



Chapter 9 – Rochester’s Water Learning Activities

There are a number of local activities listed below that can help individuals, families, and groups learn more about water in Rochester. The activity ideas are grouped by Chapter topics. Some of them could form the basis of a service learning project.

Chapter 1 - Rochester’s Water Cycle

- **Cascade Meadow Wetlands & Environmental Science Center – Exhibits:**
 - Visit the indoor “Water Connections” and “All About Aquifer” exhibits.
 - Using the Zumbro Watershed floor map, trace the flow of water through the watershed.
- **Cascade Meadow Wetlands & Environmental Science Center – School Field Trip:**
 - “Watershed Stewards with Solutions” for elementary and secondary students (90-120 min.): Through several sequential activities, students will explore the Zumbro River Watershed, discover how its health is threatened, and encounter best practices and behaviors to protect the watershed.
- **Classroom Activity – Individual Action Demonstration:**
 - Help students visualize the impact their actions can have on the environment. At the beginning of class each day for at least a week, ask students to write down any dollar amount less than \$1 on a small piece of paper, which the teacher will collect (the longer the time period for this step, the bigger the impact will be). After the money collection phase, ask students if they would pay \$1 or less each day to have an environment with clean, safe water. Ask why or why not. After the discussion, take all the papers the students have turned in and add the amounts together. Now have the same discussion about paying for clean water with the total dollar amount and relate the total to the small actions of individuals. By itself, a small act such as sweeping up grass clipping and disposing of it properly does not seem like much. If the act is done (or not done) by everyone, however, it has a large impact.
- **Quarry Hill Nature Center – Karst Geology & Wild Caving:**
 - Over two days in the classroom students are introduced to: the basics of karst geology, common underground and above ground karst features, why karst is found in SE Minnesota, and why understanding karst geology is critical in protecting groundwater sources. During day-long trips, students visit a private, underground natural cave system to witness what karst geology looks like first hand. Contact Quarry Hill Nature Center for more information.



Chapter 2 - Rochester's Water History

- **History Center of Olmsted County:** Research more about water topics. Call (507) 282-9447
- **Water Travel Activity:** Trace a drop of water as it might have moved through Rochester's water history, water cycle, and watershed. Present your research in one of the following forms or create your own product: graphic novel, poem, video, poster, short skit, diorama, Glog, Prezi, or

Chapter 3 - Rochester's Natural Water Features

PowerPoint.

- **Cascade Meadow Wetlands & Environmental Science Center – Exhibits:**
 - Visit the Wetlands exhibits: "Cascade Meadow Wetlands Contour Map", "Wetland Mechanical Theater", and "Living with Wetlands".
 - Using the Zumbro Watershed floor map, try to find rivers and wetlands.
- **Cascade Meadow Wetlands & Environmental Science Center – School Field Trip:**
 - "Wetland Services" for elementary students (60-90 min.): After covering the three "ingredients" that define a wetland, students will explore what wetlands do for us through a series of hands-on activity tables. A more involved series of activities on wetland ingredients can extend this to 120 minutes.
 - See 7 of the 8 different wetland types found in Minnesota under restoration here.
- **DNR's Adopt – A – River Program** (for litter collection):
www.dnr.state.mn.us/adoptriver/index.html
- **Encourage Others:** Encourage neighbors, developers, and state and local governments to protect the function and value of wetlands in your watershed.
- **Federal Duck Stamps:** Purchase federal duck stamps from your local post office to support wetland acquisition.
- **MPCA's Citizens Stream Monitoring Program:** Check this map www.rochesterstormwater.com/docs/Citizens/CSMP%20Inventory_Rochester.pdf to see if there are unmonitored streams in Rochester that need turbidity levels monitored. Then contact the MPCA to register your site: <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/streams-and-rivers/citizen-stream-monitoring-program/index.html>.
- **Quarry Hill Nature Center:** Contact the staff to develop a service learning project using the Park's natural water features, such as:
 - Turbidity monitoring of Silver Creek or Quarry Hill Creek,
 - Macro-invertebrate sampling of Silver Creek or Quarry Hill Creek, or
 - Frog and toad calling surveys of the hillside wetland.
- **World Water Monitoring Challenge:** An international education and outreach program that builds public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies between March 22nd and December 31st. <http://www.worldwatermonitoringday.org/>.

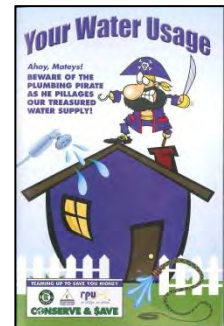
Chapter 4 - Rochester's Constructed Water Bodies

- MPCA's Citizens Lake Monitoring Program:** If you have access to a canoe, kayak or other type of boat, volunteer to monitor the clarity of one of Rochester's artificial lakes. Sign up at MPCA's web site: <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/lakes/citizen-lake-monitoring-program/index.html?menuid=>.
- Quarry Hill Nature Center:** Quarry Hill Park is home to several constructed water bodies: an educational/recreational pond, a wet storm water pond, an infiltration storm water basin, and an infiltration storm water basin. Contact the staff to develop a service learning project using the Park's constructed water features, such as:
 - Conducting wildlife research, like fish tagging, turtle trapping, or macro-invertebrate sampling, or
 - Establishing long term trends for chemical water data from any of the wet ponds.



Chapter 5 - Rochester's Water Supply

- Cascade Meadow Wetlands & Environmental Science Center – Exhibits:**
 - Visit the “Water Footprints” and “Wells & Wellheads” exhibits.
- Rochester Public Utilities Water Usage:** Obtain RPU's free brochure “Your Water Usage” and choose water conservation techniques that your family can adopt. Use the non-toxic dye tablet to check a toilet tank for leaks. Review the kid pages in the back for more ideas.



Chapter 6 - Rochester's Wastewater Treatment System

- Cascade Meadow Wetlands & Environmental Science Center – Exhibit:**
 - Visit the “Down the Drain” exhibit.
- Rochester Water Reclamation Plant:** Take a school field trip to learn how wastewater is treated in Rochester. Contact David Lane at 328-2656.



Chapter 7 - Rochester's Storm Water Management System

- **Cascade Meadow Wetlands & Environmental Science Center - Exhibits:**
 - Visit the indoor "From Streets to Waterways" exhibit and the outdoor "Storm Water Trail".
- **Quarry Hill Nature Center:** Volunteer to maintain their raingarden.
- **Rochester Public Works (contact Megan Moeller, 328-2440, mmoeller@rochestermn.gov):**
 - **Adopt-A-Storm Water Pond:** This program allows interested groups, businesses, and individuals to improve water quality by adopting a public storm water pond, agreeing to collect litter and watch for burrowing animals and broken structures; <http://www.rochesterstormwater.com/Full%20Text%20Packet.pdf>.
 - **Host a Raingarden Party:** Residential raingardens are designed to collect storm water from an owner's roof, sidewalk or driveway. You can help others learn about the value of raingardens by hosting a "Raingarden Party" at your home, either led by you or a trained volunteer host; www.rochesterstormwater.com/citizens/citizens_hostaraingardenparty.asp.
 - **Create a Residential Raingarden:** Rochester has a cost-share grant program to help homeowners install raingardens; http://www.rochesterstormwater.com/r_r_r.asp.
 - **Invite a Speaker:** Invite a City staff member to an upcoming neighborhood association, scout or service group, church or other meeting to learn how your neighborhood is connected to water and take home ideas for becoming better stewards of our watery resources! Topic areas for speaking opportunities include:
 - Solutions to Storm Water Pollution,
 - Proper Downspout, Sump, or Swimming Pool/Spa Discharge Practices,
 - Installing a Rain Barrel,
 - Planting a Raingarden or Native Plants,
 - Trees and Storm Water,
 - Water-Friendly Lawn Care, or
 - Residential Snow and Ice Management.
 - **Storm Drain Marking:** Help prevent illegal dumping by applying markers to storm drain inlets.
 - **Door Hanging:** place door hangers in your neighborhood to educate neighbors about clean water. Sample topics include pet waste and clean streets.
 - **Short-term or One-time Commitments:** Opportunities for single-time or short-term volunteer projects exist, such as native seed collecting, pocket cigarette butt receptacle distribution, handout preparation and more.
 - **Special Events:** Sign up at www.rochesterstormwater.com to receive emails about upcoming water-related events or look at the Upcoming Activities page.

Marking Storm Drains



Source: Deb Las



Rochester's Water in General

- **Cascade Meadow Wetlands & Environmental Science Center:** The center is open Thursday, Friday, and Saturday from 10 am to 4 pm. Check the website for special programs. There are opportunities for volunteering. Staff will help educators develop custom experiences, including support for inquiry and project-based water studies, such as
 - Invasive species monitoring and removal,
 - Biological survey and monitoring (insects, plants, mammals, birds, aquatic inverts),
 - Water sampling (physical, chemical, biological) from around the site in different settings (swamp, creek, lake, storm water pond, etc.),
 - Wetland ecological communities investigation and community interpretive media projects, or
 - Community outreach education projects on importance of wetlands (esp. flood control, ecological diversity).
- **Litter Collection:** Keep water clean by picking up litter at an adopted location, alone or with others. You can register for an adoptable area in each of the following programs by contacting them directly:
 - **MnDOT District 6, Adopt – A – Highway:** www.dot.state.mn.us/adopt/, 507-286-7509.
 - **Rochester Park and Recreation Department, Adopt – A – Park:** <http://www.rochestermn.gov/departments/park/activities/community/Adopt-a-Park.asp>, 507-328-2525.
 - **Help Make Rochester A Litter Bit Better!** (April): <http://rneighbors.org/litterbitbetter>.
- **Minnesota Marine Art Museum:** This museum is home to works by many well-known artists, all centered on the theme of water. <http://www.mmam.org/>
- **Quarry Hill Nature Center:**
 - Develop your own summer independent study program.
- **Rochester City Council:** Attend a City Council Meeting to find out how decisions affecting water are made. Check City Council agendas at www.rochestermn.gov.
- **Water Environment Federation:** Check out the multiple water activities: <http://www.wef.org/coloringbooks/>.
- **Zumbro Watershed Partnership Water Ways Speakers Series:** ZWP hosts a water-related presentation on the second Thursday of each month at the Cascade Meadow Wetlands & Environmental Science Center. Speakers include: researchers, government officials, farmers, and natural resource professionals who discuss a variety of topics important in our watershed.