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Meeting the Challenge: A Protection Message in a Restoration World

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ABSTRACT

Lake Superior remains one of the most pristine of the Great Lakes. However, because of the superiority of the environment, residents and visitors often seem unaware that they are impacting the quality of the water. The Regional Stormwater Protection Team (RSPT) was formed to identify methods for teaching an effective "Protection" message.

RSPT, formed in 2002 to address NPDES Phase II stormwater requirements, has 21 member organizations from both Minnesota and Wisconsin including regional cities, townships, and counties as well as universities, state agencies, local agencies, and the Fond du Lac Indian Reservation. RSPT is targeting a concept directed to individuals not already committed to environmental issues: *The link between the individual and the water*. Recognizing that awareness is the essential first step, RSPT elected to keep messages simple and emphasize the watershed concept. The approach contains two components: A general outreach identifying the link between residents and the water bodies and specific projects that involves individuals in protecting the water bodies.

Under general outreach the group employs brochures, collectable stream cards, mailers and a series of 30 second television spots and radio spots. A unique regional web site www.lakesuperiorstreams.org provides scientific and cultural information on regional streams. This year the RSPT hosted the first Watershed festival for the region.

RSPT developed a series of workshops on construction and post construction requirements. Individual member organizations shared innovative techniques used to address erosion and water retention requirements for the steep wet clay soil environment.

RSPT members organizations use specific activities to involve residents. Activities include a series of rain barrel and rain garden workshops, demonstrations gardens, and a sediment collection demonstration project. Results and activities are shared regionally. RSPT supports and promotes regional monitoring programs. RSPT is actively seeking methods of measuring effectiveness of the message in a protection environment.

INTRODUCTION – THE PROTECTION PROBLEM

Lake Superior remains one of the most pristine of the Great Lakes. Its headwaters provide outstanding outdoor experiences and amenities attracting both residents and tourists. However because of the "superiority" of the environment, users seem unaware that they are impacting the quality of the water. The Regional Stormwater Protection Team (RSPT) was formed to unify efforts to convey an effective "Protection" message.

At the Headwaters of the Great Lakes is a Northwood's region characterized by abundant water including numerous cold water trout streams. There are 42 named streams within the City of Duluth alone. On the Minnesota side, a steep escarpment rises some 600 feet in less than two miles. Above the escarpment the land is dotted with wetlands. On the Wisconsin side the land is flatter, but once again dotted with wetlands and streams. The soil of the region is shallow and clay based. Ancient basalt outcroppings are visible throughout the region. To the visitor, the land appears almost untouched. Residents remain in the region to enjoy the deep snows of cold winter with skiing and ice fishing and the opportunities to fish, hunt and hike throughout the year.

But, there are hidden problems. The St. Louis River is an Area of Concern as the result the early natural resource economies of the region including mining and forestry. Recent clean up has made the river once again fishable and visually attractive. Active restoration projects have returned the sturgeon to the river, However, signs are posted with warnings on sites where sediment contamination has limited the usability of the river. Both Brownfield and Superfund sites occur on the river, the remains of long abandoned factories. The region also faces threats from increasing development with resulting increasing sediment and nutrients. But the problems are mostly invisible. How do we convince the politicians, the public and the funding agencies that action is required?

FORMING A COOPERATIVE TEAM

In 2002, the University of Minnesota Duluth and the City of Duluth met to discuss up coming concerns with new Phase II National Pollution Discharge Elimination System (NPDES) Municipal Small Storm Sewer System (MS4) Stormwater Permit requirements. Out of that meeting came a planning workshop and the formation of a regional team to address outreach in order to comply with Permit requirements, consolidate efforts and produce a profession effective program directed at protecting existing environmental assets.

Twenty one communities and agencies came together to form the Regional Stormwater Protection Team (RSPT). Membership includes all region MS4 communities, the Universities, the reservation, and local agencies.

City of Duluth, MN	University of Minnesota Duluth
City of Hermantown, MN	*Minnesota Sea Grant*
City of Proctor, MN	*Natural Resources Research Institute*
City of Superior, WI	*Facilities Management*
Duluth Township	University of Wisconsin Superior
Midway Township	Non Point Education for Municipal Officials
Rice Lake Township	Wisconsin Department of Natural Resources
South St. Louis River Soil and Water Conservation District	Western Lake Superior Sanitary District
	Minnesota Department of Transportation
St Louis River Citizens Action Committee	Minnesota Pollution Control Agency
Fond du Lac Reservation	St. Louis County

COMPONENTS OF RSPT PROGAM

Once established RSPT moved rapidly to identify an appropriate name, establish a mission statement, determine direction and seek funding. The name Regional Stormwater Protection Team was selected both for the simple and positive acronym RSPT and for the central theme of "protection."

RSPT members identified a mission that reflected the regional approach:

> *To Provide coordinated educational messages and technical assistance in storm water pollution prevention to citizens and businesses.*

The twenty one- member organizations signed a memorandum of understanding to support the joint efforts and established a general format and schedule for meetings.

RSPT member organizations include townships with populations of less than 1000 up to the largest organization, the City of Duluth, with a population of 86,000. Because of location and size budget is challenge and success of the program depends largely on successful grant writing. One on-going challenge is convincing grant bodies that protection is worth funding not just one time. To date the RSPT team has received just over $100,000 in grant funding through Minnesota's Lake Superior Coastal Program.

The RSPT board is composed of busy people, with diverse talents and knowledge. The board has engineers, scientists, city managers, project managers, agency representatives, and elected officials. From the beginning the group has recognized that time is a premium, so meeting are short and much of the work is done by very small committees. RSPT is committed to producing high quality products as efficiently as possible.

IDENTIFYING THE MESSAGE

RSPT first met in workshop format to brainstorm a direction for the regional outreach. Out of the brainstorming process came a list of 22 messages that members felt were important to the region. From the list one message was universally supported – *the need to link individual activities to water quality*. Members also recognized that the region is in a protection mode and faces a difficult challenge to change behaviors where there is no apparent problem. RSPT elected to stress the watershed concept as the linkage between communities in designing the outreach program.

Outreach approach:

- Major goal is Protection
- Messages are:
  - Watershed
  - Individual responsibility
  - Understanding of link with the water
- People are an important component of the equation

RSPT identified a two layered approach for its message. The broad organization would design a outreach campaign for the media and the message would be reinforced on a local level with specific hands-on public involvement projects. Local organizations share the project results and methods with other RSPT members.

LOGO DEVELOPMENT

A logo was developed for the organization through a competition for art students at the local universities. The winning logo is a simple multicolored design that reflects the layers of earth and water. The release of the logo and announcements of the formation of the organization were widely publicized as a first step in increasing public awareness.

MEDIA CAMPAIGN

The message committee of the RSPT identified 3 primary messages to be conveyed in the outreach campaign.

1. Residents live in a watershed. All regional watersheds ultimately flow to Lake Superior.
2. The identified regional stormwater issues include: sediment (and attached nutrients), water volumes and water velocity.
3. What individuals can do to protect the environment.

All messages begin with "Another watershed moment brought to you by the Regional Stormwater Protection Team" and ending with "It all comes down to your water."

For the media campaign RSPT has developed three 30 second animated television spots featuring identifiable animated characters. The natural beauty of the region is used as background in numerous media presentations and RSPT members felt the animation would be more likely to attract audience attention. Voiceovers from the advertisements are used for radio advertising. Spring advertising targets sediment problems while fall messages target leaf and yard waste. The public messages can be found at www.lakesuperiorstreams.org .

To encourage recognition other printed materials including brochures and mailers prepared by RSPT utilize the animated characters. For events a series of tattoos were produced to attract children. On a more hands on basis, Rex, the spokesman dog, makes appearances at events and hands out "doggy bags" to members of the public. Regional communities have adopted the animated characters to use in local stormwater related messages.

GROUP EVENTS

The outreach campaign also includes more targeted events.

Watershed Festival

This summer, RSPT held its first watershed festival. The event targeted families and was designed to reach a more general audience than most regional environmental events. The organizers encouraged local vendors that offer products such as mulching lawn mowers, 'pooper scoopers', pervious building materials, and native plants to participate. An exit survey indicated that 45% of those in attendance had never attended an environmental event prior to this event. To attract families, the event featured a nationally known environmental performer. The performer was brought in two days before the event and gave five additional performances in local schools.

RSPT members also participate in other fairs and the regional home show. RSPT utilizes gifts such as tattoos, drawings for environmental products and information sheets to involve visitors in stormwater issues. A book of regional watersheds is provided as a resource to assists attendees in identifying their watersheds.

Workshops

RSPT has organized a series of workshops for the construction industry that provide information on construction permitting requirements and the cost and effectiveness of water quality friendly alternatives. These workshops, for the first time, are bringing together the regional communities in a consolidated effort to reach the construction industry. One observed effect of these workshops has been an increased informal communication between communities. Through the South St. Louis SWCD a series of luncheon meeting providing information on innovative construction techniques have been organized. The meetings have strong regional support and are providing a networking tool for the construction industry and community engineers and planning officials.

Website

RSPT also recognizes the importance of the internet as a communication tool. The organization is supporting the web site www.lakesuperiorstreams.org as a tool for providing in depth information on regional water quality issues. The web site provides real time monitoring information from five regional streams and data and links for monitoring activities on other streams and the St. Louis River. Using innovative visualization and animation techniques the site allows users the opportunity to graphically observe variations in water quality, seasonally, or following rain events, and to compare the data to other streams at the same time or to the same stream at other seasons or years. Data can be color mapped or plotted at time scales from 12 hours to 60 day to explore different phenomena. Data is available in formats that can be downloaded for students and teachers to view on-line or download into slideshows, including GIS maps.

The site allows users to review NPDES permit information or to learn about environmentally friendly construction and home practices. The site features the streams of the region with attractive photographs, information about trails and how the watersheds stretch beyond municipal boundaries. An *Understanding* section includes primers on stream ecology, water quality parameters and impacts, aquatic organisms, and other related topics. Since 2002, the website has "grown" from the City of Duluth to

include adjacent MS4 townships and communities and Superior, WI, and now the north shore of Lake Superior to Canada, including data from two north shore streams. The website has been closely integrated with other regional extension and education watershed projects including Project Northland NEMO the St. Louis RiverWatch (http://lakesuperiorstreams.org/citizen/riverwatch.html), and Sea Grant's View from the Lake (http://www.seagrant.umn.edu/seiche/2004/09/gaining_a_superior_perspective.html**).**

Through the website, RSPT hopes to consolidate information on regional permitting and highlight effective stormwater management techniques. The site is designed to be a tool for the general public, the education community and the construction and development industry. Effectiveness is being evaluated through both feedback to the site, **targeted surveys** and the number of hits on the site. **(~200,000 monthly)**. Essential to the success of the website is promoting the site address on all publications and information from regional member organizations. In addition, members seek opportunities to place information on the site on other water quality networks. organizations.

MEMBER OUTREACH

The second component of the outreach program is targeted member activities. Depending on size the member organizations are expanding on the program through activities. The smallest member organizations are limited in the level of outreach, but have teamed with larger members to seek funding and perform activities. A school in one of the townships is now home to a rain garden constructed through the combined efforts of the township, the students, residents and the South St. Louis SWCD. The challenge for these hands on projects in small communities is a combination of seeking out expertise and finding funding. RSPT provides links to bring together groups.

Hands-On Workshops

The City of Superior exhibits a unique expertise in hands-on workshops. A small grant to do a rain barrel workshop has expanded into a broad regional effort. Superior has presented xxx workshops throughout the area. City staff has demonstrated at fairs, exhibitions, the Watershed Festival and for individual organizations, to date they have distributed over ------ rain barrels. Attendees at their events can make their own rain barrel and are provided with all the parts to assemble the finished product for a cost of materials fee of $38. Each demonstration provides an opportunity to insert a protection message for the region.

As with many activities, the rain barrel workshops have launched other activities. Duluth has held a drawing for a rain barrel at the regional home show for the past three years. At the first event, less than 300 people entered the drawing. This spring over 700 entered the drawing and over 100 instruction sheets for making rain barrels were distributed. The Minnesota Pollution Control Agency received grant funding to initiate a rain barrel for burn barrel exchange that has proved extremely popular with the general public while providing hands-on message on both air pollution and water quality.

Rain Garden Demonstration Projects

The City of Superior has developed workshops on rain gardens. The Superior Waste Treatment facility is now surrounded by attractive gardens of native plants that filter rain water from the impervious surfaces of the facility. University of Minnesota Duluth has just completed construction of a large rain garden to treat rain water off several parking lots. The completed project will have educational signage to explain its effectiveness.

The South St. Louis SWCD is working with local schools and the small townships to establish rain gardens. These projects require extensive volunteer help and have strong community support. Students, the township and residents all put in time to complete the project.

Public Involvement Activities

Activities such as the rain barrel program and the rain gardens are being well received in the garden oriented population, however a significant component of the local population is not touched by these activities and this group remains a challenge for outreach.

Duluth in partnership with the South St Louis SWCD is currently involved in a sediment removal demonstration program funded by the Great Lakes …….... Because of heavy winter snows, significant sand is applied to local streets. The traditional spring paradigm is to rake the material back to the street. Consequently much of the material ends up in regional creeks and ultimately Lake Superior.

The project has targeted neighborhoods to assist in cleanup of the sand. The targeted neighborhoods were sent letters and a team of young people from the Minnesota Conservation Corps visited the residents to enlist their support and link their activities to the local creek. Over 48% of the neighbors agreed to participate. Neighbors were provided with buckets to gather the material. In one neighborhood, door to door collection occurred. In the other neighborhood a dump site was established and neighbors were encourage to take materials to the site. From approximately ------- homes participating ----- cubic yards of material was collected. As the result of a press release on the activity, Duluth received calls from neighborhoods all over the City from residents wanting to collect and dispose of sediment. Four additional collect sites were set up. City official were convinced that this program was worth continuing city wide.

This fall, a second phase of the project started enlisting resident assistance to adopt and maintaining catch basins during fall leaf dropping. To measure the effectiveness of commitment, as part of the activity the project will target one of the neighborhoods involved in spring sand collection.

Storm Drain Stenciling And Stamps

Regional members are now using storm drain concrete stamps on new road construction. A local metal shop developed a pattern that can be used in any regional community Despite engineering concerns that contractors would reject or charge for having to use the stamps the stamping projects have been well received. Contractors request the stamps

and take considerable pride in their appearance. The stamp serve as a good prompt for appropriate road erosion control practices during construction.

Member organizations also work with schools to place decals on storm drains in the region of the schools. In all activities with children, brief presentations are given prior to activities. City of Duluth has found the use of aerial photographs of the school and neighborhoods helpful in getting children and adults to better understand the links between their activities and Lake Superior. Power point presentations overlaying streams and storm drain systems on aerials are extremely effective in tracing the link between catch basins and the lake.

Collectable Stream Cards

In support of the approach of increasing awareness, the City of Duluth is producing a series of collectable cards on the streams within the City limits. These cards are packaged in sets of ten. Each card has pictures of a stream, a map and feature factoids about stream communities. The cards have proved extremely popular not only with the target grade school audience, but with adults and former residents of the region. This year the Duluth Library utilized the cards as rewards for summer reading. Sets of cards are only provided to groups that listen to programs about the streams and thus provide an opportunity to get the message across.

WHAT WORKS? WHAT HAVE WE LEARNED?

Outreach is most effective where the audience can be brought in to the process. The popularity of the Duluth Stream Cards, the high participation rate in the sediment demonstration project and the on going success of the rain barrel workshop demonstrate the buy-in for activities where actual involvement, reward items and visual change occur.

Children are a wonderful tool for reaching adults. Classroom visits, field demonstration and one-on-one discussion with children are effective in spreading the message to their parents. A coloring contest for the watershed festival brought ?? families to the event to submit their child's entry. Protection messages accompanied by small souvenirs that children take home encourage family involvement. Duluth staff has received several verbal accounts of families who have begun visiting streams as a group activity using the stream cards as a guide.

The formation of a regional team has significantly increased networking across regional agencies. Following each RSPT meeting, members remain and engage in conversations about other concerns. The e-mail list and mailing lists are now links for inter-governmental communications about activities. The communities are beginning to better utilize the resources of the University System for valid scientific and research support.

A simple non aggressive positive message is better received. RSPT has worked hard to maintain a people oriented approach to the water quality message. To date this approach has made the group acceptable to a public that is often suspicious of the "green" organizations.

The low key message of linking human behavior to the water is effective and not offensive. Increased number of calls reporting stream concerns and invitation to speak at local business and non-profit organizations support the effectiveness of this method.

WHAT ARE THE PROBLEMS? WHAT DOES NOT WORK?

Funding for protection is a problem. There is no concrete result to show for the efforts with protection as a goal. Thus these projects are less appealing to funding sources as visible, identifiable results are not also available. Although over time it has been repeatedly demonstrated that protection is a cheaper focus than restoration, the visible results of restoration often receive priority in funding. In addition, protection is on-going and funding agencies are often unwilling to support on-going efforts. Thus each grant cycle requires creative changes to get funding even when the already operative process is working. It is not unusual for the population to question why funds are being put toward water quality issues where there appears to be no problem. For small communities, the burden of justifying a funding budget to the politicians and the public is an on-going challenge.

Designing appropriate evaluation tools is also a challenge. The effectiveness of an awareness campaign is hard to measure. Smaller projects that involve individual activity can easily be evaluated, but project that maintain or improve a high quality system cannot be evaluated in the short term. In addition there are few tools and little knowledge of how to effectively evaluate a protection message.

Protection in almost all its forms is a low priority. Funds, staffing and equipment allocation for protection are almost always on the budget bubble. Only mandatory permit requirements or agency mission ensure that funding for these activities remain in the budget.

Without visible issues, convincing residents that there is a problem remains a challenge. It is had for residents to imagine what they do can have an effective if there is no visible consequence.

Demands on staff almost always conflict with needed efforts. In small communities with limited resources, finding time to do the job well is an on-going challenge. Keeping up the energy of our membership is one of the most frightening long term considerations.

CONCLUSION

Meeting the challenge of protection of high quality resources is a challenge faced by many of the smaller urban areas brought in to the Phase II NPDES stormwater permitting program. By consolidating efforts and sharing outreach a more professional stronger program can be developed. The program must combine messages with hands-on activities on a community level to encourage involvement. Essential to the success of the outreach program is increased awareness by residents and visitors alike, that their

individual activities can and do impact the environment. The effectiveness of this effort is difficult to measure and can only be effectively measured in the priority that the public and political forces direct toward water quality protection in both individual practices and decision making.