SUMMER TOUR

RICE CREEK WATERSHED DISTRICT

June 16, 2004, 8:30 a.m. to noon, with lunch to follow

The van will leave from the Rice Creek Watershed District Offices, 4325 Pheasant Ridge Drive NE, Suite 611, Blaine, MN.

Please RSVP to Theresa at 763-398-3070, ASAP

Thanks!

A Board Workshop will follow at 1:00 p.m. at the District Office conference room. The Board will meet to discuss the District's Rules relative to road projects. The Board will take no formal action at the workshop, but use this opportunity to merely discuss the issue as the whole Board.

AFFIDAVIT OF PUBLICATION

STATE OF MINNESOTA

COUNTY OF RAMSEY

Julie Robbins
Being duly sworn on oath, says: that she is, and during all times herein state has been, Clerk of Northwest Publications, Inc., Publisher of the newspaper known as the Saint Paul Pioneer Press, a newspaper of general circulation within the City of St. Paul and the County of Ramsey.

That the notice hereto attached was cut from the columns of said newspaper and was printed and published therein on the following date(s):

6th day of June, 2004
Newspaper Ref/ Ad Number # 15806

Julie Robbins

Subscribed and sworn to, before me this
9th day of June, 2004

Kay M. Ritchie

NOTARY PUBLIC

Washington County, Minnesota
My commission expires January 31, 2005

Public Notice of Summer Tour and Workshop Meeting of the RICE CREEK WATERSHED DISTRICT BOARD OF MANAGERS

June 16, 2004, 8:30 a.m.

PLEASE TAKE NOTICE that the Board of Managers has scheduled a summer tour for 8:30 a.m. June 16, 2004. The van will leave from the Rice Creek Watershed District Offices, 4325 Pheasant Ridge Drive NE, Suite 611, Blaine, MN, 763-398-3070. Interested parties can contact the District for more information about stops and approximate times. The Workshop will follow at 1:00 p.m. at the District Office conference room. The Board will meet to discuss the District's Rules relative to road projects. The Board will take no formal action at the workshop, but use this opportunity to merely discuss the issue as the whole Board. 763-398-3070

RICE CREEK WATERSHED DISTRICT SPRING TOUR 2004

June 16, 2004

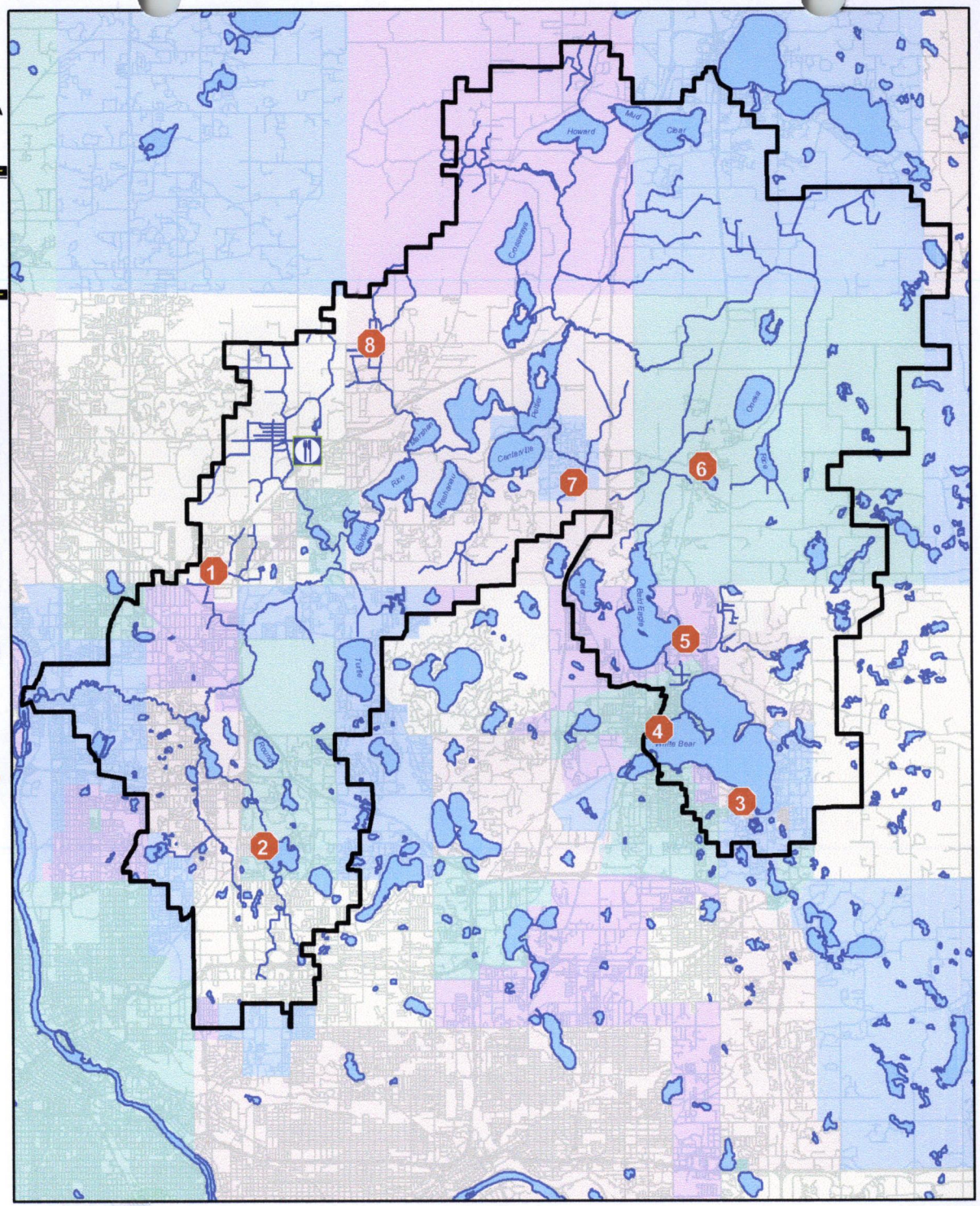
	SITE	EST. TIME
1.	Rice Creek Office	8:30 a.m.
2.	Anoka Ramsey JD1 (walk)	8:40
3.	Lake Johanna Restoration Project	9:10
4.	Karth Lake (Harvey shows us where old farmstead was)	9:30
5.	Birchwood Restoration Project	9:45
6.	JD1/Hwy. 61 Wetland Restoration Project	10:00
7.	Egg Lake/Hardwood Creek	10:25
8.	Anoka Ditch 47	11:00
9.	Wargo Nature Center to discuss Chain of Lakes	11:30
10.	10-22-32 CWMP (Drive by)	11:45
11.	Lunch at Green Mill in Blaine	12:00

Rice Creek Watershed District

Bus Trip - June 16, 2004

	District Office	8:30
1	Anoka/Ramsey Ditch JD1	8:40
2	Lake Johanna Restoration Project	9:10
3	Birchwood Restoration Project	9:45
4	Clark Street in White Bear Lake	10:10
5	JD1/Hwy. 61 Wetland Restoration Project	10:35
6	Egg Lake/Hardwood Creek	10:50
7	Anoka County Ditch 47	11:10
8	10-22-32 CWMP	11:45
	District Office - Lunch	12:00

RCWD

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RICE CREEK WATERSHED DISTRICT
Bus Trip - June 16, 2004
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2003 aerial photography. Elevations shown in feet, WGS84


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2003 aerial photography. Elevations shown in feet, WGS84

Water Quality Issues for Road Projects

-Targeted at Road Reconstruction

Background: Roads are typically highly impervious corridors that can be subject to high use. Roads share some basic issues as it relates to water quality:

- High level or runoff created - very impervious
- High levels of some pollutants
- Key publicly-owned corridors in a community.

Road corridors are also often designed to be the receiving point and conveyance corridor for local drainage - i.e., they are often the local circulatory system for drainage in a community. One can think of roads as the "capillaries and arteries" of the community drainage system.

I. What is the Problem?

A. Localized, Direct Impacts of Improved Roads
   1. Worse than existing conditions - standard curb & gutter designs are more efficient at delivering pollutants
   2. Time to correct "Past Sins" - address untreated roads, bring up to current standards

B. Opportunity for Adjacent Untreated Areas
   1. Untreated residential/commercial/industrial runoff - Roads, as the delivery system or "arteries," for untreated runoff/pollution
   2. **Opportunities** where there is a lack of treatment sites - publicly controlled corridors (Roads) is strategic and possibly most cost-effective places to treat untreated areas

II. How Should the RCWD Be Involved?

A. Road Designers operate with existing, traditional methods that tend to accelerate runoff & worsen pollution (curb-and-gutter) - lack access to good alternative designs

B. Rebuilding Roads are Difficult projects - juggling many issues (driveways, road standards, etc.) - therefore, it seems designers usually want to ignore runoff treatment issues to simplify the project - water quality is not addressed

C. Opportunity to not only stop water quality decline but actually improve water quality consistent with the RCWD Strategic Plan

III. What is a Reasonable Approach?

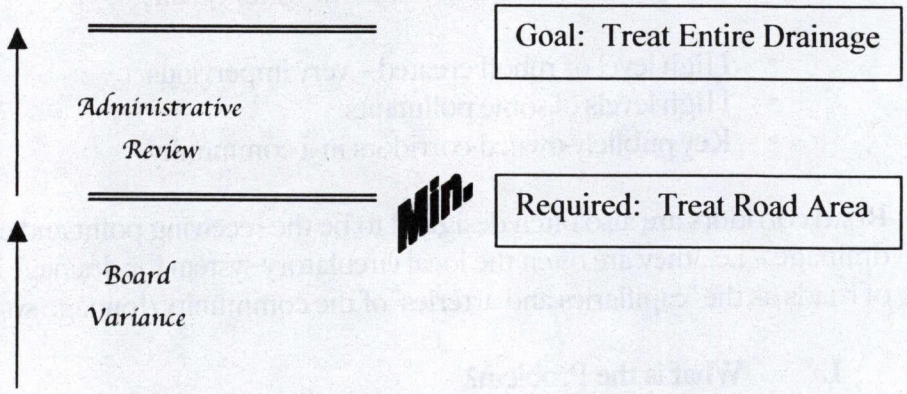
A. Set a minimum standard that treats the road construction (direct impact) fully - direct correlation to construction

B. Set a Goal that these Public Improvement projects will address deficiencies of treatment within the subwatershed
   1. Where physical locations are available
   2. Cost-effective place to do it
   3. Politically better than using larger, usable land

C. Provide Flexibility for difficult sites - Variance or Administrative Review

IV. How to Implement It?

Balance "common sense" flexibility to require what is reasonable with consistency and uniformity of applying the standard.



RCWD Workshop – June 6, 2004
Brett H. Emmons, P.E.

RULE C
STORM-WATER MANAGEMENT PLANS

1. POLICY. It is the policy of the Board of Managers to:

(a) Manage stormwater and snowmelt runoff on a regional or subwatershed basis and promote natural infiltration of runoff throughout the District to:

(1) Provide effective water quality treatment and where possible provide such treatment prior to discharge to surface waterbodies and wetlands.

(2) Ensure that future peak rates of runoff are less than or equal to existing rates.

(3) Maximize infiltration and control run-off volume increase.

(b) Require stormwater facilities to be constructed on individual sites where regional facilities are not available.

2. REGULATION. A permit and stormwater management plan is required under this rule for new development, redevelopment, or additions to an existing site.

3. DESIGN CRITERIA FOR STORMWATER MANAGEMENT PLANS. Stormwater management plans must comply with the following criteria:

(a) A hydrograph method based on sound hydrologic theory must be used to analyze stormwater runoff for the design or analysis of flows and water levels within and off the project site.

(b) Stormwater runoff rates for the proposed project must not exceed pre-project runoff rates for the critical one-year or two-year and 100-year frequency events.

(c) Regional detention basins will be utilized to manage peak flow rates and meet water quality objectives where possible. On-site detention basins will be utilized when regional basins are not in place or are not feasible.

(d) Analysis of flood levels, storage volumes, and flow rates for waterbodies and detention basins must be based on the range of rainfall and snow melt durations which produces the critical (highest) flood levels and discharges.

(e) Detention basins must be designed to provide:

(1) An outlet structure to control the one-year or two-year and 100-year frequency events to pre-project peak runoff rates.

(2) An identified overflow spillway sufficiently stabilized to convey flows greater than the 100-year critical storm event.

(3) Access for future maintenance.

(f) Permanent sedimentation and water quality ponds are required and must be designed to provide:

(1) Water quality features consistent with NURP criteria and District wet pond criteria (see appendix).

(2) A permanent wet pool with dead storage of at least equal to the runoff from a 2.5 rainfall over the area tributary to the pond.

(3) An outlet structure capable of preventing migration of floating debris and oils for at least the one-year storm.

(4) Access for future maintenance.

(g) The proposed project must not adversely affect water levels off the site during or after construction.

(h) Stormwater Management Plans under this rule must conform with approved Municipal Stormwater Management Plans.

(i) Outfall structures within wetlands and public waters and public waters wetlands must incorporate a stilling-basin, surge-basin, energy dissipater, placement of ungrouted natural rock riprap or other devices to minimize disturbance and erosion of natural shoreline and bed resulting from stormwater discharges.

(j) All new residential, commercial, industrial and other habitable or non-habitable structures must be constructed so that the lowest floor elevations are a minimum of two feet above the critical event 100-year high water elevation and are one foot above the overflow elevation of nearby surface waterbodies wetlands and stormwater basins.

Within landlocked basins, lowest floor elevations must be at least one foot above the surveyed basin overflow elevation.

(k) Development resulting in the creation of impervious surfaces must explicitly address use of best management practices (BMP's) to first limit the loss of pervious area; and second, to infiltrate runoff which does occur from impervious areas to the extent feasible considering site-specific conditions. BMP's include the use of vegetated swales, pond outlets perched above groundwater levels, use of infiltration systems, roof drainage to pervious areas, minimum of twenty percent pervious surface, use of depressed/casual storage areas, and minimization of the number and width of parking stalls and use of deep-rooted native vegetation, and narrower "rural section" roads.

The goal of these BMP's is to incorporate practices into the design which are capable of infiltrating the impervious surface runoff from the Mpls-St.Paul median storm (0.34 inches) in seventy-two hours. Infiltration volume will be calculated using the appropriate hydrologic soil group classification and saturated infiltration rate from the table below.

Hydrologic Soil Group	Infiltration Rate	Soil Textures
A	0.50 in/hr	sand, loamy sand, or sandy loam
B	0.25 in/hr	silt loam or loam
C	0.10 in/hr	sandy clay loam
D	0.03 in/hr	clay loam, silty clay loam, silty clay, or clay

Source: Urban Hydrology for Small Watersheds, SCS, June 1986.

Infiltration area will be limited to the horizontal areas subject to prolonged wetting.

Areas of permanent pools tend to lose infiltration capacity overtime and will not be accepted as an infiltration practice.

(l) Landlocked basins may be provided with outlets only if they:

(1) Retain a hydrologic regime which complies with District Wetland Alteration Rule F.

(2) Provide sufficient dead storage volume to retain back-to-back 100-year, twenty-four-hour rainfalls and runoff.

(3) Do not create adverse downstream flooding or water quality conditions as a result of increased discharge rate or volume, or other factors.

(m) All stormwater management structures and facilities must be properly maintained in perpetuity to assure that they continue to function as originally designed. This maintenance responsibility must be assumed either by the municipality's accepting the required easements dedicated to stormwater management purposes, or by the applicant executing and recording a maintenance agreement acceptable to the District.

4. REQUIRED EXHIBITS. The following exhibits must accompany the permit application. One set, full size; two sets, reduced to maximum size of 11"x17."

(a) Property lines and delineation of lands under ownership of the applicant.

(b) Delineation of the subwatershed contributing runoff from off-site, proposed and existing subwatersheds on-site, emergency overflows, and drainageways.

(c) Proposed and existing stormwater facilities' location, alignment and elevation.

(d) Delineation of existing on-site wetland, marshes, shoreland and/or floodplain areas.

(e) Identification of existing and proposed normal, and ordinary high and 100-year water elevations on-site.

(f) Identification of existing and proposed site contour elevations related to NGVD, 1929 datum.

(g) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet control structures.

(h) Stormwater runoff volume and rate analyses for the one and 100-year critical events, existing and proposed conditions.

(i) All hydrologic, water quality, and hydraulic computations completed to design the proposed stormwater management facilities.

(j) Narrative addressing incorporation of infiltration BMP's.

(k) Delineation of any ponding or flowage easements or other property interest dedicated to stormwater management purposes.

5. PLATTING OR EASEMENT DOCUMENTS. Applicant must provide platting or easement documents showing sufficient drainage and ponding/flowage easements over hydrologic features such as floodplains, storm sewers, ponds, ditches, swales, wetlands and waterways. Structures and facilities subject to flood damage built within the 100-year flood will have two feet of freeboard between the lowest floor and the 100-year flood profile.

6. EXCEPTIONS.

(a) Rule C and its requirements will not apply to development or redevelopment of individual sites less than 2.5 acres in size for industrial, commercial, and multi-unit residential, and less than five acres in size for single-family residential, unless such development or redevelopment:

(1) Is within the 100-year floodplain.

(2) Is within 1,000 feet of a public water or protected wetland.

(3) Is within 300 feet of Rice Creek, Clearwater Creek, Hardwood Creek, or of a public ditch.

(b) Rule C and its requirements will not apply to construction of a single-family detached dwelling on an isolated lot, unless such dwelling:

(1) Is within the 100-year floodplain.

(2) Is within 1,000 feet of a public water or protected wetland.

(3) Is within 300 feet of Rice Creek, Clearwater Creek, Hardwood Creek, or of a public ditch.

(c) Rule C and its requirements will not apply to construction on individual lots within a residential subdivision approved by the District, unless the activity does not comply with the original development plan or has been superseded by state law.

(d) The requirements of paragraph (f) of Section 3 will

be modified for redevelopment sites at which less than fifty-percent of the total site area (including any road right-of-way) will be disturbed, such that water quality ponding will be required only for the areas being disturbed.

(e) Subdivision of land which does not propose construction of impervious surfaces or structures will be exempt from the requirements of Section 3 and paragraphs (c), (g), (h), (i) of Section 4. However, a Rule C permit is required when such future development does occur.

(f) Rate control criteria discussed in Section 3 may be waived if the site discharges directly to a water body with large storage capacity (such as a public water) which has a time-to-peak elevation greater than that for an on-site pond and the volume discharged from the on-site pond is negligible, relative to the volume of runoff entering the water body.

(g) The requirements of paragraphs (e) and (f) of Section 3 may be waived for sites with total impervious area of less than one acre, if infiltration BMP's have been incorporated into the project to the maximum extent possible.

(h) The requirements of paragraph (j) of Section 3 may be waived for short-duration floods not associated with regulatory (FEMA-FIS) floodplain. Low floor elevations will not be allowed below the 100-year water level, and the two-foot freeboard requirement would apply to the minimum building opening elevation. Additionally, applicant must submit calculations demonstrating the duration of the flood event was sufficiently brief to prevent saturation of the soil at the low floor.

(i) In cases where structures are proposed below the runout elevation of land-locked basins, the low-floor elevation will be a minimum of two feet above the high water level as determined from an estimate of highwater levels determined from the highest of either the 100-year, ten-day runoff event or back-to-back 100-year, twenty-four-hour rainfalls. Aerial photos, vegetation, soils, and topography will be used to derive a "normal" water elevation for the basin for purposes of computing the 100-year elevation.