

# LOWER MINNESOTA RIVER WATERSHED DISTRICT NEWS

what you should know about your water resources

## MAC nearing completion on water-quality enhancement project

The Metropolitan Airports Commission (MAC) is almost done with a project to improve the quality of water draining from its lands into the Minnesota River. Mandated by the Lower Minnesota River and Minnehaha watershed districts, the \$40 million project has been funded by MAC passenger facility charges and revenue bonds, without any federal money. In conjunction with the construction of a new north-south runway, which will increase traffic capacity by 25 percent, MAC has built three new water-detention ponds, totaling 14 acres, and an associated system of storm sewers.

MAC project manager Bridget Rief suggests that new paved areas will increase impervious surface at the airport by almost 200 acres.



*Photos: 1) this spillway slows water falling into Minnesota River; 2) MnDOT pond at the airport (landscaping and turf have been added); 3) a whole lot of dirt being moved as new MAC pond is dug.*

Given this increase, it was necessary to build the new stormwater-detention ponds in a ravine area next to the Fort Snelling National Cemetery and Post Road. The first pond, in place since December 2001, handles runoff from the western airport area, including the new runway; the second pond, completed the same month in conjunction with MnDOT, handles drainage from Highway 494; and the third pond, to be complete in summer 2003, will drain the east side of the airport.

Each pond is built on a three-foot liner — like those employed in wastewater treatment ponds — of clay, geotextile membranes, and sand and gravel. Trees, shrubs, and native grasses will be planted around the ponds in order to cut down their allure to geese and other wildlife, which can endanger air transport.

Besides the ponds, a series of environmentally friendly storm sewers has been constructed.

Water from the three ponds converges in two new ten-foot-diameter tunnels under Highway 5, where an old concrete MnDOT flume had been. Given an elevation difference of 101 feet from the first pond to the river, MAC built three energy-dissipation structures, like staircases, to slow the flow of water through the system before its discharge into the river.

This decrease in energy, along with the increase in water purity, represents a major improvement in the water that reaches the Minnesota River.

Because the flow is slow, it doesn't erode the Minnesota River banks. Because the ponds filter out phosphorus and total suspended solids (TSS) before they can enter the river, the river has a chance of staying cleaner. ❖

## Look what's inside!



Chaska's clay hole lakes (2)



Eagle Creek water monitoring station (4)



Burnsville's Kraemer nature preserve (4)



Our new administrator, Terry Schwalbe (6)



## Chaska's clay hole lakes: from history to hydrology

Almost since its beginning, Chaska has been known as a brick city. The high-quality clay found there, formed by glacial deposits, was mined from about 1857 through the 1950s, and contributed much to the town's economy and esthetic. Even today you can see the soft, buff-colored brick in many local structures, not to mention Twin Cities monuments like the Lumber Exchange, Butler Square, and Wesbrook Hall at the U of M.

Once the brickyard clay was depleted, and



the tide of fashion turned against light-colored brick, the steep-sided pits, fed by springs and rain water, began to serve recreational and esthetic uses: swimming, fishing, walking around, and just plain tranquil gazing. (In fact, the pits would fill with water each winter, when the mines weren't active, and have to be pumped out in the spring.)

There are three good-sized clay hole lakes in Chaska today, which the District is helping monitor:

- Firemen's Lake, c. 9 acres, 20' deep max.
- Brickyard Lake, c.14 acres, 40' deep max.
- Courthouse Lake, c. 12 acres, 57' deep max.

Firemen's Lake, donated to the city by the brick-making and banking Klein family, has a well-used swimming beach; set in a park, the lake is the site of the Chaska Fire Department's annual ice-fishing contest. Both Brickyard Lake, site of the last brickyard in operation, and Courthouse Lake boast fishing docks; Courthouse sports a good supply of DNR-

*Photos: 4) One of Chaska's old brickyards, c. 1900; 5) Firemen's Lake, on a perfectly cool & ducky fall day; 6) Brickyard Lake, from the new bridge on Highway 41.*

stocked trout (rainbow, brook, brown, and lake).

Where once brick was, now water shall be. And it's pretty good, attractive water, according to city engineer Bill Monk and Carver County environmentalist Greg Aamodt. Monk cites the recent reworking of Highway 41, around Firemen's and Brickyard lakes, as proof of the city's positive vision: now, only clean high flows (without much sediment) are allowed to drain into the ponds, while more turbid low flow has been re-routed into storm sewers.

Aamodt speaks warmly of the lakes' clarity and their relatively low phosphorus and chlorophyll concentrations. In Firemen's, you can see down about 8-9 feet, he suggests; in Courthouse, about 11 feet; and in Brickyard maybe more. (These measurements compare with an average clarity of just 2.6-7.2 feet, according to the MPCA, for lakes in the North Central Hardwood Forest ecoregion.)

The District recently committed \$1,650 to Carver County for monitoring these three lakes. County staff, including Aamodt, monitor the lakes bi-weekly, from ice-out in the spring through October. They collect samples and have them analyzed, by the Metropolitan Council lab, for total nitrogen, total phosphorus, and chlorophyll. The staff then



create a lake page to inform the public and help set water quality goals. (You can get a copy of clay hole and other lake pages at [www.co.water.mn.us/water/](http://www.co.water.mn.us/water/).)

The city of Chaska is intent on keeping tabs on the hydrology in order to make sure the lakes stay healthy over the long term. Besides re-routing stormwater, the city protects the lakes by owning the land around Courthouse and Firemen's lakes ... and by zoning that allows relatively little residential use. (Though a few townhomes butt on Brickyard Lake, it remains well buffered from stormwater entry.)

Like other Chaska natives, Aamodt, the environmentalist, remembers growing up in a place of both bricks and natural beauty. In the 1980s, when he was a kid, old bricks remained between Firemen's and Brickyard lakes, and he used to fetch them in his wagon for tasks like building a patio.

What better way to haul the honored past into the beckoning future? ❖

### Take a load off ... the water you love

The federal Clean Water Act (CWA) of 1973 required that states furnish the Environmental Protection Agency every two years with a list of impaired lakes and streams, the 303(d) list. Impairment, which means that the waterbodies are not meeting their designated uses (such as swimming, fishing, drinking), is now quantitatively measured by an approach called Total Maximum Daily Loads, or TMDLs. This acronym is also used to refer to the process for assessing, cleaning up, and monitoring water quality.

In the case of the Lower Minnesota River, the Minnesota Pollution Control Agency (MPCA) initiated a TMDL to set environmental goals and recommend measures for improving water quality in 1985, when too much phosphorus in the water threatened fish populations. (This nutrient, contributed by artificial fertilizers and animal waste, causes algae to grow; when they die, bacteria which feed on them use up oxygen in the water.)

Besides phosphorus, various pollutants impair water quality in our rivers, streams, and lakes:

- sediment
- fecal coliform bacteria
- ammonia
- mercury
- nitrogen

By setting pollution reduction goals and initiating clean-up procedures, the MPCA and other organizations have significantly reduced pollution from wastewater-treatment plants and sediments from the Minnesota River Watershed. Recent studies have shown reductions of from 25% to 40% in oxygen demand, phosphorus, and Total Suspended Solids (TSS). (For more information, see <http://www.pca.state.mn.us/water/pubs/tmdl-303dlist-final-02.pdf>)

What is the MPCA up to now? For one thing, they continue to assess water quality and implement plans to improve it. For another, they will soon be actively soliciting citizen participation on water-quality teams, whose job it is to analyze pollution sources and recommend reduction methods. The agency is also very much interested, says hydrologist

Tim Larson, in educating us on what we can do to take a load off water pollution and keep our water clean:

- Don't throw grass clippings and leaves into the street and near drains;
- Don't wash your car with high-phosphate detergents or use phosphate fertilizers;
- Direct runoff water into the soil rather than a nearby storm drain; and
- If you live in a rural area, be sure to keep your septic system up to code so that waste does not discharge into nearby waterbodies. ❖

### What do you know about the Minnesota River Valley?

DNR survey elicits public perceptions & suggestions

In 2001 the state Department of Natural Resources (DNR) designed and administered a survey on how the public perceives the Minnesota River Valley — the area from LeSueur to the confluence of the Minnesota and Mississippi rivers — and what it would like to change in the way it is managed. (The District, along with groups like Friends of the Minnesota Valley and the DNR, helped fund the study.)

Some 1500 surveys were mailed out and just over half of them returned. Some patterns that emerged:

- Only about 5% of respondents claimed to “know a lot” about the area, while almost 25% had “never heard of the area before” and 39% “knew a few things.”
- Those with at least some familiarity with the area got

their information from family and friends, proximity to the area, state parks, road maps, and the media, including newspapers, radio, TV, and the DNR web site.

- Some 73% of respondent with some awareness of the area used it for outdoor recreation within the previous 12 months, mostly for activities like hiking, sight-seeing, observing and learning about nature, fishing, photography, picnicking, biking.

- Barriers to participation in area activities included, primarily, time, other opportunities, and lack of awareness of the area.

How did respondents perceive conditions and trends in the Minnesota River Valley area? “Scenic beauty” was rated the highest resource, just above “good.” Animal life and habitats were judged “fair” to “good,” while water quality was judged only “fair.” Recreational opportunities were considered “good,” while fishing and hunting were adjudged “fair” to “good.”

What did respondents think about future management of the area? Those at least somewhat familiar with the area were asked a series of agree-disagree questions. Most participants agreed that fish and wildlife habitat should be preserved and recreation and learning opportunities expanded. They wanted to achieve a “balance between resource preservation and recreation use,” according to the report. Most of those surveyed did not like the idea of promoting business uses of the area or motorized recreation.



(For a copy of the full report, in Adobe Acrobat format, email Tim Kelly at the DNR: [tim.kelly@dnr.state.mn.us](mailto:tim.kelly@dnr.state.mn.us).) ❖

## District teams up with Met Council to monitor water quality on Eagle Creek

Beginning in 1997, the state legislature authorized and funded water-quality monitoring of metro area creeks. In a project expected to last 10 years, the Metropolitan Council funds about 75% of monitoring services, at 26 stations, while entities like the District pay the remaining 25%.

In the case of a new station at Eagle Creek and the 125<sup>th</sup> St. Bridge, in Savage, the District is funding a quarter of the cost of purchasing, installing, and running the monitoring station, including laboratory analysis by the MPCA and engineering services by HDR Engineering. While the equipment and installation cost about \$20,000, the yearly operating budget runs almost \$15,000. Again, the District picks up 25% of these expenses, and has hired HDR Engineering to conduct water sampling from computer-controlled equipment in the station by the creek.

Regular water quality analyses, for both storm and dry-weather periods, will yield information on pH, conductivity, transparency, oxygen demand, and concentrations of chemicals like ammonia, nitrates and nitrogen, phosphorus, and chlorides.

Leigh Harrod, the Met Council's manager for the Watershed Outlet Monitoring Program (WOMP), says the project is important because a rare cold-water trout stream like Eagle Creek is already jeopardized. Steady monitoring can show signs of deterioration, like increased water flow, soil loading, or decreased temperature, which would stress the trout population further.

Herrod says it's not just the creek that must be monitored but development. The city of Savage is acting to make sure water quality has not deteriorated and quantity has not increased too much. One protective measure is its construction of nearby detention ponds to hold back rainwater from the stream.

The new water monitoring station on Eagle Creek contains a computerized water stage



sampler, says HDR Engineering's project manager, Jennifer Cheever. This sampler automatically triggers data collection once the stream reaches a certain depth during a "storm event." A pump collects water samples in bottles, every 15 minutes during a storm, and this water is sent to the MPCA lab for analysis. For baseline comparison, "grab samples" are also collected when there's no precipitation. ❖

## Burnsville opens Kraemer nature preserve

With financial aid from the District and other partners, the city of Burnsville has converted 93 acres of land that had once been mined for peat into the Rudy L. Kraemer Nature Preserve. Located at the end of Chowen Avenue, south of Highway 13, the preserve offers visitors a chance to take a boardwalk around prairie and restored wetlands and learn about the ecosystem.

Donated to the community by the quarry operator EKS (Edward Kraemer and Sons), these wetland and prairie acres enrich both human and natural environments. As Burnsville Director of Natural Resources Terry Schultz explains, the preserve:

- Helps maintain Minnesota River water quality;

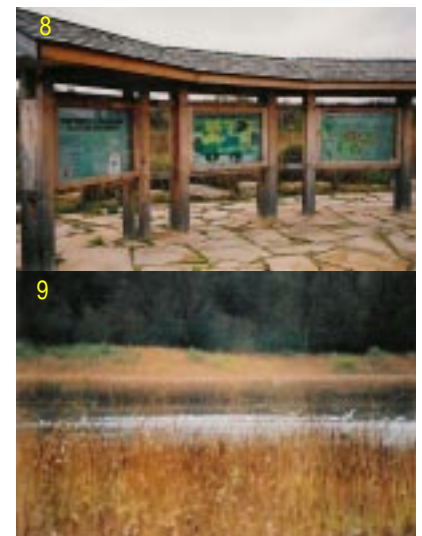
- Enhances natural plant communities through native species plantings;
- Provides educational kiosks, interpretive signs, and resting places;
- Connects to a city-wide trail network; and
- Serves as a buffer between high-density-residential and industrial-park land uses.

As part of its environmental master plan, Burnsville restored the preserve area in two phases: first, re-directing water flow back into the wetlands; second,

**Kraemer Nature Preserve**  
cont. on p. 5

*A plaque will be placed next spring in the nature preserve to honor District manager Merrill Madsen, who served Scott County and then Dakota County on the board for over 20 years and "worked with determination to improve water quality in the District."*

*Photos: 7) The water monitoring station on Eagle Creek; 8) Educational kiosk at Kraemer nature preserve in Burnsville; 9) a view of grassland and wetland at the nature preserve.*



## LOWER MINNESOTA RIVER

### What the Joint Powers Board is planning

Diane Ovrebo, Administrative Assistant, MRBJPB

The Minnesota River Basin Joint Powers Board (MRBJPB), a nonprofit group dedicated to preserving and restoring the Minnesota River, is currently working on two grant proposals:

*1. State proposal:* On behalf of the 13 Minnesota River Basin watersheds, we are putting together a Total Maximum Daily Load (TMDL) proposal requesting \$285,000 from the Minnesota Pollution Control Agency (MPCA), an amount we will match with \$30,000 in cash of our own, \$10,000 in cash from the Friends of the Minnesota Valley, and in-kind or donated services, ranging from clean-up labor to engineering expertise, from watershed districts, municipalities, counties, Friends of the Minnesota Valley, Coalition for a Cleaner Minnesota River, and ourselves. The goal of this grant is to reduce phosphorus from storm and wastewater runoff originating in communities in the Minnesota River Basin not subject to Phase II Storm Water Program requirements. (See the TMDL article on p. 3 for more information about this technology.)

*2. Federal proposal:* The federal government's Environmental Protection Agency (EPA) has allocated \$21 million in its 2003 budget for the Watershed Initiative program. The EPA will select up to 20 watersheds across the nation for grants to support innovative approaches to clean water. Our proposal will ask for over \$1 million of these dollars, which should fund a 2-3 year effort to create a program to reduce point (industrial) and non-point (all other) sources of phosphorus. Counties, cities, watersheds, citizens and agency partners in the Minnesota River Basin will all be involved. The Lower Minnesota River Watershed District has committed \$1,500 for writing of the grant by the Bonestroo engineering firm. We thank the District for this support and for their leadership, especially administrator Terry Schwalbe.

We also thank and applaud our other partners, without whose enthusiastic help we could not accomplish these projects.

In addition to these grant proposals, our work includes the convening of two task forces. The Organizational Task Force will review how our organization is run and will make suggestions on how to fine-tune it for maximum efficiency and effectiveness. The Legislative Task Force will focus on legislative initiatives for the next legislative session, educating legislators and advocating for the Minnesota River Basin.

If you want further information about the MRBJPB, please phone me at the office (952-361-6590) or go to our URL (<http://rbdc.mankato.msus.edu>).

❖

#### Nature preserve, continued from p. 4

building the stormwater ponds which filter water before it enters the river and leach out harmful nutrients like phosphorus. ❖

#### Schwalbe, continued from p. 6

plan and expanded the District to include Minneapolis-St. Paul International Airport. With the adoption of the plan, we brought Kevin Bigalke on board, in June 2000, as full-time administrator. In his two years with the District, Kevin did an outstanding job implementing our new plan and leading the District into the 21st century. When Kevin resigned to return to the DNR, I was happy for Kevin and sad for the District. I consulted with mentors, peers, and friends over how we would replace Kevin. They all said, "That sounds like just the job for you."

In short, I got the job and

now look forward to applying the skills I have acquired over the past twenty-two-plus years working in municipal movement and civic organizations to help build a strong and progressive District. If private and public agencies as well as nonprofit organizations can pool their resources, we can create some great projects that protect our environment and address the concerns of all constituents. ❖

### New Hennepin County manager

By Stephen B. Dalsin



Born in 1939, I was appointed the District's second Hennepin County manager earlier this

year. My youth in south Minneapolis was spent in activities with church, Boy Scouts, and Sea Scouts (now Explorers).

Chairman of the board of my family-owned sheet metal business, I am a 26-year resident of Bloomington. I am active in non-profit affairs, including leading two capital campaigns for church and school and serving as board chairman of Bridging, Inc., which provides free furniture and household items to people in transition.

I'm committed to preserving natural resources, particularly those near urban areas in danger of being lost to development, and take my stewardship role seriously. ❖

# WATERSHED DISTRICT NEWS

## Administrator's letter

By Terry Schwalbe

As the new administrator for the District, I'd like to tell you a bit about myself. I am the youngest of 8 children and grew up in what I proudly call Old Town Chaska. My early years were spent playing in the creeks and clay holes of Chaska. Like most of my friends, if I wanted a pop and bag of chips or some penny candy, I had to earn some money. I cut grass, shoveled snow, pumped gas, and worked on a farm. After graduating from Chaska High School, I was off to St. Cloud State for two quarters, which is about how long it took me to figure out I wasn't quite ready for college.



In 1972 I joined the United States Navy for a three-year hitch in which I saw Olongopo, Singapore, Subic Bay, Rota, Palma, Naples, Garmich, and a whole lot of other places. Upon completion of my military commitment, I studied at Hennepin Technical Center at Eden Prairie and received certification in landscape technology and maintenance. After two years in the landscaping and irrigation industry, I became a member of the Chaska Public Works

Department. While at Chaska I became the city's construction inspector and project coordinator. Chaska gave me the opportunity to continue my education, and in 1988 I received my certificate in public works administration from North Hennepin Technical College.

In 1994 I was offered and accepted the position of project coordinator for the City of Wayzata, Minnesota, where I was in charge of the engineering department, which designed and implemented the city's various public improvement projects. I was also responsible for Wayzata's water resources plan.

In 1996 I was appointed manager of the Lower Minnesota River Watershed District by the Carver County Board of Commissioners. When Jim Kephart retired as president in 1999, I was elected president. While I served on the board, we adopted the District's second-generation water management

Schwalbe, continued on p. 5

### Board of Managers

- Edward A. Schlapp: President, Treasurer, Hennepin County Manager
- Ron Kraemer: V.P., Dakota County Manager
- Lawrence E. Samstad: Secretary, Scott County Manager
- Stephen B. Dalsin: Assistant Treasurer, Hennepin County Manager
- Bruce D. Malkerson: Staff Attorney
- Terry L. Schwalbe: Administrator

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Monthly meetings, open to the public, are usually held beginning 7:00 P.M. on the third Wednesday of each month. Phone the number above for confirmation; then come to:  
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Greg Zeck ..... Editor, Designer



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