THE WORLD IS WATCHING: BRITISH COLUMBIA COMMUNITY DRINKING SUPPLY WATERSHEDS - A STATE OF CRISIS

THE B.C. TAP WATER ALLIANCE RESPONDS TO THE MINISTRY OF ENVIRONMENT, LANDS, AND PARK'S REPORT FOR THE JULY WATERSHED 2000 CONFERENCE, SESSION 7

[The following critique was handed out to participants at the conference on the afternoon of July 10, 2000, Vancouver Hotel. The Ministry of Environment's report, *Source Water Protection for British Columbia's Community Watersheds: An Evolving Model*, is attached below as Appendix A.]

PART 1. OVERVIEW

The Watershed 2000 international conference in Vancouver will be featuring a presentation on the British Columbia government's policy for Integrated Resource Management issues of watersheds which constitute a source of surface-fed community drinking water (Water Resources Planning and Source Water Protection, Monday, July 10, Session 7, 1:30pm - 4:55pm). The Ministry of Environment, Lands and Parks (MELP) paper, *Source Water Protection for British Columbia's Community Watersheds: An Evolving Model*, presents a mandate for the continuance of industrial activities, such as roadbuilding, clearcut logging, mining, agriculture, and utility corridors in these watersheds. We believe that these activities are inappropriate for maintaining and achieving the safest and best water quality objectives, activities which may lead to the requirement of various expensive treatment facilities, which themselves can be problematic because of the chemicals and costs that they add. In the midst of Walkerton, the B.C. government is moving even more quickly backwards.

The B.C. Tap Water Alliance is a coalition of concerned groups and citizens who advocate the protection of community drinking supply watersheds from resource management activities. This coalition urges the provincial government to adopt new and critical legislation to both protect these drinking supply watersheds from industrial and resource management activities, and to provide local communities the opportunity of independent control over these sources. We are calling on the government to pass a new "Community Drinking Water Protection Act", which would include a moratorium on logging activities in drinking supply watersheds. The focus of the Act would be to adopt the closed watershed approach that the Greater Vancouver water users presently enjoy. We believe that the Greater Vancouver Regional District's (GVRD) closed watershed approach is the safest and best system for watershed protection, and may also be the cheapest in the long run (GVRD water rates are currently 17.9 cents Canadian per cubic meter).

LOGGING IN COMMUNITY WATERSHEDS

Over the last 30 years, the predominant resource development activity in many of these drinking supply watersheds has been clearcut logging, a controversial issue identified through persistent community concerns, protests, civil disobedience, and court actions.

> The public is very concerned and cynical about Government's management of community watersheds; on average, 10 to 20 letters a day are received criticizing forest practices in watersheds. (British Columbia Ministry of Forests Briefing Note, prepared for the Deputy Minister of Forests, Philip B. Halkett, For Decision, December 11, 1992.)

Though these complaints have been ongoing for decades, politicians and senior provincial government administrators (who have discretionary powers) are reluctant to administer appropriate changes to provincial policy and legislation, and have repeatedly refused to respond to local and municipal resolutions to protect their watersheds, the majority of which are located on publicly owned land (Crown Lands). Even as the Watershed 2000 conference proceeds, citizens are - for a fourth year in a row - about to be arrested in the Slocan Valley (located in southeastern British Columbia) for protecting their drinking watersheds from roadbuilding and logging proposals. The fact that members of the public are being arrested for a fundamental right, for long-term protection of drinking water, is a public disgrace.

RECENT PRECEDENTS AGAINST LOGGING IN COMMUNITY WATERSHEDS

The Greater Vancouver Regional District, which provides one half of British Columbia's population with drinking water, confirmed a long term policy in November 1999 to ban logging in its three forested watersheds: the Capilano, Seymour, and Coquitlam. This decision was the result of ongoing public pressure and debate in the 1990s over the impact of logging on the deterioration of water quality. For almost 40 years (1927-1967) the Greater Vancouver Regional District's policy was to ban roadbuilding and logging. After 1967, however, the GVRD changed its policy, and began to construct over 300 kilometers of roads, and logged almost 5000 hectares of old forests. The GVRD is now faced with expensive filtration and restoration costs, costs which are passed on to regional taxpayers. Heightened concerns by 1990 over increasingly turbid water led citizens to demand a ban on logging, which was implemented by 1995.

In 1994, the City of Victoria, which is British Columbia's capital, was forced by the provincial court to stop logging its watershed. In 1999, the City of Seattle in the northwestern United States changed its policy from logging in its water supply, the Cedar Creek watershed, and is now in the process of restoring the many road networks to the land's original condition, at a large cost to public coffers. In 1996, President Clinton passed legislation which mandated a moratorium of logging in Portland City's watershed, the Bull Run. These precedents are very clear in their message, however British Columbia's provincial authorities and politicians have failed to acknowledge these important decisions, and to make the necessary legislative adjustments with regard to all and future provincial community watersheds.

For instance, in 1998, after years of logging, and the consistent related deterioration of water quality, the Sunshine Coast Regional District (northwest of Vancouver City) held a referendum, the first referendum of is kind in British Columbian history, where 88% of the public voted to end logging in the Chapman and Gray Creek watersheds, a decision which the provincial government refuses to honor. In the town of greater Creston, in southeastern B.C., where the public fought for over 20 years against logging of the Arrow Creek watershed, the government finally undermined the process by making the town of Creston itself a forestry corporation, and made it a legal requirement that they had to log in their watershed, a strategic initiative which it undoubtedly plans to implement in other communities.

SUMMARY

We urge the participants of the Watershed 2000 conference to take a second look at the information in MELP's report, and consider the notion that there is far more to this issue than what is presented. Though we have focused on the predominant issue of logging, the other resource use activities are equally valid, especially cattle grazing and mining activities, but have gone unexamined. There is one thing that we would like to stress, namely that the B.C. government has failed in its fiduciary duty to protect potable drinking water sources for British Columbians.

PART 2. A BRIEF CRITIQUE OF THE MINISTRY OF ENVIRONMENT, LANDS AND PARKS (MELP's) REPORT, S*ource Water Protection for British Columbia's Community Watersheds: An Evolving Model* (Watershed 2000 conference, Monday, July 10, Session 7, 1:30pm - 4:55pm Water Resources Planning and Source Water Protection)

MELP's summary of the recent management history of community drinking watersheds in British Columbia (pages 2-6) is understated and misrepresentative. For instance, the following summaries:

1. The Greater Vancouver Water District's lease of Crown Lands (page 3). Provincial legislation under the *Land Act* once provided a direct means for communities to lease drinking supply watersheds for protection purposes for a thousand years (1908-1970). This legislation was altered in 1970, 1979, and 1996. Though some water purveyors are still requesting this legislation for their watershed, in order to become "exempt from the provincial administration of multiple resource tenures that affect most other communities in BC", provincial government agencies are refusing to allow them this important opportunity.

2. The paper acknowledges on page 3 that the provincial Water and Health Acts do "not provide the water purveyors direct control over upstream land use activities that may impact the quality and quantity of their drinking water". Here, "water purveyors may be required to provide potentially expensive treatment to water as a result of upstream activities beyond their control, with little recourse for cost recovery," yet the government mandates the abuse of these watersheds, and prevents the protection of these areas. The natural filter is removed, and the citizens must install their own.

3. The brief reference on page 4 to the 1980 guidelines document failed to provide any reference to what precipitated that document, namely a government inter-departmental review team called the Task Force on the Multiple Use of Watersheds of Community Water Supplies. Because of public attention on resource use activities in British Columbia drinking watersheds, activities which suddenly began to escalate in the late 1960s, the government responded by creating a Task Force in early 1972, apparently the first of its scope and nature in North America. 325 communities and water purveyors were contacted, who responded to lengthy questionnaires. The resultant and identified surface supply watersheds were then specially designated as *Land Act* Watershed Reserves, referenced on provincial land use maps, and divided into three categories according to physical size. The smallest category, called Category I, was to be theoretically provided with maximum protection, and the following two categories with a sliding scale of both protection and local consultation before any implementation of resource use activities. Those processes failed, mostly because the provincial referral system, which was to pass on development proposals to provincial health officers and the local water users, were either not completed, or were only circulated internally. Of course, there were many other community watersheds which should have been granted the designation as Watershed Reserves, but were excluded from that process.

The associated public planning processes, called Integrated Watershed Management Plans (IWMPs), which were "to determine the best use or combination of uses" within the planning area also failed, mostly because consultative processes were one-sided, and citizen groups were only afforded lip service and sidelined from the consultation process.

Eventually, government agencies began to erase the institutional memory of Watershed Reserves in the 1990s, and without public consultation reincorporated them into a new legislative framework in 1995, called *Forest Practices Code* community watersheds. The 1995 *Forest Practices Code Act* "community watershed" blanket designation was a house-keeping measure intended to subsume the *Land Act* Watershed Reserve designations and reassign administrative authority for community watersheds to the provincial Ministry of Forests. Equally astonishing is the absence of any reference to the fact that MELP is/was the administrative authority for these community Watershed Reserves, not the Ministry of Forests. Identification and protection of community watersheds in British Columbia has devolved considerably since the recommendations of the 1972 Task Force were implemented, as well as specific policies to protect community Watershed Reserves. The community Watershed Reserve system, with its identification procedures, legislated administrative instruments, and

longstanding MELP administrative authority, has been simply ignored by successive governments to the detriment of community watersheds throughout the province.

4. The *Forest Practices Code Act* (recent forest legislation passed in 1995), does not in any form respect protect drinking supply watersheds and water quality. Much of the code is not only unenforceable, but is vague and general, and allows for multiple interpretations of resource use activities. In contrast to the IWMP process mentioned above, the *FPC Act* does not specifically provide for watershed-scale planning, either strategically or operationally, and there is no effective monitoring to determine if the current community watershed provisions of the Code are actually protecting drinking water sources. Under the *FPC Act*, public input on this critical subject has been reduced by providing comments to individual logging companies on Forest Development Plans for the area.

5. Because of recent persistent and publicized complaints, the provincial Auditor General finally conducted an investigation in these matters in the late 1990s, *Protecting Drinking Water Sources* (March 1999), a study which has numerous limitations in its scope, assessments, and recommendations. Despite the many concerns raised over resource activities and water quality, the provincial government is not only slow to respond to the concerns raised by the Auditor General, but is continuing to advocate an industrial policy of Integrated Resource Management.

The recent national news story of tainted drinking water and fatalities in Walkerton, Ontario, has provided a means of focus on an issue that is well-overdue on this subject matter. As a result, sensitivity over water quality is at a premium over the last few months, and government agencies are taking no chances with dozens of boil-orders cropping up throughout the province.

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For more information, please email the B.C. Tap Water Alliance: bctwa@alternatives.com
For website news on recent citizen actions in the Slocan Valley: www.rmec.org/valhalla/, www.tinmen.org, www.watertalk.org

APPENDIX A: SOURCE WATER PROTECTION FOR BRITISH COLUMBIA'S COMMUNITY WATERSHEDS: AN EVOLVING MODEL

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ABSTRACT

With 86% of the population of British Columbia (BC) dependent on surface water supplies for drinking water, effective management and protection of the watersheds that provide this water to communities - community watersheds - has been a subject of focused government concern and active public debate. Most of these community watersheds are located on provincially owned land (Crown land). As government policy for Crown lands calls for integrated resource management numerous legally tenured and untenured activities, such as forestry, range use, mineral exploration, and recreation must be carefully managed to protect community watersheds from potential impacts on water quality and quantity. The Provincial Government implemented voluntary guidelines for the management of Crown lands used for community water supplies in 1980 and enabled a process referred to as Integrated Watershed Management Planning. With the enactment of the Forest Practices Code of BC Act (the Code) in 1995, many community watersheds were afforded a level of legislated

protection through requirements for higher forestry standards. The Code also provided a new array of forest planning tools from high level strategic plans to site specific operational plans which could be applied to address a wide range of forest resources, including water. In 1999, the BC Auditor General published the results of an audit assessing the effectiveness of provincial programs in protecting drinking water sources. The Auditor concluded that although the major drinking water sources examined provide good water quality and required minimal treatment almost all face risks from human activities that are not adequately managed and offered 26 recommendations to improve program effectiveness. A multi-agency Directors Committee was tasked with coordinating government actions to address these recommendations. The tools and policies to protect community water supplies continue to evolve in BC. The key challenges to address in the future are to clarify opportunities for purveyors to influence land use decisions, develop a long term strategy to apply watershed-based planning approaches to protecting drinking water sources, and to ensure effective monitoring and auditing of statutory requirements.

KEYWORDS: Source water, drinking water, community watershed, watershed protection, British Columbia

INTRODUCTION

With the majority of the population of British Columbia dependent on surface water supplies for drinking water, effective management and protection of the watersheds that provide this water to communities - community watersheds - has been a subject of focused government concern and active public debate. The purpose of this paper is to document the evolution of source water protection for community watersheds on provincially owned (Crown) land in British Columbia.

PHYSICAL, SOCIAL, AND ECONOMIC SETTING

British Columbia, Canada, is a large province (1 million km 2) encompassing 14 biogeoclimatic zones, including mild Mediterranean, temperate rainforest, dry bunchgrass, alpine, tundra, and boreal forests (Meidinger and Pojar, 1991). Much of the province is mountainous and forested, although there are some areas such as the interior plateau which are drier, flatter and covered with grasslands. Precipitation is generally abundant throughout the province, with the coastal areas having some of the highest precipitation rates in the world exceeding 250 cm/yr. Dryer interior areas can have less than 30 cm/yr.

The greatest proportion of BC's population of 4 million is concentrated in the two south-western municipal regions of Greater Vancouver, with a population of 2 million, and Greater Victoria, with a population of 325,000. Outside of these two urban areas the remainder of the population is scattered throughout the province in smaller cities, towns, and rural regions.

The province's economy has historically been resource based, with forestry being the single most dominant industry, followed by mining, fishing, agriculture, hydropower development, and tourism. Although urban areas are shifting to service-oriented and technological industries, most of the rural areas continue to be dominated by the resource industries.

Ninety-two percent of the province is owned by the Crown and managed by the Province, the balance being federal lands or privately owned. Crown lands are subject to integrated resource management, which is defined as the identification and consideration of all resource values, including social, economic, and environmental needs, in land use and development decision making. Most Crown lands are tenured for multiple resource uses, including water use, forestry, mineral exploration, linear developments (power lines, pipelines, roads), range use, recreation, and other industrial uses. Separate government ministries and agencies with different enabling legislation administer or regulate each of these activities.

Water is a Crown owned resource. Surface water is licensed for a variety of purposes, including waterworks, domestic use, irrigation, industrial, and hydropower. Groundwater is not licensed in BC.

WATER USE IN BC

Eighty-six percent of the population of BC depends on surface water, with the remainder of the population using groundwater as its primary water supply (BC Ministry of Forests, 1996). There are approximately 12,000 watersheds with licensed drinking water use in BC. In addition, there are tens of thousands of individual unlicensed water users relying on surface water, much of it used without treatment. Health authorities authorize about 3700 surface and groundwater systems serving 2 or more users. About half of these are small systems providing drinking water for less than 15 customers.

Community watersheds are the sources for surface water supplies - streams, lakes, and springs - licensed under the provincial Water Act for community use via a waterworks utility or water usersí community. Community watersheds that contain Crown land can be legally designated under the Forest Practices Code of BC Act (the Code) as "Community Watersheds". The Code definition of a "Community Watershed" restricts designation to Crown land watersheds under 500 square kilometres in area which are licensed under the Water Act for community use. In total area, designated community watersheds represent 1.5 per cent of the province (BC Ministry of Forests, 1996). Most of these watersheds are located in the Provincial Forest, which falls under the jurisdiction of the Ministry of Forests, and therefore are subject to integrated resource management. In the case of designated Community Watersheds, the Ministry of Forests shares responsibility for approval of forest development plans with the Ministry of Environment, Lands and Parks.

Watersheds supplying drinking water that contain or are wholly within private land may also be subject to local government land use bylaws and processes. Two notable watersheds of this type are the Greater Vancouver Water District and Greater Victoria Water District watersheds, which between them provide water to over half the province's population. The watersheds of these two urban areas are either owned outright or leased from the province for water supply purposes, and therefore are exempt from the provincial administration of multiple resource tenures that affect most other communities in BC. Both of the watershed authorities for these urban areas strictly control activities in their watersheds, including restricting public access.

Water use in BC is licensed to water purveyors under the Water Act, which is primarily a water allocation act and doesn't guarantee water quality or quantity. Under the Safe Drinking Water Regulation of the Health Act, water purveyors are required to provide safe, potable drinking water to their clients. Licences and approvals under these acts do not provide the water purveyors direct control over upstream land use activities that may impact the quality and quantity of their drinking water. Consequently, water purveyors may be required to provide potentially expensive treatment to water as a result of upstream activities beyond their control, with little recourse for cost recovery. The Waste Management Act provides government with some tools to abate water pollution. Furthermore, integrated land use planning processes in place do consider the drinking water users in making land use decisions and approving land use tenures. However, the effectiveness of these tools and processes to protect drinking water sources have been questioned by the BC Auditor General. (Office of the Auditor General, 1999).

As filtration is in its infancy in BC, most surface water supplies are either untreated or are treated with simple disinfection - chlorine, chloramine, or ozone (Baisley and Cameron, 1996). Given this minimal level of treatment, many water supplies, particularly the small water systems and individual users, are vulnerable to impacts on raw water quality. Users relying on small streams are especially vulnerable due to quick hydrologic response times in their watersheds.

EARLY COMMUNITY WATERSHED MANAGEMENT

Recognizing the vulnerability of community watersheds to impacts caused by upstream activities, and the potential risks to downstream water users, the provincial government first attempted to provide guidelines and policy for the management of Crown lands used as community water supplies in 1980 (Province of BC, 1980). The guidelines outlined rudimentary management practices for resource activities within community watersheds. The policy provided a framework for a provincial referral system, which enabled resource development proposals to be reviewed by agencies such as the Ministry of Environment and local governments

prior to being approved. However, because most community watersheds are located in the Provincial Forest, the decision making authority for land management of community watersheds usually remained with the District Manager of the Ministry of Forests.

The policy also provided a template for the development of Integrated Watershed Management Plans (IWMPs), which were technical, consensus-based multi-stakeholder driven plans designed to allow integrated resource development in watersheds but to influence practices which might impact downstream water resources (Province of BC, 1984). Twenty seven IWMPs have been undertaken since the late 1980's to the present. Of these, twelve have been signed off by provincial agencies and implemented. The range and numbers of stakeholders and the often conflicting interests that can be involved provides some clue as to the difficulties encountered in reaching consensus on a management plan. These include tenured forest licensees, tenured water purveyors, tenured mineral claims, tenured range permits, First Nations rights, organized and un-organized recreation users, local government jurisdictions, federal fisheries (Fisheries and Oceans Canada), utility companies, and provincial agencies (Ministries of Forests; Energy and Mines; Environment, Lands and Parks; Agriculture, Fish and Food; Crown Lands, etc., Figure 1). Typical issues include the rate, location and type of forest harvesting, riparian protection, access management (including watershed closure) for resource extraction and recreation use, pesticide and fertilizer use, flow agreements to ensure flows for fish, location and intensity of range use, referral and approval authorities for local governments and First Nations, environmental impacts of mineral exploration and development, utility corridor development, and emergency contingency plans in the event of impacts on water.

IWMPs have been effective in improving communication and co-operation among stakeholders, providing a forum for gathering and assessing technical data, and developing prescriptive measures for best management practices. They have enabled water monitoring and watershed restoration programs. Those IWMPs that have been implemented have been considered successful in raising the standard of resource management in watersheds, although it has been difficult to determine if these standards have actually resulted in measurable improvements to water quality and quantity.

Despite considerable investment of time and resources by participating parties, IWMPs have been hindered by numerous obstacles and a number have not been signed off. A key shortcoming of IWMPs is the lack of legislated authority - agreements are voluntary and adherence to the prescriptions within the plans are contingent on the goodwill of parties involved. In those cases where it has been difficult to achieve consensus the planning processes have continued for up to 10 years. While IWMPs were originally envisioned as technical planning processes involving only decision-making agencies, an increasingly knowledgeable public demanded that the plans tackle land use issues beyond the plans' mandate, such as socio-economic impacts and land tenure reform. In view of these difficulties, no new IWMP planning processes are being initiated in the province.

In the early 1990s, an interagency committee began revision of the 1980 guidelines, and started the development of a comprehensive guide for best management practices in community watersheds. This multi-resource initiative was eclipsed by the proclamation of the Forest Practices Code of BC Act in 1995.

FOREST PRACTICES CODE

The Forest Practice Code (the Code) was established to raise the standards of forestry practices, back them up with enforcement, and demonstrate compliance to a public concerned about the environmental effects of forestry. With the enactment of the Code, many community watersheds were officially recognized and afforded a level of legislated protection previously not available to them. Community watersheds designated under the Code (467 province-wide to date) were to be subject to higher standards of forestry practices, a greater degree of involvement by environment officials in forest development planning (including co-approval of forest development plans), and were to require detailed technical information such as hydrological watershed assessments and terrain assessments. Riparian protection in community watersheds was to be more stringent than in other areas. The Code allowed for the establishment of legally enforceable water quality objectives in community watersheds that would need to be met during harvesting and road construction activities. Best management practices for forestry activities were summarized in a Community Watershed Guidebook, which,

although not legally enforceable on its own, was intended to support the Code (BC Ministry of Forests, 1996). A separate Crown corporation, Forest Renewal BC, was formed to oversee watershed restoration projects, many of which occurred in community watersheds.

The Code established a planning hierarchy of strategic and operational plans. Strategic plans include Land and Resource Management Plans (LRMP), Resource Management Zones, Landscape Units and Sensitive Areas. LRMPs may be undertaken over a large area, typically a Forest District. LRMP planning processes are multi-stakeholder and have a high degree of public input. Resource Management Zones may derive from an LRMP or other process and are typically subzones with special resource management objectives covering numbers of watersheds within a Forest District (e.g. spotted owl management zones). Landscape Unit plans are established for areas that typically include several watersheds or portions of larger drainage basins. Landscape Unit boundaries are based on bio-diversity considerations. Sensitive Area plans can be developed for areas, typically smaller than a watershed, that contain especially sensitive ecological characteristics.

Legislated authority can be acquired for some or all of a strategic plan's objectives, therefore becoming requirements that must be followed under operational level plans. Despite the different scales of strategic planning provided for under the Code, there is no provision for watershed based planning that would specifically encompass community watersheds.

Operational plans under the Code include Forest Development Plans (FDP), Silviculture Plans, and Access Management Plans. The Ministry of Environment, Lands and Parks, Water Management, has co-approval authority with the Ministry of Forests only for FDPs, and only for community watersheds identified within the FDP. This level of approval provides the opportunity to review the general location and area of proposed development, associated road construction or rehabilitation, and compliance with required assessments and Code regulations. It does not provide the opportunity to review and approve site level plans (e.g. silvicultural plans).

The Code requirement to conduct a Watershed Assessment Procedure (WAP) in designated community watersheds is a valuable tool at the watershed level, although it is not a planning process. A stakeholder committee is required during preparation of the WAP in Community Watersheds buts its role is advisory only and has no provision for public input. Opportunities to better address the concerns of water purveyors and health authorities within the WAP process are now being considered.

While the Code has significantly improved resource management in the 5 years it has been in force, including the protection of fishery and water resources, a number of challenges remain with respect to protecting sources of drinking water. For example, approximately 2% of BC is private land used for forestry. About half of these private lands are subject to the Private Land Forest Practices Regulation (the Regulation). A majority of these lands encompass watersheds, including community watersheds, on the populated east coast of Vancouver Island. While the Regulation recognizes community water supply areas, its provisions are less stringent than those for community watersheds on Crown land under the Code. Other private land is not subject to either the Code or the Regulation.

Required water quality objectives have been slow to be established for community watersheds and consequently are not being implemented as a monitoring and enforcement tool. Developing site specific objectives is an expensive and time consuming process due to the need to monitor and assess several years of background conditions. This is a very important tool and as it becomes fully implemented should significantly increase the knowledge of water quality trends, the effectiveness of Code provisions, and understanding of the potential impacts of forestry within a watershed which would support preventative and remedial actions.

There has been limited compliance and effectiveness monitoring to determine if the community watershed provisions of the Code are actually protecting drinking water sources. A recently initiated pilot audit in the south western portion of BC found that, in general, forest licensees were in compliance with statutory Code requirements. However, the audit found that in most cases voluntary best management practices referenced in

the Community Watershed Guidebook were not being followed (Ministry of Environment, Lands and Parks, in progress).

The Code primarily addresses forestry concerns, but does not apply, or only partially addresses, other resource uses such as mining, agriculture, and recreation. These issues are able to be addressed effectively through integrated resource planning processes. However, as mentioned previously, the Code planning hierarchy of strategic and operational plans does not include watershed-scale planning, thus creating a dilemma over how best to address community watershed concerns within the existing planning structure.

AUDITOR GENERAL'S REPORT ON PROTECTION OF DRINKING WATER

In response to growing public concern, BC's Auditor General conducted an audit of the province's ability to protect drinking water. The audit, entitled "Protecting Drinking-Water Sources", found that although the drinking water sources examined were basically good, almost all faced risks from human activity (Office of the Auditor General of BC, 1999). The report outlined specific concerns about the ability of the province to protect drinking water and provided 26 recommendations on addressing those concerns.

The Auditor General noted that recent outbreaks of Cryptosporidium and Giardia, which are not readily removed or deactivated by conventional disinfection processes, underline source water protection as an important part of ensuring safe drinking water. The Auditor General estimated that installation of filtration for approximately 100 of the major water systems in BC would represent a capital cost in the order of $700 million. The report suggested that effective source water protection would help defer the need for installation of expensive water treatment in many communities, and would contribute to the multi-barrier approach to water protection in those communities that already have disinfection programs. The report also identified that small water systems are particularly vulnerable to the impacts of inadequate water source protection because they are more likely to have multi-resource use in their watersheds and are less likely to have disinfection systems in place.

The Auditor General identified that the current piecemeal approach to drinking water resource management in BC, with the myriad of agencies and resource activities involved, was a major impediment to the effective management of drinking water supplies. A key recommendation of the Auditor General's report was that a more integrated approach to resource management take place amongst the responsible agencies to ensure effective source water protection, and that a single lead agency be designated to represent drinking water interests.

The Auditor General called for improvements in the implementation of the Forest Practices Code, including better monitoring and enforcement and the establishment of water quality objectives. The report also recommended a review of the rights of water purveyors in relation to the rights of other resource users such as forest licensees in source water areas.

As a result of the Auditor General's report a multi-agency committee representing health authorities, environmental and resource management agencies was established to co-ordinate implementation of the report's recommendations. Several actions are being taken to address the Auditor's 26 recommendations. These include: a series of annual reports to be produced by the Office of the Provincial Health Officer over the next three years to provide an overview of the state of drinking water supplies in the province; a review of the legal rights of water purveyors; research into the impacts of range use and recreational activities in watersheds; improvement of health authority and purveyor representation at land use planning and watershed assessments tables; continuation of efforts to develop and monitor the attainment of water quality objectives in Community Watersheds; and initiatives to assist small system purveyors through education and training.

THE FUTURE

Communities in BC continue to be active in lobbying for greater protection of community watersheds. Local governments as water purveyors are concerned about the financial liability they face should higher levels of treatment be required, as evidenced by a motion passed by the Union of BC Municipalities during their 1999

annual convention which calls for the province to take legislative action to ensure that drinking water users and suppliers have tenure rights, and financial and liability protection. There continues to be conflicts, sometimes including protests and road blockades, associated with the extensive reliance on inexpensive and generally abundant surface water supplies in multi-use watersheds that have other significant resource values. The Sierra Legal Defence Fund recently released a report that provides an overview of select community watersheds across the province and highlights a number of the issues of concern to communities and non-governmental organizations (Sierra Legal Defence Fund, 2000). The report concludes with a call to elevate the status of water in making decisions on land use in community watersheds.

An emerging trend is the consideration of community watershed management as a health issue, as opposed to a solely economic or environmental issue. Health officials have the authority to intervene in any circumstance that may potentially pose a hazard to public health. Although historically there has been little involvement of health officials in community watershed management, their role will likely be elevated as a result of the government's response to the Auditor General's report.

Coincident with the desire by communities for increased local control of their watersheds is the shift by government away from prescriptive land management. The Forest Practices Code, which applies to the majority of the province's surface water supplies, was streamlined in 1998 in an attempt to reduce red tape and shift accountability to industry. In addition, reduction in government resources and staff has and will continue to necessitate more creative means of community watershed protection. New approaches will need to include greater emphasis on results-based compliance monitoring of existing legislative regulations. Increased collaboration between environmental agencies and health authorities will also be needed to make better use of water quality information and to better inform the public of emerging issues. Clearly, increased public understanding of the complex health, economic and environmental issues surrounding community watersheds will be important to ensure needed public policies are developed in a timely manner and are balanced.

The key challenges to address in the future are to identify opportunities for purveyors to influence land use decisions, develop a long term strategy to apply watershed-based planning approaches to protecting drinking water sources, and ensure effective monitoring and auditing of statutory requirements.

CONCLUSION

Identification and protection of community watersheds in British Columbia has evolved considerably in the last 20 years. Voluntary inter-agency agreements have become legislative requirements and increased attention has most certainly improved the quality of management. However, many issues remain contentious and increasing public knowledge and expectation require continued improvements to the current approach. The primary issues include: addressing purveyors rights and interests on land use decisions that affect their water supplies; ensuring watershed based planning to provide the opportunity to balance stakeholders and public interests; and auditing of current resource management activities to ascertain effectiveness of legislated requirements.

Source water protection and the management of Crown land community watersheds will continue to evolve as the population grows and resource development continues. Finding the right balance between beneficial resource development and the need for protection of the interests of drinking water users is a major challenge in BC.

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