

Tri Community Watershed Initiative: Towns of Black Diamond, Turner Valley and Okotoks, Alberta, Canada Promoting Sustainable Behaviour in Watersheds and Communities

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***Abstract**—For the past two years, three rural municipalities in the foothills of the Canadian Rockies have been working together to promote sustainability in their communities. The towns share the belief that water is an integral part of the community; they have formed a Tri Community Watershed Initiative to help manage their shared resource. Activities of the Initiative include changing municipal policies, writing municipal water, and river valley management plans, working with partners, hosting community events and engaging local media in community success stories. The towns are also assisting residents in outdoor water conservation efforts. To date, 100 percent of the households – more than 15,000 residents in approximately 6,000 households – have participated in community-wide water conservation campaigns that protect the local watershed.*

The Initiative has improved local policy and decision-making through a collaborative, multi-stakeholder approach that delivers ecological monitoring science in a manner that improves knowledge in the decision-making process. Involvement of town councilors in this ecological monitoring initiative has allowed local decision makers to gain awareness and knowledge that has led to action on community environmental watershed issues and increased community capacity.

Decisions made at local and landscape scales have a direct impact on sustainability. This Initiative has succeeded in ensuring that choices are informed and reflect the collective values of the community. By identifying values and defining sustainability, the communities have been empowered to monitor progress and feed into adaptive decision-making processes. The framework and best practices the towns have developed for engaging communities will be discussed as well as lessons learned.

Introduction

Since 2002, the Towns of Black Diamond, Turner Valley and Okotoks have been working together to engage residents of the Sheep River Valley in personal action toward the preservation and protection of their watershed. Through identification of common issues, the municipalities have developed a Tri Community Watershed Initiative to help promote more sustainable use of local water resources. Initiative elements include implementation of water conservation strategies, introduction of water practice policies, community engagement opportunities, working with partners and developing public information and education materials. Establishing normative behaviours that focus on voluntary adoption of best management practices through development of cooperative models and more informed

decision-making, the initiative has proven to be effective in changing municipal water policies and influencing water use behaviour in the communities.

The Tri Community Watershed Initiative is helping the towns to engage the residents of the Sheep River Valley in personal action toward sustainability and greater ecological health. An important initiative component is the implementation of community-based social marketing (CBSM) campaigns, which have proven to be an effective method in influencing residential behaviour in the communities. Since 1999, the Town of Okotoks has successfully used CBSM as part of its water conservation initiative, resulting in a 20 percent reduction in residential water use during the summer months. The Towns of Black Diamond and Turner Valley recently adopted a CBSM approach to address water conservation issues and experienced overwhelming support from residents for the program.

Water as a Bridge Between Communities

The Towns of Black Diamond (population 1,900), Turner Valley (population 1,500) and Okotoks (population 12,000) face a variety of challenges as a result of influences of local growth, urban sprawl, forestry, oil and gas exploration, tourism and recreation, intensive livestock operations and traditional agricultural practices. Local town councils must respond to increasing demands for policy to balance social, economic, and environmental issues. Residents share concerns about their own awareness and knowledge, which they feel contribute to the success of their community. The towns are situated within a 20-km radius of one another and are located near Calgary, Alberta, Canada. Identified issues of common concern are linked to watershed management and the municipalities share the belief that water is an integral part of the community.

In March 2002, the towns supported a proposal to participate in the Canadian Community Monitoring Network (CCMN), a one-year pilot initiative of Environment Canada and the Canadian Nature Federation to link monitoring to decision-making. The project aimed to determine the best approaches for engaging communities in monitoring activities that contribute to local sustainability. Under the CCMN project, 12 coordinators in 31 widely differing communities across Canada were hired to test and refine different approaches to implementing Community Based Monitoring (CBM). Each coordinator used a range of personally tailored, context-specific approaches accompanied by a suite of tools. The four key phases of the CCMN model for CBM developed through the project include community mapping, participation assessment, capacity building, and information gathering and delivery (EMAN CO and CNF 2004).

The Towns of Black Diamond, Turner Valley and Okotoks, as participating communities in the CCMN project, learned that progress toward a common vision of sustainability can be measured by environmental monitoring when it is driven by local information needs and community values. In addition, they found that local monitoring information can be integrated into adaptive decision-making structures where verification, investigation of cause, research into mechanisms or development of options can be initiated in response to early indications of environmental change.

As three southern east slope communities located along the Sheep River in the foothills of the Canadian Rocky Mountains, the towns have a history of almost 100 years of living and working within their watershed. These communities share concerns about use and

stewardship of their water resource and are acting together to reduce impacts. A common vision of engaging residents in the preservation and protection of the Sheep River has begun to emerge among local municipal councils. Local action is linked to community engagement and public information and education programs are helping to build community capacity on watershed issues.

The Sheep River is a natural free-flowing river, which has no in-stream or off-site water diversion facilities to store and protect municipal water supplies. Communities rely on natural flows and the wise and responsible use of water resources to provide for their needs. The towns believe in the importance of directing efforts towards the preservation and protection of their watershed and collectively seek to reduce their impacts on the water they use and return to the river. “We are all downstream water users” appropriately describes the relationship among these communities.

Currently the Sheep River is relatively healthy; however, threats from various urban uses have the potential to contribute to watershed deterioration. Water conservation and wise water use by all Sheep River watershed users is a significant issue. A 30 to 50 percent water saving can be achieved, for example, in households by using three low-flow devices (toilets, showerheads, tap aerators). Climatic conditions and lack of scientific data to determine healthy aquatic environments are ongoing water management concerns for the Towns of Black Diamond, Turner Valley and Okotoks. Members of these communities have expressed a need to “take action” towards urban water use and management issues and access additional expertise to provide opportunities to engage residents in stewardship programs.

Raising Awareness and Knowledge Through Community Action

Through the Tri Community Watershed Initiative, the Towns of Black Diamond, Turner Valley and Okotoks have built community linkages to support local citizen-led watershed efforts. To date, three annual tri-community river clean ups, involving more than 350 volunteers and 9 llamas, have gathered 7 tons of garbage—including everything from tractor tires to kitchen sinks. Decision-maker involvement includes town councilors, mayors, staff, and residents.

Additional community engagement opportunities help to further build capacity. More than 100 students from local Foothills Composite and Oilfields High Schools have conducted water quality monitoring tests on the Sheep

River with RiverWatch, an award-winning not-for-profit organization that links water monitoring activities to the Alberta Learning Curriculum. Students have participated in pre- and post-field work, in-class discussions, and data collection to measure physical, chemical, and biological river parameters. Town councilors and local media also participated, providing links to local decision-making and community engagement. In addition, RiverWatch Summer Science Water Camp activities have provided an opportunity for 25 children to float down the Sheep River in inner-tubes and learn about natural history, aquatic health and river safety while conducting water quality monitoring activities.

The towns also hold focus groups with residents to discuss water conservation issues and identify barriers and constraints. Meetings with neighbouring communities provide opportunities to discuss water-related issues including the hosting of a national panel discussion on water conservation with regional partners, Environment Canada, Canadian Nature Federations, Canadian Community Monitoring Network regional coordinators, and mayor, council, staff and residents. In addition, the towns have held a Facilitation Skills Workshop to train 25 residents, staff and decision-makers in local sustainability issue management.

In addition, the towns are assisting residents in outdoor water conservation efforts. Using a Community-Based Social Marketing strategy, the towns have created a two-way dialogue by visiting resident door-to-door, discussing water conservation issues and identifying barriers and constraints to wise water use. To date, 100 per cent of residential households (5,400 households, 15,000 residents) have received incentives such as fact sheets, hose washers, tap timers, and wildflower seed packages. The towns have reinforced their wise water use messages through utility bill inserts, direct mailers, highway signage, and newsletter and newspaper articles. The communities also share a common Horticultural Hotline in which Town of Okotoks' Open Spaces Staff answer more than 1,000 telephone calls per year from area residents on water related issues.

The Tri Community Watershed Initiative has been recognized with two APEX Awards of Communications Excellence and has been named as a Finalist in the Alberta Emerald Award Foundation for Environmental Excellence.

As a result of their involvement in the Tri Community Watershed Initiative, the three town councils have improved water efficiency policies by passing low-flow fixture bylaws (for new homes, businesses and renovations), water conservation bylaws, joint resolutions to work together, right-to-know pesticide bylaws, and line item budget funding for residential water conservation

programs. Participation of town councilors in grassroots ecological monitoring initiatives through such activities as River Clean-Up Day has allowed local decision makers to gain awareness and knowledge that has led to action on community environmental watershed issues and increased community capacity building.

Capacity Building—Remind, Reinforce and Reveal to Succeed

Through the joint efforts of the Towns of Black Diamond, Turner Valley and Okotoks, the Tri Community Watershed Initiative has:

1. Lead to action on local community river valley issues.
2. Engaged the communities in volunteer and residential watershed activities.
3. Encouraged active community participation in watershed policies.
4. Encouraged commitment of municipal councils to watershed management.
5. Enabled the communities to develop resources, expertise, and partnerships to raise community awareness, knowledge, and personal action.

The Tri Community Watershed Initiative has also generated substantial financial contributions to the three communities, including funding from EcoAction (\$100,000), Environment Canada/Canadian Nature Federation – CCMN Project (\$39,000), Community Animation Program (\$9,000), Community Initiatives Program (\$7,000), in-kind donations (\$10,000) and line item budgeting from the Towns of Turner Valley, Black Diamond, and Okotoks (\$32,000).

Public involvement within the Towns of Black Diamond, Turner Valley and Okotoks has been extensive, with more than 500 participants (3,000 volunteer hours) taking part in watershed activities. Demographics range from residents, students, councilors, town staff and environmental partners. Face-to-face meetings, presence, and visibility within the communities, and exchanging information have all been successful methods of sharing with our partners. Approximately 150 meetings have been held within the three communities to discuss water related issues, with more than 2,000 participants in attendance. Specifically, the Tri Community Watershed Initiative has provided the towns with:

- Personal contact with 5,400 households and 15,000 residents to discuss water conservation issues and identify barriers and constraints to wise water use, resulting in a 20 per cent reduction in summer residential

water use in the Town of Okotoks along (the Towns of Black Diamond and Turner Valley are currently reviewing summer residential water use statistics to determine reduction rates).

- Community capacity building with local schools, resulting in 100 local high school students and 25 elementary-aged students conducting water-monitoring activities. Six local teachers have been trained in RiverWatch monitoring protocols.
- Improved aquatic health of the Sheep River through river clean up activities, resulting in 350 volunteers and 9 llamas collecting 7 tons of garbage and ongoing annual efforts.
- Tools to link community watershed activities to inclusive decision-making, resulting in five new water-related bylaws and three town council resolutions.
- Twenty-five community members trained in facilitation skills.
- Increased media profile of tri community efforts, resulting in 25 newspaper articles, 10 radio interviews, 5 magazine articles and 3 television interviews.

Maintaining a Healthy, Free Flowing Ecosystem

The Towns of Black Diamond, Turner Valley and Okotoks have demonstrated leadership, responsibility, and cooperation in the Tri Community Watershed Initiative. Their collective efforts have improved the quality of life in their communities by providing opportunities to address local level policy processes and engage in local watershed activities, which reflect the desires of community residents and the legacy they will leave for future generations. Through their involvement in the Tri Community Watershed Initiative, the Towns of Black Diamond, Turner Valley and Okotoks are connecting residents to environmental issues and demonstrating innovation and excellence through the development of knowledge, practices, and processes that suit the watershed needs of the three communities.

Influencing Watershed Behaviours

The Towns of Black Diamond, Turner Valley and Okotoks have created strategic linkages within their communities and strengthened partnerships with such groups as *Calgary Regional Partnership*, *RiverWatch*, *Earthwatch*, *Cows & Fish*, *Highwood Business*

Development Corporation, *Headwaters Health Authority*, and *Canadian Cattlemen's Association*.

Most recently, the Tri Community Watershed Initiative formed a formal partnership with the Bow River Basin Council (BRBC) a non-profit, non-government, multi-stakeholder, charitable organization dedicated to conducting activities for the improvement and protection of the waters of the Bow River Basin. With a membership of more than 125 organizations, the BRBC maintains a forum for council members to share perspectives and exchange information, and encourages the implementation of cooperative water use management strategies through participation in activities that promote and demonstrate increased awareness of water use management issues.

The BRBC has identified support of the Tri Community Watershed Initiative as an important priority in its public information and education goals and objectives. The BRBC recognizes that by providing the opportunity for this initiative to more formally capture and share results among BRBC members, the council will enable a very powerful opportunity for other municipalities and groups to replicate similar successes. This multiplier effect will make a substantial contribution to the overall health and management of the Bow River Basin watershed, allowing more communities to learn from, and adapt and adopt, the innovative strategies and approaches developed through the Tri Community Watershed Initiative.

As partners, the Tri Community Watershed Initiative and BRBC have created a two-year project entitled *Influencing Watershed Behaviours* that aims to protect the Sheep River watershed by focusing on five main themes: integrated pest management, river valley management, water conservation, capacity building, and shared tools and resources. Specifically, the project will help:

- reduce residential water consumption by identifying constraints and enablers to indoor and outdoor water conservation practices
- reduce use, and create a better understanding, of residential pesticides by identifying constraints and enablers to improve residential integrated pest management (IPM) practices
- protect river valley lands by undertaking a river valley management planning process and hosting local watershed workshops, planning sessions, field trips and river clean-ups
- build capacity and share tools and resources among stakeholders in the BRBC and Calgary Regional Partnership by surveying members, identifying needs, producing generic resource materials and hosting information-sharing opportunities on water conservation and IPM issues.

The Influencing Watershed Behaviours project commenced April 2004 and to date a number of activities have been undertaken. This summer, the Town of Okotoks replaced approximately 200 residential water meters and provided free indoor water conservation kits as an incentive for residents to participate in wise water use, and an additional 500 homes received free outdoor water conservation kits. A Turner Valley neighbourhood hosted a xeriscape gardening information session, focus group and garden tour. The Okotoks Home Hardware store continues to provide in-store displays and discount coupons on water-efficient products. The Town of Okotoks was also recently chosen by the UN Year of Fresh Water for a Global television commercial on municipal water conservation to be aired over the next year. Local media coverage has assisted in promoting water conservation messages and the importance of protecting the aquatic health of the Sheep River. Future program components include a survey of BRBC members to identify common watershed concerns, a workshop to share project information, and development of generic Community Based Social Marketing resources materials on water conservation and integrated pest management, for use and replication among BRBC members.

Residents and stakeholders of the watershed are being made aware of the project through the use of door-to-door visits, focus group sessions, telephone surveys, fact sheets, posters, website information, demonstration sites, radio and television coverage, newspaper advertisements and articles, meetings and presentations. By increasing understanding, awareness, knowledge, and action towards a healthier Sheep River watershed, the project is establishing normative behaviours that focus on voluntary adoption of best management practices. The approach of the project is through a two-way dialogue between residents and municipal councils. Information sharing with external partners is also enabling residents and stakeholders to develop co-operative models for positive change and more informed decisions that collaborate on the strengths of those involved.

The environmental benefits will last long after the project is completed and will directly impact residents in the Towns of Black Diamond, Turner Valley and Okotoks as well as members of the Bow River Basin Council, Calgary Regional Partnership, and the Sheep River Water Users Group. Residents who are installing water-saving devices and adopting water conservation behaviours are contributing to a decrease in water consumption and better progress towards demand management of water while saving money. Residents who implement integrated pest management techniques will contribute to a decrease in pesticide use and possibly voluntary elimination of pesticides from their yards and gardens. Outcomes and

impacts will lead to important changes in the lives of community residents, as the project helps the towns address common municipal issues of residential water and pesticide use by using shared resources and a collective, co-operative joint-community approach.

The Towns of Black Diamond, Turner Valley, and Okotoks have demonstrated leadership, responsibility and co-operation in their joint sustainable community development efforts over the past two years. This project will further support their collective efforts to improve the quality of life in their residents and connect to environmental/health benefits by providing opportunities to address local level policy and decision making processes which reflect the desires of community residents and the legacy they will leave for future generations. The project will reduce peak flow demands on infrastructure, stretch the use of available water, provide consumer savings (i.e. low-flow fixtures), protect the aquatic environment, contribute to the sustainability of the environment and water as a vital natural resource, and help meet increased demands of economic and population growth to proper management of the resource and ensure adequate water quantity and protect water quality.

Quotable Quotes

Here's what people are saying about the Tri-Community Watershed Initiative:

"CCMN helps strengthen links between community-based environmental monitoring and decision making. We kind of have a corridor pilot project here in Alberta. It's a wonderful, unique opportunity. We're in close touch with each other so maybe we'll be able to do something that broadens the network of communities here (in southern Alberta). This is a national program so we have resources available to us that might not otherwise be available. Some of these opportunities would not exist without this program."

--Maureen Lynch, CCMN Project Coordinator for the towns of Black Diamond, Turner Valley and Okotoks on the formation of the Tri-Community Watershed Initiative (Source: Okotoks Western Wheel Newspaper – May 15, 2002)

"The clean-up is an opportunity to show respect for the green areas of town. Picking up litter and garbage in our river valley means that litter and garbage isn't going to continue down the valley. If we keep litter out of the river valley it will continue to look like a natural area. The regional aspect of the clean up is very important. We have to monitor the quality of water and ensure

that the entire river valley is clean and tidy. If we clean all that up we will feel better about the environment we live in.”

--Karen Brewka, Town of Okotoks Horticultural Specialist, on the importance of the First Ever Sheep River Clean Up Day (Source: Okotoks Western Wheel Newspaper - May 22, 2001)

“We finally get to go outside and do something instead of learning about it in a book. Everyone learns differently. Not everyone learns from books. The more you’re able to use your hands in things like this the more you remember.”

--Linnea Morris, Oilfields High School Biology 20 Student, participating in the CCMN/RiverWatch monitoring day on the Sheep River in Black Diamond, AB (Source: Okotoks Western Wheel Newspaper - May 29, 2002)

“The average Canadian adult spends six minutes a day outside...we really have sheltered ourselves. The students are here and they’re learning data but being outside is teaching them to become better people in the world too.”

--Jim Christie, Oilfields High School Biology Teacher, field trips like RiverWatch are an essential way for students to learn. (Source: Okotoks Western Wheel Newspaper – June 5, 2002)

“I think it’s a great thing for everyone to be learning, especially when you live in the area. It’s important for town council to support programs that involve our environment, youth, and everything that directly affects our drinking water.”

--Kristie Tucker, Black Diamond Town Councillor, on her participation with local Oilfields High School students in the CCMN/RiverWatch monitoring day (Source: Okotoks Western Wheel Newspaper – June 5, 2002)

“The kids are out there and it’s always the contact that make the biggest impression. That’s the first thing. The second thing is actually collecting the data and the third thing is having fun. This has been a complete success.”

--Stuart Peters, RiverWatch Project Coordinator, on the success of Oilfields High School Students’ participation in the CCMN/RiverWatch monitoring day (Source: Association of National Park Rangers RANGER Journal – Fall 2002)

“They’re (local residents) sophisticated in their understanding, and as politicians we need to

listen. They’ve been very effective in directing water quality decisions. I feel pretty optimistic about the progress we can make as communities sharing the same watershed. We’ve come a long way. We’re recognizing the impact we can have by working collectively.”

--Jane Toews, Black Diamond Councillor re local residents’ profound influence on environmental decision making (Source: Canadian Nature Federation NATURE CANADA Magazine – Spring 2003)

“The big success was the three towns worked together so well. Conversations and discussions overcome barriers. Each person and household will have their own unique circumstances.”

--Maureen Lynch, Regional Coordinator of local CCMN project on the awareness and dedication generated over the past year (Source: Okotoks Western Wheel Newspaper – June 18, 2003)

“Well done! Keep up the excellent work in engaging your communities in the governance of the Sheep River watershed. The community-based social marketing approach is proving to be very successful. These innovative and creative approaches are a very worthwhile means of achieving the health watershed that all three communities are striving for. Outreach and sharing is very important both within and among the three communities and out to others.”

--Teresa Chilkowich, Environment Canada EcoAction Coordinator (Source: Mountains as Water Towers Conference, November 2003)

“The towns (Black Diamond, Turner Valley & Okotoks) are committed to protecting and enhancing their shared watershed, and the proposed project will help the municipalities address common municipal issues of residential water use, using shared resources and a collective, co-operative joint-community approach.”

--Wayne Meikle, Chair, Healthy Okotoks Coalition (Source: letter dated January 27, 2004)

“This exciting project will assist in better policy decisions and increase stakeholder and residential awareness, support and participation in watershed initiatives. The towns of Black Diamond, Turner Valley and Okotoks have demonstrated leadership, responsibility and cooperation in sustainable community development over the past two years in their Tri Community Watershed Initiative efforts.”

--Mark Bennett, Executive Director, Bow River Basin Council (Source: letter dated February 1, 2004)

“Your project represents how municipalities can focus awareness and action towards the preservation, protection, and enhancement of their watershed for the benefit of all.”

--Jay Wieliczko, Senior Habitat Technician, Alberta Conservation Association (Source: letter dated February 1, 2004)

“This clean water project clearly demonstrates your organization’s commitment to protecting and preserving our environment, and I am pleased to have your organization help us in our efforts. You are to be commended for your initiative in taking action in support of a healthy environment.”

--David Anderson, P.C., M.P., Environment Minister re approval of funding from EcoAction for “Influencing Watershed Behaviours” project (Source: letter dated April 26, 2004)

“I am sure that your project will not only make a tangible contribution to the quality of the environment in your community, but also encourage others to do their part. Individual Canadians, and groups such as yours, can help shape our country’s environmental future.”

--A. Anne McLellan, P.C., M.P., Edmonton West re receiving funding from Environment Canada for project “Influencing Watershed Behaviours” (Source: letter dated May 10, 2004).

References

Ecological Monitoring and Assessment Network Coordinating Office (EMAN CO) and Canadian Nature Federation (CNF). 2003. Improving Local Decision-Making through Community Based Monitoring: Toward a Canadian Community Monitoring Network. ISBN 0-662-33894-4. 22 p.