue to regulate the location, design, installation, use, and maintenance of SSTS.
- 2) WCPHE SSTS program will coordinate with cities that are not contracted through Washington County.

- 3) WCD will continue to administer a loan program for failing septic systems through the AgBMP program. MDA funds this State revolving fund program. The loan is jointly administered by WCD and a cooperating local bank or financial institution.
- 4) WCPHE will identify hazardous waste generators that are potentially on SSTS. The Hazardous Waste and SSTS programs will coordinate to ensure compliance.

Implementation Action 2: Research Commercial-Industrial Waste Impacts

Lead: WCPHE

Team: LGU, MPCA, MDH

Objective 1

Research the wastes generated by commercial and industrial establishments on SSTS and evaluate the potential impact to human health and the environment. Evaluate whether SSTS are properly designed for commercial wastewater.

Ongoing Activities

- 1) WCPHE will develop a plan and requirements for testing waste strength for Food/Beverage/Lodging establishments that are on SSTS.

Implementation Action 3: Develop Groundwater Contamination Risk Assessment Method

Lead: WCPHE

Team: LGU

Objective 1

Develop a method to assign SSTS risk levels based on criteria such as age of system, geologic conditions, density, treatment method, and system design.

Ongoing Activities

- 1) WCPHE will meet with stakeholders to identify key risk factors associated with potential contamination from SSTS.

Chapter 4, Policy 2

Washington County promotes conformance with MN Statute 115.55 – 115.56, MN Rule 7080 through 7083, and the Washington County SSTS Ordinance in the construction, operation, design, inspection, and maintenance of SSTS.

Implementation Action 1: Require SSTS Inspection, Upgrades, or Replacements

Lead: WCPHE

Team: LGU

Objective 1

Revise County ordinance to require property owners to have a certificate of compliance to upgrade or replace non-compliant systems, and identify and properly close abandoned SSTS before property transfer. Require upgrade of non-compliant

SSTS, in accordance with the Washington County SSTS Ordinance. (**This Objective was completed in 2009**).

CHAPTER 5.0 WELLHEAD-AQUIFER PROTECTION AND WELL MANAGEMENT GOALS:

Chapter 5, Policy 1

Washington County supports the delineation and posting of wellhead protection areas and supports inter-governmental and inter-community coordination to implement planning and zoning in wellhead protection zones.

Implementation Action 1: Agency Implementation and Coordination of Wellhead Protection Programs

Lead: MDH

Team: MPCA, WCPHE, LGUs, WD/WMO

Objective 1

Washington County will partner with the Minnesota Department of Health and LGUs to implement Wellhead Protection Programs in Washington County.

New Activities

- 1) MDH has awarded grants to seven public water suppliers for WHP and groundwater protection activities, including the Forest Hill Golf Club; Marine Landing; Hidden Harbor Marina; Cimarron Park; and the Cities of Cottage Grove, Oak Park Heights and Woodbury.
- 2) Lakeland and Oak Park Heights will begin amending their existing WHP plans.
- 3) White Bear Lake and White Bear Township are developing Part II of their WHP plan – parts of both cities wellhead protection areas extend into Washington County.

Ongoing Activities

- 1) WCPHE will continue to assist LGUs with Wellhead Protection Plans.
- 2) MDH will continue to involve community public water systems in wellhead protection planning efforts. Forty-six Washington County public water supply systems are pending.
- 3) Mahtomedi began to develop Part 1 of the Wellhead Protection Plan.
- 4) Scandia Elementary School will complete Part II of their Wellhead Protection Plans.

- 5) WCD will be working with the County to help guide land protection under the Land and Water Legacy Program and watershed-based land conservation programs. Wellhead protection maps will be integrated with the GIS MLCCS modeling process.

Completed Activities

- 1) Stillwater has completed Part II of their Wellhead Protection Plan (2010).

Objective 2

Washington County will assist LGUs in obtaining all available applicable groundwater information.

Ongoing Activities

- 1) The WCD continues to maintain and enhance a county-wide water resource database.

Implementation Action 2: Community Education, Posting of Wellhead Protection Areas, and Inter-Community Coordination

Lead: WC

Team: WCPHE, WD/WMO, LGUs, MDH

Objective 1

Assist public water suppliers in the implementation of wellhead protection programs by placarding local wellhead protection area boundaries (where appropriate) for public education and awareness.

Ongoing Activities

- 1) LGUs will continue to inventory locations of wells, individual sewage treatment systems, and underground storage tanks within wellhead protection areas.
- 2) The WC will facilitate the coordination of LGUs to notify residents with wells, individual sewage treatment systems, and underground storage tanks if they are in a wellhead protection area.
- 3) WD/WMOs will attend meetings of the LGUs with which they share common land area to inform the LGUs of important watershed data which can assist LGUs in land use decision planning.

Objective 2

Facilitate wellhead protection steering committees when the wellhead protection area crosses political jurisdictions upon request by the public water suppliers.

Ongoing Activities

- 1) WC and WCPHE will assist LGUs, as requested, with any issues that may arise in the wellhead protection process.

Chapter 5, Policy 2

Washington County supports the enforcement and implementation of the Well and Boring Code (MN Rules Chapter 4725) by the Minnesota Department of Health to prevent contamination of groundwater.

Implementation Action 1: Abandoned Well Reporting Requirements and Comments to Well Code Legislation

Lead: MDH

Team: LGUs, WCPHE

Objective 1

Recommend that the Well and Boring Code requires reporting of all abandoned wells to the MDH. Review and provide comments to pending Well & Boring Code legislation.

Ongoing Activities

- 1) WCPHE, WD/WMOs, and LGUs can report abandoned wells to MDH. MDH will notify the well owners of their obligation to bring the well into compliance with Minnesota statutes and rules. This may include having the well repaired and placed back into service, or having it permanently sealed by a licensed well contractor. Press releases will be used to inform citizens about the contamination threats and physical dangers associated with abandoned wells, and the statute and rule requirements for bringing them into compliance.
- 2) State Well Disclosure under Minnesota Statutes, section 103I.235 requires that when property is sold, the seller of the property must provide the buyer with a written disclosure indicating the number of wells on the property, their locations, and the status of each well; whether it is “in-use,” “not-in-use,” or “sealed by a licensed well contractor.” The well disclosure must be made before a purchase agreement is signed, so that the buyer and seller can negotiate who will pay for well repairs or well sealing, for wells that are not in use, that have not been properly sealed by a licensed well contractor.
- 3) WCPHE, WD/WMOs and LGUs can submit comments on well code issues to MDH well management section.

Implementation Action 2: Well Sealing Financial Incentives and Cost Sharing

Lead: MDH

Team: LGUs, WCLM, WD/WMO, WCD

Objective 1

Provide financial incentive for identifying and sealing abandoned wells. Develop and adopt a sliding-fee scale for well sealing cost-share programs.

New Activities

- 1) The Minnesota Department of Health has Source Water Protection Grant Money available for improvements to qualifying Community and Non-Community Public Water Supply Facilities.

Ongoing Activities

- 1) Continue to seek funding sources to identify and properly seal abandoned wells within the Wellhead Protection Areas of municipal water supply wells. (In 2010, WCPHE applied for a BWSR Clean Water Assistance Grant but did not secure funding.)
- 2) WCPHA will provide cost share assistance for sealing abandoned wells and will identify high priority areas utilizing NRBG funding.
- 3) WCPHE will make information available to interested parties on well sealing loans. Examples include:
 - Agricultural Best Management Practices Loan Program offers loans for well sealing. MDA administers this program. The loan is jointly administered by WCD and a cooperating local bank or financial institution.
 - Rural Housing Home Improvement Loan and Grant Program offers loans and grants for well sealing. The Rural Development office of the U.S. Department of Agriculture administers this program.
 - The Fix-Up Fund program offers loans for well sealing. The Minnesota Housing Finance Agency administers this program along with community lenders and housing agencies.

CHAPTER 6.0 GROUNDWATER SUPPLY GOALS:

Chapter 6, Policy 1

Washington County will promote research and water supply planning to provide for sustainable water supplies and, to the extent possible, minimize the loss of flow to surface water features and groundwater dependent natural resources.

Implementation Action 1: Water Supply Assessment-Research Water Supply Sustainability and Effects on Natural Resources

Lead: WCPHE

Team: LGU, WD/WMO, MC, WCD

Objective 1

Evaluate current and projected water use to determine the impacts to groundwater levels, flow directions, long-term water supplies, and groundwater dependent natural resources. Groundwater dependent natural resources include, but are not limited to, fens and other wetland seepage communities, trout streams, lakes, and wetlands.

New Activities

- 1) Carnelian Marine St. Croix WD monitors five spring creeks tributary to the Saint Croix for flow and quality.

- 2) DNR Division of Ecological and Water Resources is charged, in collaboration with other agencies, with developing a plan for groundwater level monitoring in the 11-county metro area to better understand aquifer and flow pathways; protect long-term water supplies; prevent water quality degradation; and ensure that water use does not harm ecosystems.
- 3) The MPCA Ambient Groundwater Monitoring Network is testing for emerging contaminants in groundwater. The well water is analyzed for a large suite of chemicals, including pharmaceuticals, antibiotics, fire retardants, DEET, plasticizers, hormones, and fragrances. The samples are being collected from 40 network wells in FY10 and another 40 wells in FY11.

Ongoing Activities

- 1) MC has developed the East Metro Water Supply Work Group to foster a cooperative approach to developing water supplies and addressing issues in Washington County.
- 2) MC published the Metropolitan Area Master Water Supply Plan that includes guidance documents, community and county profiles, datasets, and planning tools for state, regional and local water supply planners. The Plan emphasizes conservation, interjurisdictional cooperation, and long-term sustainability.
- 3) The Minnesota Legislature created the Metropolitan Area Water Supply Advisory Committee to assist the MC in its effort to develop a Metropolitan Area Master Water Supply Plan. The Advisory Committee will continue to meet through 2012 to help guide the MC through the implementation of the Plan.
- 4) WCPHE will work with LGUs, MDH, and other agencies to collect and interpret data for groundwater monitoring plans and groundwater protection plans, as requested.
- 5) MC will maintain the regional groundwater model (Metro Model 2) for the purpose of evaluating effects of proposed withdrawals on water resources and ensure supplies are developed sustainably.

Objective 2

These evaluations will be used for developing water management policies and rules, water supply plans, and to provide DNR with support in processing groundwater appropriation permits.

Ongoing Activities

- 1) WD/WMOs will develop, where appropriate, guidelines for GWDNRs. WD/WMOs will begin contacting LGUs within their boundaries and conduct informational meetings.

Chapter 6, Policy 2

Washington County supports local and State plans, policies, and permitting programs that sustain groundwater supplies and related natural resources.

Implementation Action 1: Groundwater Appropriations-Permitting Commentary

Lead: DNR

Team: LGU, WD/WMO, WCD, WCLM, MDH, MC, WCPHE

Objective 1

Provide an opportunity to local government or special governmental units to comment on groundwater appropriation permit applications in applying MN Rules 6115.0600 to 6115.0810 and MN Statutes 103G.271 to restrict large volume pumping of aquifers in regions where overuse of groundwater will negatively impact natural resources or interfere with current well use.

New Activities

- 1) Carnelian Marine St. Croix WD is monitoring a spring creek adjacent to a proposed gravel operation to monitor for potential/future impacts and will provide comment on EIS for possible impacts to groundwater dependent natural resources.

Ongoing Activities

- 1) DNR (Minnesota Statutes Chapter 103G.291) will continue to require public water suppliers serving more than 1,000 people to have a Water Supply Plan. Public water suppliers must update the plan every ten years. DNR and MDH require demand reduction measures to be implemented before approvals can be granted for increased water volumes or new municipal wells for public water supplies. The demand reduction measures must include a public education program and an evaluation of rate structures and their impacts on conservation.
- 2) DNR (Minnesota Statutes Chapter 103G.271) may not issue new water use permits for uses that will appropriate water from the Mt. Simon-Hinckley aquifer in a metropolitan county, unless the appropriation is for potable water use, there are no feasible or practical alternatives to this source, and a water conservation plan is incorporated with the permit.
- 3) DNR may require public water suppliers to adopt and enforce water use restrictions when the Governor declares a critical water deficiency. The restrictions must limit sprinkling lawns, washing vehicles, irrigating golf courses and parks, and other nonessential uses and have appropriate penalties for failure to comply with restrictions.
- 4) WCD and WD/WMOs routinely review and comment on appropriation permits within the watershed.

Implementation Action 2: Groundwater Appropriations-Rules Protecting Natural Resources

Lead: WD/WMO

Team: LGU, WCPHE, DNR

Objective 1

Develop and adopt rules or policies on the quantity of water used in areas where existing wells and/or groundwater dependent natural resources could be negatively impacted by overuse of groundwater. Negative impacts include reduced flow to surface water bodies, lowering of lake or wetland levels, or interference with other wells.

Ongoing Activities

- 1) Under Minnesota Statute 103D.201 Subd.2 (14), WDs have the authority to provide protection of groundwater resources and regulate use and appropriations. Upon generation of future WD plans they will consider language or take steps to incorporate Minnesota Statute 103D.335 Subd. 10 in the watershed plan as defined in Minnesota Statute 103D.341 Subd. 1. Watersheds can limit water appropriations that are not regulated according to DNR appropriation levels.

Chapter 6, Policy 3

Washington County will promote educational efforts focused on the conservation of water resources.

Implementation Action 1: Groundwater Conservation Plans-Assessing Effectiveness-Assisting Communities

Lead: MC

Team: WCPHE, DNR, WD/WMO, WCD

Objective 1

Develop methods to determine the effectiveness of municipal water conservation plans. Assist communities in the development of water conservation plans and ordinances.

Ongoing Activities

- 1) Minnesota Legislature directs the MC to identify, through analysis and planning, sustainable water supply options to meet the region's future demand (Minnesota Statute 473.1565). The MC actively partners with local units of government and state agencies to identify and address water supply problems.
- 2) The Minnesota Legislature created the Metropolitan Area Water Supply Advisory Committee to assist the MC in its effort to develop a Metropolitan Area Master Water Supply Plan. The Advisory Committee will continue to meet through 2012 to help guide the MC through the implementation of the Plan.

Implementation Action 2: Groundwater Conservation-Recycling and Reducing Consumption

Lead: MC

Team: WCPHE, DNR, WD/WMO, LGU

Objective 1

Provide information and assistance to local governments, businesses and industries to reduce water use and to increase recycling of process and cooling water used in manufacturing facilities.

Ongoing Activities

- 1) MC reviews local water supply plans to ensure communities with water supply systems have a conservation program (Minnesota Statute 473.859). Water conservation programs used by the suppliers include water conservation pricing, metering, public education, and leak detection and repair. MC works with cities to implement conservation programs that focus on industries and residents. Currently, the communities with approved conservation programs include: Cimarron, Cottage Grove, Forest Lake, Hugo, Lake Elmo, Mahtomedi, Oakdale, Woodbury, Bayport, Lakeland, Newport, Oak Park Heights, Saint Paul Park and Stillwater.
The MC encourages communities to utilize the water conservation toolbox, located at:
<http://www.metrocouncil.org/environment/WaterSupply/conservationtoolbox.htm>.
- 2) By December 31, 2010, DNR will no longer allow appropriations for once-through air conditioning in excess of 5,000,000 gallons per year and lake level maintenance of surface water levels in excess of 10,000,000 gallons per year under Minnesota Statute 103G.271 Subd. 5a and 5b.

Implementation Action 3: Groundwater Conservation-Community Water Use Reduction Education

Lead: WCPHE

Team: MNEXT, DNR, MC, WD/WMO, LGU

Objective 1

Inform and educate local government officials on community conservation techniques (such as changing water rate structures, establishing sprinkling ordinances, establishing Water Conservation Boards, conducting joint energy/water audits, creating showerhead or toilet replacement programs, or conducting water leak detection projects).

Ongoing Activities

- 1) MC will make information available to LGUs through newsletters and its water conservation toolbox.
<http://www.metrocouncil.org/environment/WaterSupply/conservationtoolbox.htm>

- 2) DNR will educate water appropriation permit holders on the water, wastewater, and energy saving benefits from conservation measures. Examples that LGUs may incorporate include metering, water audits, leak detection and repair, and retrofitting. All new irrigation systems must have rain detection devices.
- 3) Blue Thumb kiosks are on display at 10 of the county libraries and additional information kiosks have been added at the county and state parks entry stations and Carpenter Nature Center. Blue Thumb brochures are also available at the county service centers.
- 4) EMWREP continues to collaborate regionally with local units of government, non-profit organizations, and community and service groups to raise awareness of water resource issues and promote conservation activities in the east metro area.

Chapter 6, Policy 4

Washington County supports the coordination of efforts for early detection of contaminants, assessment of groundwater contamination trends, and promotes the responsible use or conservation of groundwater being pumped for remediation or containment purposes.

Implementation Action 1: Use of Non-Potable Groundwater

Lead: WCPHE

Team: WD/WMO, MPCA, MDH

Objective 1

Explore the potential for the use of contaminated water for non-potable needs in conjunction with groundwater clean-up.

New Activities

- 1) The Cities of Cottage Grove and Woodbury organized a Water Remediation Task Force with MDH, PCA, DNR, and Met Council to create a process to identify, evaluate and determine beneficial use and water quality objectives for the PFC groundwater remediation water being pumped from the Cottage Grove 3M plant site and the Woodbury 3M disposal site.

Ongoing Activities

- 1) MDH will encourage community wells with TCE treatment for new cluster developments in the Baytown Special Well Construction Area.

Implementation Action 2: Groundwater Contamination Education

Lead: WCPHE

Team: MNEXT, WCD, MPCA, MDH, WD/WMO

Objective 1

Educate County residents and the business community on the impacts of groundwater contamination to potable water supplies and economics.

New Activities

- 1) MDH is writing a health assessment for the communities south of Interstate-94 affected by PFC contamination in the groundwater.

Ongoing Activities

- 1) MC has developed the East Metro Water Supply Work Group to foster a cooperative approach to developing water supplies and addressing issues in Washington County
- 2) MDH, MPCA, and WCPHE will host public meetings, as necessary, to address issues in the Baytown/West Lakeland SWCA and Lake Elmo/Oakdale SWCA.
- 3) WCPHE, WCD, and Watershed Districts will host surface water and groundwater resources informational booths at the Washington County Fair.
- 4) MDH, MPCA, and WCPHE will continue to host public meetings, as necessary, to address PFC issues when new information becomes available.

Implementation Action 3: Groundwater Supply Assessment-Impacts of Contamination on Water Supply

Lead: WCPHE

Team: WCD, MPCA, MDH

Objective 1

Conduct a County-wide assessment on the impacts of groundwater contamination on water supply. Determine the locations of contaminants, the volumetric loss of potable water, and the associated costs for treatment and clean-up.

New Activities

- 1) The Minnesota Attorney General's Office filed a claim for damages for the injury - contamination by perfluorochemicals, known as PFCs - caused by 3M to the state's natural resources (groundwater).

Ongoing Activities

- 1) WCPHE will work with MPCA, MDH, and LGU's within SWCA's to maintain updated information and pursue clean-up activities. Washington County currently has four SWCA's within its boundaries: Lake Elmo/Oakdale SWCA, Baytown/West Lakeland SWCA, Lakeland/Lakeland Shores SWCA, and St. Paul Park/Newport SWCA. For current information, click on the "Groundwater" link on the county's website:
http://www.co.washington.mn.us/info_for_residents/environment/water_resources/
/ or call 651-430-6655.

CHAPTER 7.0 GROUNDWATER SURFACE WATER INTERACTION GOALS:

Chapter 7, Policy 1

Washington County supports research, assessment, and policies that aid in the integration of surface water and groundwater management.

Implementation Action 1: Research Groundwater and Surface Water Functions.

Lead: WCPHE

Team: WCD, WD/WMO, DNR, MC

Objective 1

Conduct research to inventory and develop a priority ranking system for the groundwater recharge or discharge function of lakes, wetlands, and land areas.

New Activities

- 1) The U. S. Geological Survey and state and local agencies are partnering on a study to characterize groundwater and surface water interactions to understand and characterize the large fluctuations in water level in White Bear Lake.

Ongoing Activities

- 1) Brown's Creek WD is developing a groundwater monitoring plan and will continue implementation

Objective 2

Make identification and ranking of groundwater recharge areas a priority element of WD/WMO local wetland and natural resource inventories.

Ongoing Activities

- 1) WD/WMOs and WCD will continue to incorporate information from the *Integrating Groundwater and Surface Water Management – Northern and Southern Washington County* studies in wetland and natural resource inventories.

Chapter 7, Policy 2

Washington County supports inter-governmental coordination and cooperation in support of existing and/or in developing new groundwater, surface water and wetland rules, policies, and programs.

Implementation Action 1: Groundwater Recharge Area Management

Lead: LGUs

Team: WCLM, WD/WMO, MC, WCPHE, DNR, WC

Objective 1

Develop land use regulations to protect groundwater resources based on completed studies and rankings of groundwater recharge areas.

New Activities

- 1) WCD will be working with the County to help guide land protection under the Land and Water Legacy Program and watershed-based land conservation programs. A GIS-based model will be developed that includes a groundwater module and will be implemented as part of the County Conservation Plan. This information will be useful for communities in guiding future development and land protection.

Implementation Action 2: Groundwater-Surface Water Interaction Education

Lead: WD/WMO

Team: WCPHE, WCD, WCLM, LGUs, DNR, MC, WC

Objective 1

Provide education to citizens and public officials on the inter-relation of surface and groundwater quality and quantity; the value of and need to protect groundwater recharge areas and wetlands; and implementation of Best Management Practices and low-impact development and redevelopment strategies to protect groundwater resources.

Ongoing Activities

- 1) WD/WMOs will continue to develop groundwater protection policies and incorporate them into rules based on groundwater and surface water studies throughout Washington County.
- 2) WD/WMOs will attend meetings of the LGUs with which they share common land area to inform the LGUs of important watershed data which can assist LGUs in land use decision planning.
- 3) Blue Thumb kiosks are on display at 10 of the county libraries and additional information kiosks have been added at the county and state parks entry stations and Carpenter Nature Center. Blue Thumb brochures are also available at the county service centers.
- 4) Most WD/WMOs have developed and are implementing guidelines and standards concerning storm water runoff rate and volume through localized rules and permitting.
- 5) WCPHE will work internally with the groundwater/surface water program and solid and hazardous waste program to develop groundwater educational outreach. Targeted education to homeowners regarding proper use and disposal of lawn fertilizers and pesticides will be one of the main goals.

Chapter 7, Policy 3

Washington County supports the development and adoption of Best Management Practices and rules to control rates and volumes of runoff to reduce non-point source pollution and maintain groundwater recharge.

Implementation Action 1: Develop Runoff Quality and Volume Control Rules

Lead: WD/WMO

Team: WCLM, LGUs

Objective 1

For all new developments and re-developments, adopt rules controlling stormwater runoff volume and rate and establish performance standards based on issues identified in water resource plans, inventories or studies, and in available scientific literature.

New Activities

- 1) South Washington Watershed District and the Washington Conservation District are currently working with the South Washington County Schools ISD 833 to install a large bioretention area at the District Service Center in Cottage Grove.

Ongoing Activities

- 1) Most WD/WMOs have developed and are implementing guidelines and standards concerning storm water runoff rate and volume through localized rules and permitting. Enhanced treatment opportunities will be identified and incentives offered through BMP and other cost-share programs in partnership with the WCD.
- 2) South Washington WD continues to work closely with member cities to monitor and assess the risk of stormwater infiltration to groundwater resources. The South Washington WD plan provides guidelines for local and regional infiltration of stormwater.
- 3) WCPHE and WC will explore options to assess potential impacts to groundwater resources of stormwater management practices by 1) coordinating surface and groundwater quality monitoring, and 2) creating a guidance document for stormwater and groundwater sampling. This document should contain guidance on selection of sampling locations, water quality parameters to be monitored, sampling frequency, recommended analytical methodologies, data protocol, and data assessments to establish quality trends and risks to water supplies. WD/WMOs and LGUs should be encouraged to coordinate monitoring programs to minimize cost, maximize data, and assess potential impacts to groundwater through stormwater management.
- 4) WD/WMOs and WCD are giving BMP program presentations for homeowners, home owner associations, lake associations and other community organizations.

CHAPTER 8.0

HAZARDOUS MATERIALS MANAGEMENT AND TRANSPORTATION GOALS:

Chapter 8, Policy 1

Washington County supports current State and County rules and permitting programs that regulate hazardous materials storage, transportation, disposal, and clean-up.

Implementation Action: Continue existing county hazardous waste generator licensing/technical assistance/education and HHW programs. Continue to enforce hazardous waste management regulations.

Lead: WCPHE

Team:

Objective 1

Assist homeowners with the management of household hazardous waste, electronics, and recyclables.

New Activity

- 1) Washington County designed and constructed an Environmental Center to provide residents with a free and convenient disposal option for household hazardous waste, electronics, and recyclables. The county encourages reuse of products in the Free Products Room. Washington County has a reciprocal use agreement with the counties of Anoka, Carver, Chisago, Dakota, Hennepin and Ramsey.

Chapter 8, Policy 2

Washington County supports the current emergency response structure to address hazardous materials spills and pipeline ruptures.

Implementation Action: Continue to improve methods of information-sharing with the MPCA and MDA for hazardous materials spills. Ensure communication and coordination to assist local government officials and citizens.

Lead: WCPHE

Team: LGUs, MPCA, MDA

Objective 1

Ensure communication and coordination to assist local government officials and citizens.

New Activity

- 1) From July 26 – 30, 2010, personnel from multiple Washington County departments; the Cities of Bayport, Cottage Grove, Forest Lake, Lake Elmo, Mahtomedi, Oak Park Heights, Oakdale, Stillwater and Woodbury; and multiple other partners participated in a Community-specific Integrated Emergency Management Course (IEMC). The IEMC provides an in-depth training and exercise experience for participants from a single jurisdiction (Washington

County). The IEMC provides participants with a unique understanding of the roles, resources, and functions of city, county, state, and federal agencies, as well as private sector and volunteer organizations. Equally as important, the experience provides the opportunity to share knowledge, and build and enhance relationships before an event happens.

Chapter 8, Policy 3

Washington County supports working with communities to develop groundwater protection policies related to the siting and permitting of new commercial and industrial development.

Implementation Action 1: Provide Consultation and Technical Assistance to LGUs

Lead: WCPHE

Team: MDH

Objective 1

Assist LGUs with groundwater monitoring plan or groundwater protection plan requirements. Provide “model” plans to LGUs. Assist LGUs in plan review and approval process. Where available, use wellhead protection plans to assist with the review process.

Ongoing Activities

- 1) WCPHE will work with LGUs, MDH, and other agencies to collect and interpret data for groundwater monitoring plans and groundwater protection plans, as requested.

Implementation Action 2: Groundwater Planning and Monitoring as Part of Building Permit or Conditional Use Permit Process

Lead: LGUs

Team: MDH, WCPHE, MPCA, WCLM

Objective 1

Require a groundwater monitoring plan or groundwater protection plan as part of a permit application for businesses that store, use, or transport hazardous materials and for properties formerly used as a waste disposal site or waste transfer facility. Where available, use wellhead protection plans to assist with this process.

Ongoing Activities

- 1) WCPHE will meet with LGUs to develop model language and procedures for this type of planning as requested.

Chapter 8, Policy 4

Washington County will advocate for and supports cooperative efforts to develop alternatives to using and storing salt for de-icing operations that are protective of public safety and the environment.

Implementation Action1: Develop policies requiring proper storage (covered and lined facilities) of road de-icing and dust suppression materials. Explore the feasibility of inter-governmental cooperation in the construction and use of storage facilities.

Lead: LGUs

Team: WCTPD, MNDOT

Objective 1:

Support use of new technology for application and/or storage of road de-icing materials. Support surface water and groundwater monitoring.

New Activity

- 1) City of Cottage Grove and the City of Woodbury installed new salting/sanding equipment on plow trucks for more precise application rates that respond to road temperature and truck speed.
- 2) SWWD annually monitors for chloride levels in the City of Cottage Grove's stormwater system to evaluate the impact of reduced salt applications on roadways in the winter.

Section III

Emerging Issues and Ideas:

During the annual process of reviewing and updating the annual Work Plans a number of “emerging issues and ideas” were identified. These issues and ideas may yield opportunities for preservation and protection of quality or quantity of groundwater resource.

The Groundwater Advisory Committee has developed the list below and intends to refer to this section when drafting the 2013-2023 Groundwater Plan.

- Consider a program designated to locate unknown abandoned wells so they can be properly sealed (see Chapter 5, Policy 2, Implementation Action 2, Objective 1).
- Gravel mining operations in Washington County potentially increase the vulnerability of groundwater to pollution. Careful consideration needs to be taken as these sites are retired and remediation plans are considered.
- Consider a comprehensive and coordinated groundwater sampling across the county that includes: mapping and annual review for trends and concerns.
- Potential threat of pharmaceuticals in groundwater should be studied to determine the nature and extent of the threat.
- Increased focus on conservation and re-use practices of water resources.
- Water is becoming a commodity. Washington County should remain aware of any future programs, conditions, or appropriations that could significantly diminish or a deplete a groundwater resource..
- Review process for land application of industrial/commercial waste. (Chapter 3, Policy 1)
- Review storage and disposal procedures for animal waste from kennel operations for kennels on subsurface sewage treatment systems (Chapter 3, Policy 3).
- Encourage less reliance on groundwater for irrigation.
- Work with the state climatology office to predict recharge issues association with climate change, including such issues as population increase, settlement patterns, more impervious surface, less recharge, etc.
- Explore reuse options for industrial waters, gray and black water, and stormwater runoff.

Section IV

2011 Anticipated Funding Sources

This section includes a breakdown of the 2010 projects and funding sources. Included are funding from grants and groundwater plan team leaders and members (which includes both state and local agencies). The budget includes funding strategies for 2011 and 2012, and potential grant programs. Also included is the 2011 Budget Summary for Watershed Districts and Water Management Organizations.

PROJECT AND FUNDING SOURCES	2010	2011	2012
Shared Water Resource Educator			
Washington County PHE	10,350	10,350	10,350
Washington Conservation District	10,350	10,712	11,087
Watershed Organizations	64,170	89,269	92,045
Local Government Units	9,316	10,176	10,530
Total	94,186	120,507	124,012
Aquifer Protection - Abandoned Well Sealing Program			
Washington County PHE	10,000	10,000	10,000
Washington Conservation District	2,000	10,000	10,000
Total	12,000	20,000	20,000
Subsurface Sewage Treatment System Loan Program			
Washington Conservation District	50,000	70,000	70,000
Total	50,000	70,000	70,000
Water Monitoring Network			
Washington County PHE	15,000	15,000	15,000
Washington Conservation District (Ob well)	5,000	5,000	5,000
Total	20,000	20,000	20,000

Water Management Organizations 2011 Budget

*Revised on 10-28-10

	2011					2010 - 2011 Comparison			
	Total Budgeted Expenditures	Levy*	Grants	Interest/Fees	2010 Carry Over/FB	2010 Total Budgeted Expenditures	2010 -2011 % Change	2010 Levy	2010 - 2011 % Change
Watershed Districts									
BCWD	\$1,418,150	\$720,000	\$341,500		\$356,650	\$1,214,777	16.74%	\$727,700	-1.06%
CMSCWD	\$588,500	\$428,500	\$115,000		\$45,000	\$652,600	-9.82%	\$487,600	-12.12%
CLFLWD	\$1,025,010	\$755,000			\$270,010	\$1,297,844	-21.02%	\$755,000	0.00%
RVMWWD	\$7,691,379	\$3,550,379	\$1,896,000	\$45,000	\$2,200,000	\$5,938,379	29.52%	\$3,525,379	0.71%
RCWD	\$4,185,909	\$3,403,754	\$315,000	\$164,300	\$302,855	\$3,547,829	17.99%	\$3,403,754	0.00%
SWWD**	\$3,332,029	\$687,279		\$2,644,750		\$3,314,361	0.53%	\$687,361	-0.01%
VBWD***	\$709,500	\$641,200	\$15,300	\$3,000	\$50,000	\$1,198,000	-40.78%	\$564,000	13.69%
Joint Power WMO****									
MSCWMO	\$237,500	\$102,500	\$80,000	\$0	\$55,000	\$180,200	31.80%	\$102,500	0.00%

* The levy for multi-county watershed districts is the total amount certified to all counties.
 ** A majority of the revenue in 2011 will be collected through a storm water utility fee rather than levy.
 ***The tax area of Valley Branch will be larger in 2011 than in 2010, therefore no tax increases are forecasted.
 **** All revenue comes from communities pursuant to the joint powers agreement.

Appendix of Accomplishments

Section I

EMWREP

- The MN DNR coordinated with EMWREP and local partners on four workshops for elected officials focusing on water quality issues in the St. Croix Valley. Between 60 - 100 people were in attendance at each event (2008, 2009).
- The MS4 Toolkit - www.cleanwatermn.org/MS4toolkit - includes one page dedicated to resources for groundwater and drinking water education (2009).
- At nine Blue Thumb workshops (Forest Lake, Stillwater, Lake Elmo, Lake St. Croix Beach, Denmark Twp and Cottage Grove), residents were encourage to use native plants, raingardens and shoreline plantings to reduce stormwater runoff and increase groundwater recharge (2009).
- Articles published in newspapers addressed connection between groundwater and surface water resources (2009).

WCPHE received funding from a BWSR Challenge Grant to seal two exploratory oil wells, one of which went into the Mt. Simon Aquifer. Coordination with MDH, MPCA, and MGS for geophysics and water analysis was conducted prior to sealing the wells (2008).

Treated water from the clean-up of the Baytown/West Lakeland TCE contamination area is infiltrated below ground and used in the summer to irrigate ball fields in Lake Elmo (2008).

MC worked with the USGS, DNR, and MPCA to conduct a synoptic water level study to evaluate changes in the three major metro aquifers since the mid-1990s. The USGS published a report of the results (2009):

<http://mn.water.usgs.gov/projects/description/8607D5Y.html>

Section II

2.1.1.1.

- Comfort Lake Forest Lake WD is using data from groundwater/surface water interaction studies to develop rules that establish criteria for projects in contributing areas to groundwater dependent natural resources to minimize detrimental impacts (2009).
- The MC and USGS completed a raingarden study to assess quality of infiltration (2009).
- Comfort Lake Forest Lake WD is using data from groundwater/surface water interaction studies to develop draft rules to determine appropriate minimum floor elevations (buildings) and the location of infiltration BMPs (2009).
- Brown's Creek WD, WCD and MPCA completed a draft Brown's Creek Biota TMDL and currently undergoing official review. Groundwater quantity and quality were determined, as were their impacts to the quality of Brown's Creek (2009).
- Brown's Creek WD, WCPHE and others developed a GWDNR Comprehensive Management Plan for a fen in Grant. The methodology will be utilized to cost-effectively duplicate the work for other GWDNRs in the future (2009).
- Rice Creek WD utilized a surficial groundwater study and assessment which is designed to gain a better understanding of the surficial groundwater system and groundwater dependent natural resources (2009).

2.3.2.2.

- The WCD, WD/WMOs, LGUs, and WCPHE provided education regarding how land use change impacts surface water and groundwater. Tools to mitigate these impacts were provided along with technical support during the comprehensive plan update process (2009).

3.2.1.1

- MDA, and the U of M, updated regional nitrogen BMPs and met individually with local agricultural retailers stressing the importance of following established nitrogen BMPs (2009).

4.1.1.1

- The Washington County SSTS Ordinance, Development Code Chapter Four, was revised and adopted to reflect applicable changes in Minnesota Rules Chapter 7080 (2009).

4.1.3.1

- WCPHE monitored and provided input for changes to Minnesota Rules Chapter 7080 (2009).

4.2.1.1

- The proposed County SSTS Ordinance has been revised to require a compliance inspection at the time of property sale. The new ordinance was adopted in 2009.

- WCPHE participated in the rule making process and tracked changes in the legislature affecting the revision of Minnesota Rules chapter 7080 - 7083. (2009)
- WCPHE adopted the revised version of Minnesota Rules Chapter 7080 - 7083 (2009).

5.1.1.1

- Stillwater has completed Part II of their Wellhead Protection Plan (2010).

6.1.1.1

- Rice Creek WD utilized a surficial groundwater study and assessment to gain a better understanding of the surficial groundwater system and groundwater dependent natural resources (2010).

6.3.3.1

- Brown's Creek WD developed and implemented a Stormwater Audit Pilot Program with the Washington Conservation District and Middle St. Croix Watershed Management Organization. The goal was site specific education for landowners regarding water resource issues, including groundwater conservation (2009).

7.1.1.2

- Rice Creek WD utilized a surficial groundwater study and assessment to gain a better understanding of the surficial groundwater system and groundwater dependent natural resources (2009).

7.1.1.1

- Rice Creek WD utilized a surficial groundwater study and assessment to gain a better understanding of the surficial groundwater system and groundwater dependent natural resources (2009).

7.2.2.1

- Brown's Creek WD, WCD and MPCA completed a draft Brown's Creek Biota TMDL currently undergoing official review. Groundwater quantity and quality were determined, as were their impacts to the quality of Brown's Creek (2009).

8.3.1.1

- WCPHE attended LGU meetings and offered technical support to incorporate groundwater protection and planning into the LGU comprehensive plans (2009).
- By December 31, 2008, all LGUs were required by the MC to update their local comprehensive plans. WCPHE encouraged LGUs to incorporate groundwater protection into the local planning process (2009).
- By December 31, 2008, WCPHE, WCLM, and WD/WMOs provided comments to LGUs on local comprehensive plans, as required by the MC (2009).