Regional District of Central Kootenay

Regional Watershed Governance Initiative

Prepared by:
Christina Metherall, M.Sc.
Elucidate Consulting
January 2020

Acknowledgements

The author would like to respectfully acknowledge:

the support of Martin Carver, Ph.D., P.Geo., P.Eng., P.Ag. Of Aqua Environmental Associations (Nelson, BC), a member of the project team, who provided valuable local knowledge and technical expertise,

the generosity of the RDCK residents who volunteered their time to support stakeholder interviews,

the vision of the RDCK Board in initiating this important project,

the Real Estate Foundation of BC for their support in funding this project and,

the First Nations whose traditional territories lie in the RDCK, including the Ktunaxa, Syilx*, and Secwépemc Nations.*

Contents

Acronyms and Abbreviations

AWDM	Agricultural Water Demand Model
BC	British Columbia
BCDC	BC Data Catalogue
CAD	Consultative Areas Database
CRMP	Community Resource Management Plan
CVRD	Cowichan Valley Regional District
CW	Community Watershed
CWB	Cowichan Watershed Board
CWP	Community Watersheds Project
CWPP	Community Wildfire Protection Plan (Program)
CWS	Cowichan Watershed Society
DAIA	Development Approval Information Area
DPA	Development Permit Area
DFO	Department of Fisheries and Oceans
DWO	Drinking Water Officer
DWPA	Drinking Water Protection Act
DWPP	Drinking Water Protection Plan
DWWP	Drinking Water and Watershed Protection
ELC	Environmental Law Clinic
EMS	Environmental Monitoring System
EPA	Emergency Program Act
FBC	Fraser Basin Council
FBMB	Fraser Basin Management Board
FPB	Forest Practices Board
FPPR	Forest Planning and Practices Regulation
FRPA	Forest and Range Practices Act
FSP	Forest Stewardship Plan
GAR	Government Actions Regulation
GW	Groundwater
IC	Industrial-Commercial
ID	Improvement District
IHA	Interior Health Authority
ILRR	Integrated Land & Resource Registry
LGA	Local Government Act
LGC	Lieutenant Governor in Council
MDA	Master Development Agreement
MEPR	Ministry of Energy, Mines, and Petroleum Resources
MFN	Malahat First Nation
MFLNRORD	Ministry of Forests, Lands and Natural Resource Operations and Rural Development
MMAH	Ministry of Municipal Affairs and Housing
MOECCS/MOE	Ministry of Environment and Climate Change Strategy (Ministry of Environment)

MOH	Ministry of Health
MOTI	Ministry of Transportation and Infrastructure
MOU	Memorandum of Understanding
MSC	Multi-Stakeholder Committee
NBC	Nicola Basin Collaborative
NWCRT	Nicola Watershed Community Round Table
NWUMP	Nicola Water Use Management Plan
OCP	Official Community Plan
OGC	BC Oil and Gas Commission
OHV	Off Highway Vehicle
O.I.C.	Order in Council
PFLA	Private Forest Landowners Association
PGA	Professional Governance Act
PHO	Provincial Health Officer
POE/POU	Point of Entry/Point of Use (water treatment systems)
RCMP	Royal Canadian Mounted Police
RDCK	Regional District of Central Kootenay
RDKB	Regional District of Kootenay Boundary
RDN	Regional District of Nanaimo
SBA	Shawnigan Basin Authority
SBS	Shawnigan Basin Society
SC	Steering Committee
SW	Surface Water
TAC	Technical Advisory Committee
ToR	Terms of Reference
UV	Ultra-violet
WUC	Water Users Community
WSA	Water Sustainability Act
WSP	Water Sustainability Plan
WS	Water System
WWD	Waterworks District

Executive Summary

In 2019 the Regional District of Central Kootenay (RDCK) initiated the Regional Watershed Governance Initiative Project. The intent of the Regional Watershed Governance Initiative Project is to investigate the role of the RDCK in watershed governance, with the primary goal of protecting watersheds where drinking water sources may be at risk.

The RDCK is investigating its role in watershed protection because healthy watersheds are essential to the economic, social, environmental and cultural wellbeing of the region. Currently, decisions that impact watershed health are made by a wide range of actors including provincial, federal, Indigenous and local governments as well as a wide range of watershed stakeholders. These decisions are often made with limited information and in silos with little inter-agency coordination.

The RDCK seeks to increase the level of collaboration in the region to better serve the needs of the communities, agencies and overarching interests involved.

The Regional Watershed Governance Initiative Project includes the following activities:

- Task 1: Review & Explain Current Legislative Tools and Points of Access for Local Government
- Task 2: Watershed Case Studies
- Task 3: Compare & Assess Precedents and Best Practices in Other Jurisdictions
- Task 4: Make Recommendations
- Task 5: Final Reporting

Task 1. Review & Explain Current Legislative Tools and Points of Access for Local Government: To start, information was gathered on the legislative tools and points of access used by local government to participate in watershed protection. In this step it was found that while there are several tools available, many local governments have had limited success in using these tools to proactively protect water quality (particularly on Crown land). Of the tools available, most of them involve working closely with other orders of government.

Recent changes to legislation in the Water Sustainability Act (2016), may support an increased role for local government in watershed management. However, the Province is still in the early phases of implementation of the Act and will be prioritizing work in areas where there is a clear and documented need, coordination and collaboration among the community, and established and respectful relationships with other orders of government and First Nations.

Task 2. Watershed Case Studies: In order to better understand the unique issues and concerns in the RDCK, research was conducted into six case study areas, including:

1. Bourke, Sitkum & Duhamel Community Watershed (Area F);
2. Arrow Creek Community Watershed (Area B);
3. Quartz Creek Watershed (Area G);
4. Argenta Watershed Area (Area D);
5. Harrop-Procter (Area E); and,
6. Deer Creek (Area J)

In the case study areas stakeholders noted concerns related to:

- Water quantity
- Water quality
- Capacity constraints (regulatory, funding)
- Lack of community consensus and inter-governmental coordination

The diversity of the concerns, and the inter-relationships between the challenges, demonstrate the complexity of watershed management, the limitations of trying to solve the issues independently, and the value of taking a coordinated and 'whole of watershed' approach.

Task 3. Compare & Assess Precedents and Best Practices in Other Jurisdictions: In recent years, several local governments and community groups in BC have recognized gaps in watershed protection and taken action to build local capacity. These organizations have worked collaboratively with local, regional, provincial, and First Nations partners to develop watershed protection initiatives that support community health and safety, environmental wellbeing, and economic sustainability.

To support the RDCK in understanding its potential role in watershed protection, a review of precedents, best practices, and lessons learned in other jurisdictions was completed. This work focused on the Fraser Basin, Regional District of Kootenay Boundary, Cowichan Valley Regional District, Regional District of Nanaimo, and Nicola Valley. Key lessons learned include:

- A regional watershed protection approach is most effective if it focuses on *supporting* provincial decision-making, rather than *taking on* that decision-making.
- A watershed protection service that focuses on 'improving decision-making' and voluntary action is more likely to be appreciated by stakeholders and decision-makers.
- It is essential to engage with First Nations early and meaningfully.
- Early and consistent relationship-building efforts are very important. Partnerships are essential to the success of any watershed protection effort.
- All key stakeholders should be invited to the table to ensure that work is balanced and considers diverse perspectives.
- A collaborative planning and community engagement exercise is needed in order to ensure that the service reflects the unique needs of the community and makes the best use of local resources and opportunities.
- Sustainable funding attracts more funding. Sustainable funding *is* achievable.

Task 4. Make Recommendations: Next, recommendations were developed to support the RDCK in watershed protection. To complete this work, Tasks 1, 2, and 3 were reviewed and additional consultation conducted with regional and provincial government staff.

It was found that the RDCK is well-positioned to take on a role in improved watershed protection. As the level of government that is responsible for land use planning (on private land), emergency response, and provision of water services (in 19 communities), the RDCK has unique interest in watershed protection. The RDCK is also the level of government that is closest to the community and able to communicate community interests with other levels of government.

Although an improved regulatory environment for watershed management would be beneficial, there is a clear role within the existing system for the RDCK to increase capacity, improve coordination, enhance decision-making, and support communities in addressing watershed issues. To support the RDCK in protecting watershed health, it is recommended that the following steps are taken at a regional scale:

Recommendation #1: Establish organizational capacity to pursue recommendations

Recommendation #2: Strengthen relationships with partners and community stakeholders

Recommendation #3: Create a cross-jurisdictional and multi-stakeholder forum to support improved collaboration in watershed management

Recommendation #4: Develop an action plan for a regional watershed initiative

Recommendation #5: Pursue sustainable funding for a regional watershed initiative

For each of these recommendations, details are provided on timing, resources, and actions. Information is also provided on the potential scope of a regional watershed protection service.

By taking these actions, the RDCK can support communities in maintaining the healthy and vibrant watersheds that are essential to the economic, social, environmental and cultural wellbeing of the region.

Regional District of Central Kootenay Regional Watershed Governance Initiative

Introduction

In 2019 the Regional District of Central Kootenay (RDCK) initiated the Regional Watershed Governance Initiative Project. The intent of the Regional Watershed Governance Initiative Project is to investigate the role of the RDCK in watershed governance with the primary goal of protecting watersheds where drinking water sources may be at risk.

Study Area

The RDCK encompasses 2,315,335 hectares of land, covering a diverse social and physical landscape. As a local government, the RDCK manages 19 water systems and includes nine member municipalities and 11 electoral areas. The RDCK's communities range from larger (e.g. the City of Nelson) to smaller communities (e.g. Ymir) and rural homesteads. In the RDCK there are 35 community watersheds designated as drinking water supply sources.

The RDCK lies within the traditional territories of the Ktunaxa, Syilx, Sinixt and Secwepemc people[1]. Today, the RDCK is home to a diverse range of residents who appreciate the many ways in which the watersheds contribute to the economic, social, environmental, and cultural wellbeing of the region.

The region's physical geography is highly variable, with many small watersheds, flowing into lakes and much larger systems including the Columbia, Lower Kootenay and Pend D'Oreille rivers.

The watersheds in the RDCK face many challenges including geohazards, interface wildfire, seasonal drought, extreme weather events, and climate change. Human activities also introduce challenges in the form of development pressures, resource use, and cumulative impacts from years of industrial activity and settlement with limited coordinated oversight.

First Nations with Traditional Territories in RDCK according to the Consultative Areas Database[1]

Ktunaxa Nation (Ktunaxa Nation Council): ʔakink'um‡asnuq‡iʔit (Tobacco Plains), ʔakisq'nuk First Nation (Columbia Lake), ʔaq'am (St. Marys), and Yaqan Nuʔkiy (Lower Kootenay)

Syilx Nation (Okanagan Nation Alliance): Smelqmix (Upper Similkameen) Smelqmix, snpíntktn (Penticton), stqaʔtkwəɬwt (Westbank First Nation), suknaqínx (Okanagan), swíws (Osoyoos), spaxomən (Upper Nicola)

Secwépemc Nation (Shuswap Nation Tribal Council): Kenpésqt (Shuswap), Qwʔewt (Little Shuswap), Sexqeltqín (Adams Lake), Simpcw (Simpcw), Sk-emtsin (Nekonlith), Splatsin (Splatsin)

[1] Consultative Areas Database (CAD): http://maps.gov.bc.ca/ess/hm/cadb/
The RDCK is within the traditional territories of the Sinixt people, who today live primarily in the United States and are represented by the Colville Indian Band.

Project Overview

The project is an initial scoping study to assist the RDCK in understanding the potential roles and responsibilities of the Regional District with regards to water governance.

The Regional Watershed Governance Project includes the following activities:

- Task 1: Review & Explain Current Legislative Tools and Points of Access for Local Government
- Task 2: Watershed Case Studies
- Task 3: Compare & Assess Precedents and Best Practices in Other Jurisdictions
- Task 4: Make Recommendations
- Task 5: Final Reporting

This document provides a summary of the work completed for Tasks 1 - 4. The report begins with a summary of the current legislative tools and points of access for local government (Task 1). This is followed by a high-level overview of the watershed case study areas (Task 2).

Next, it provides information on precedents and best practices in other jurisdictions (Task 3).

Finally, it provides recommendations that are intended to guide the RDCK in protecting watersheds where drinking water sources may be at risk (Task 4).

The recommendations that are provided were developed by linking the key challenges identified in Task 2 with the most suitable instruments and best practices identified in Task 1 and 3.

Watershed Governance

In the 'Handbook for Water Champions', the POLIS Water Sustainability Project (POLIS WSP) describes watershed governance as:

"developing or refining new institutions and agreements that balance provincial and Indigenous leadership with local involvement to lead freshwater management and decision-making at the watershed scale.

Watershed governance is advanced through community and institutional partnerships that:

- *Build trust and relationships;*
- *Decide how to make difficult trade-offs, for example, around water use during times of drought; and*
- *Design and implement innovative programs and policies that solve problems and build resiliency for new climate and water realities."*

(Handbook for Water Champions, POLIS WSP)

Task 1: Current Legislative Tools and Points of Access for Local Government

Drinking water management and water governance in BC is complex and governed by a range of legislation and regulations. Table 1 provides an overview of the legislation that supports drinking water protection and the relevant regulations. The agencies responsible act as points of access for each of the legislative tools. In cases where there is both a policy and operational agency, the operational agency is the agency that acts as the point of access.

Table 1: Legislation and agencies responsible for drinking water protection in BC[2]

Legislation and Relevant Regulations	Agency Responsible
Drinking Water Protection Act • Drinking Water Protection Regulation	MOH (Policy) and Regional Health Authorities (Operations) (in the RDCK, the Interior Health Authority)
Public Health Act • Sewerage System Regulation • Health Hazards Regulation	MOH (Policy) & Regional Health Authorities (Operational)
Environmental Management Act • Agricultural Waste Control Regulation • Municipal Wastewater Regulation • Organic Matter Recycling Regulation • Contaminated Sites Regulation • Hazardous Waste Regulation • Pulp Mill and Pulp and Paper Mill Liquid Effluent Control Regulation • Code of Practice for Industrial Non-Hazardous Waste Landfills incidental to the Wood Processing Industry • Code of Practice for Soil Amendments • Code of Practice for the Slaughter and Poultry Processing Industries	MOECCS
Integrated Pest Management Act	MOECCS
Water Sustainability Act • Groundwater Protection Regulation • Water Sustainability Regulation • Dam Safety Regulation • Water Sustainability Fees, Rentals, and Charges Tariff Regulations	MOECCS (Policy) and MFLNRORD (Operations)
Water Protection Act	MOECCS & MFLNRORD
Park Act • Park, Conservancy, and Recreation Area Regulation	MOECCS
Water User's Communities Act	MFLNRORD
Water Utility Act	MFLNRORD
Utilities Commission Act	MFLNRORD
Forest and Range Practices Act	MFLNRORD

[2] https://www.bcauditor.com/sites/default/files/publications/reports/OAGBC_Protection-of-Drinking-Water_RPT.pdf

Legislation and Relevant Regulations	Agency Responsible
• Government Actions Regulation • Range Planning and Practices Regulation • Forest Planning and Practices Regulation	
Drainage, Ditch, and Dike Act	MFLNRORD
Dike Maintenance Act	MFLNRORD
Land Act	MFLNRORD
Local Government Act and Community Charter	MMAH
Local Services Act • Subdivision Regulations	MMAH and MOTI
Oil and Gas Activities Act • Environmental Protection and Management Regulation • Drilling and Production Regulation	MEMPR (Policy) & OGC (Operations)
Geothermal Resources Act • Geothermal Drilling and Production Regulation • Geothermal Operations Regulation	MEMPR & OGC
Mines Act and the Health, Safety, and Reclamation Code for Mines in BC	MEMPR and Federal Government
Hydro and Power Authority Act	BC Utilities Commission
Transportation Act	MOTI
Transportation of Dangerous Goods Act	MOTI
Environmental Assessment Act	MOECCS & Environmental Assessment Office

Acronyms: MOECCS: Ministry of Environment and Climate Change Strategy, MEMPR : Ministry of Energy, Mines, and Petroleum Resources, MFLNRORD: Ministry of Forests, Lands, and Natural Resource Operations, MMAH: Ministry of Municipal Affairs and Housing, MOH: Ministry of Health, MOTI: Ministry of Transportation and Infrastructure, OGC: Oil and Gas Commission

In recent years, several local governments have sought to increase their role in watershed management and watershed protection. These governments have used a variety of legislative tools and points of access to participate in watershed management. The following tools and points of access are described in this section and summarized in Table 2:

1. Drinking Water Protection Act:
    - Drinking water protection plans
    - Water source and system assessments & assessment response plans
    - Requests for investigation
2. Local Government Act and Community Charter:
    - Relevant existing bylaws: zoning and floodplain
    - Green Bylaws Toolkit
    - Establishment of service area
    - Concurrent authority provisions
3. Professional Governance Act and Professional Reliance Model
4. Emergency Program Act
5. Forest and Range Practices Act:
    - Forest Practices Board
    - Community Watershed designation
    - Water Quality Objectives
6. Lands Act:
    - Reserve area designation
    - Objectives
7. Crown Land Use Planning
8. Water Sustainability Act:
    - Water sustainability plans
    - Water objectives
    - Water advisory board
    - Other tools

Table 2: Summary of legislative tools and access points

Legislative Tool/Approach	Frequency of Involvement: Planning/Permitting/ Ongoing Management of Development	Legally Enforceable/ Binding?	Staff and financial resources required	Mechanism/approach	Other local governments using approach	Effectiveness
Drinking Water Protection Act - Drinking Water Protection Plans, Source Water Protection Plans	• Drinking Water Protection Plans (DWPP): planning, permitting • Section 29 investigation: one-time • Source water protection plans: planning	• DWPP: yes • Section 29 investigation: potentially • Source water protection plans: no	• DWPP: high • Section 29 investigation: low-medium • Source water protection plans: medium-high	• DWPP: request to local DWO • Section 29 investigation: request to Health Authority • Source protection plans: water supplier initiates in partnership with Health Authority	• DWPP: none • Section 29 investigation: Stillwood/Jeffrey Cr • Source water protection plans: many (e.g. Town of Oliver, District of Sparwood)	• DWPP: unknown • Section 29 investigation: limited • Source protection plans: limited/low
Local Government Act and Community Charter	Planning, permitting and ongoing management	• Yes, on private land; limited on Crown land	• Variable	• Bylaws developed by staff and adopted by the Board • Some tools such as Development Permit Areas best developed in conjunction with an OCP update	• Commonly used	• Variable, dependent on bylaw
Professional Governance Act and Reliance Model	Planning, permitting, ongoing management of development	• Limited	• Low	• Used in implementation of local government bylaws and management of resource use on Crown land	• Commonly used	• Low
Emergency Program Act (EPA)	Planning	• Limited	• Low-moderate	• Local governments are required to have emergency response plans under the DWPA and the EPA	• Commonly used	• Effective in an emergency. Limited in proactive source water protection.

Legislative Tool/Approach	Frequency of Involvement: Planning/Permitting/ Ongoing Management of Development	Legally Enforceable/ Binding?	Staff and financial resources required	Mechanism/approach	Other local governments using approach	Effectiveness
Forest and Range Practices Act	• Forest Practices Board: Complaint-based • Community Watershed designation: very limited involvement in planning. • Water Quality Objectives: planning	• Complaints: no/limited • Community watershed designation: yes, limited • Water quality objectives: yes, limited	• Low	• Complaint: anyone can file a compliant via phone or email. • Community watershed: no clear information on process to apply • Water quality objectives: no clear information on process	• Complaints: many with limited effectiveness • Community watershed designation: 466 in BC • Water quality objectives: one water supplier	• All: limited/low
Lands Act	• Reserve Area Designation: planning • Objectives: planning	• Reserve Area Designation: yes, limited to dispositions under the Land Act • Objectives: yes, limited to dispositions under the Land Act	• Reserve Area Designation: low • Objectives: low	• Reserve: established by the LGIC through an OIC. Requires a Cabinet submission and support of regional MFLNRORD staff • Objectives: as part of a Crown land planning process	• Reserve: 190 in BC (e.g. City of Trail, City of Grand Forks) • Objectives: five community watersheds in the Kalum Sustainable Resource Management Plan area	• Reserves: Effective at limiting new dispositions. Do not limit forest and range or oil and gas activities as those are regulated under different acts • Objectives: unknown
Crown Land Use Planning	Planning, ongoing management	• Limited	• Medium	• Land Use Planning: based on Provincial priorities. Suggest developing relationship with Regional MFLNRORD staff and local First Nations	• Current activities focused on collaborating with First Nations to modernize land use planning	• Uncertain

Legislative Tool/Approach	Frequency of Involvement: Planning/Permitting/ Ongoing Management of Development	Legally Enforceable/ Binding?	Staff and financial resources required	Mechanism/approach	Other local governments using approach	Effectiveness
Water Sustainability Act: Water Sustainability Plans and Objectives, Water Board	• Water Objectives: if regulations are developed, they could place restrictions on existing resource users and be required to be considered by decision makers in permitting and ongoing management • Water Sustainability Plans: planning; if regulations are developed, they could place restrictions on existing resource users and be required to be considered by decision makers in permitting and ongoing management • Water Board: potential for involvement in planning, permitting, ongoing management The WSA technically enables local government involvement in planning, permitting, and ongoing management, however it is unclear how it will be implemented.	• If regulations are developed to support objectives or a water sustainability plan	• Water Objectives: (likely) low - medium • Water Sustainability Plans: (likely) very high • Water Board: unknown	• TBD. First step is developing a good relationship with Regional MFLNRORD staff and local First Nations.	• None yet	• Unknown. Has potential to be very effective

1) Drinking Water Protection Act & Drinking Water Protection Plans

The Drinking Water Protection Act (DWPA) is the primary legislation designed to ensure the provision of safe and potable water for British Columbians. The DWPA is administered by the Ministry of Health and the objective of the Act is to protect drinking water from 'source to tap'.

The Act outlines requirements for drinking water standards, operator certification, source water protection planning, and reporting and notification requirements. The DWPA applies to water systems (including any water system that supplies more than one household) but not single-family dwellings.

The DWPA contains several components related to source water protection including:

1. Water source and system assessments & assessment response plans
2. Drinking water protection plans
3. Requests for investigation

To access any of these options, the Regional District must work with the Interior Health Authority.

Water Source and System Assessments & Assessment Response Plans

Under Part 3 of the DWPA, if there are potential threats to water quality that might adversely impact a water supply, a Drinking Water Officer (DWO) can order a water supplier to prepare a water source assessment. The DWO can also order an assessment response plan, which identifies measures that will be taken to reduce the threat to the water supply. The assessment and plan may be required to obtain a drinking water system operating permit.

These assessments and plans are sometimes referred to using other terms including 'Comprehensive Source to Tap Assessment' (which includes both a water source and system assessment) and 'Source Water Protection Plans'. Throughout this document the term 'source water protection plan' will be used as this is the most commonly used language outside of legislation.

In the development of a source water protection plan, a water supplier will bring stakeholders together to identify watershed issues and develop solutions. However, it is important to note that stakeholders are not required to participate in this planning process and are not required to take actions to protect water quality. In addition, the source water protection plans are not required to be considered in land management decisions.

Drinking Water Protection Plans

Part 4 of the DWPA identifies drinking water protection plans as a tool to manage risks to water supplies. These plans offer significantly greater authority for management of drinking water risks than source water protection plans. A drinking water protection plan may propose the regulation of any activities or areas of concern. The plan and associated regulations may be given legal status by the determination of provincial Cabinet. The legal status may range from merely a document that must be considered, to one that limits or restricts certain activities or government decisions.[3]

Although these plans have the potential to provide municipal water suppliers with the legal tools to protect source water, they are only allowed to be used when there are no other practical measures to protect water quality. According to the DWPA, the local DWO must consider all other options available

[3] http://www.safewater.org/PDFS/reportlibrary/Waterproof3Ecojustice.pdf

under the Act prior to initiating a drinking water protection plan. Several areas have attempted to develop drinking water protection plans, but in the 16 years since they have become an option, none of these plans have been approved to date. Even in the Comox Valley, where the Provincial Health Officer had requested that the Minister establish a drinking water protection plan on four separate occasions, a drinking water protection plan has not been established. In July 2019 the Office of the Auditor General of BC released a report recommending that the Provincial Health Officer (PHO), in collaboration with the Ministry of Health, review the legislative provisions regarding drinking water protection plans and report to the Minister of Health on impediments to the implementation of drinking water protection plans.[4]

Requests for Investigation

Under Section 29 of the DWPA, if a person considers that there is a threat to their drinking water, the person may request that the DWO investigate the matter following the process identified in Section 29 (2).

This approach has been tried by several water systems in the RDCK without success. In April of 2019, the RDCK wrote to the Interior Health Authority (IHA), requesting an investigation under Section 29 of the DWPA into concerns regarding the Ymir water source. In July 2019 this request was declined by the IHA for the following reasons:

- The information provided by the RDCK was deemed insufficient evidence to support an investigation. In order to support an investigation, evidence must show an *imminent* health risk to users. However, at the time, the forest harvest activities of concern were still in the planning phase and there was currently no evidence of deteriorating source water quality.
- BCTS was intending to conduct public consultation activities. The RDCK was encouraged to participate in this process and if the RDCK's concerns were not satisfactorily addressed, they were instructed to bring those to the Forest Practices Board (see 'Complaints to Forest Practices Board', which describes the limitations of this approach) or note any new concerns to IHA.
- BCTS was intending to conduct comprehensive hydrogeological and hydro-geomorphic assessments, which would consider how harvesting would affect water quality, quantity, and timing of flow at the intake. [5]

The RDCK was also encouraged to engage in a source assessment and protection planning process to facilitate stakeholder engagement in the multi-use watershed. The RDCK has not yet pursued this approach, as source protection planning is costly and may have limited effectiveness. The RDCK has engaged with BCTS in water quality monitoring.[6]

In the 2019 PHO Drinking Water Report, the PHO stated that the number of Section 29 investigations has continued to increase over the years and that there are limited resources to address all the investigation requests.[7] The report also identified that there is no readily available data on the Section 29 investigations that have been undertaken. The report recommended that Ministry of Health develop guidance for

[4] https://www.bcauditor.com/sites/default/files/publications/reports/OAGBC_Protection-of-Drinking-Water_RPT.pdf
[5] Russell, Chris. Environmental Health Officer, Interior Health Authority. Letter to RDCK, July 11, 2019.
[6] Zumpano, Tanji. Water Services Liaison. RDCK. In discussion with author, October 16, 2019.
[7] https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/documents/pho-drinking-water-report-2019.pdf

investigating threats to drinking water under Section 29 and keep better and more accessible records of the investigations and requests for investigations.

One example of where this approach has been used is in the Jefferd Creek watershed, as documented by West Coast Environmental Law (WCEL).[8] In 2004, the residents of Stillwater initiated a request to address concerns over the impacts of forest harvesting on their drinking water supply source, Jefferd Creek.[8] This process took over eight years and multiple grants from WCEL's Environmental Dispute Resolution Fund. In the end, the Drinking Water Protection Office (DWPO) found that the proposed logging *would* amount to a threat to the drinking water supply, but did *not* find that the logging would create a significant risk of an imminent drinking water hazard (a precondition for a hazard abatement order). Ultimately, BCTS decided to revamp its logging plans in response.

WCEL attributes the results to the dedication of the community, the support of WCEL, the courage of the DWPO, and the reasonableness of BCTS in adjusting logging plans. The author is clear that this approach cannot be used to stop logging and *may* work in cases where there is an imminent threat to public health.[8]

Discussion of Options Under the DWPA

A July 2019 report by the Office of the Auditor General of BC (*The Protection of Drinking Water: An Independent Audit Report*) concluded that the Ministry of Health and the PHO are not sufficiently protecting drinking water for all British Columbians. One of the key findings of the BC Auditor General report was that there is confusion between ministries and regional health authorities as to the circumstances under which actions to protect drinking water can be taken.

The Auditor General Report (2019) and PHO Drinking Water Report (2019) suggest that further work is needed to ensure that the DWPA can be used to support a proactive and preventative approach to protecting drinking water. Although there are several options available under the DWPA, there are steps that need to be taken at the provincial and regional health authority level in order for these tools to be effective.

2) Local Government Act and Community Charter

The Local Government Act (LGA) and Community Charter define the authority of local governments and guide decision-making.[9] The LGA provides local governments with the powers, duties and functions to represent the interests of communities and to respond to their needs. It enables a regional district to influence watershed health through land use planning, zoning, infrastructure, development, approval decisions, fire protection, water services, waste management, emergency management, and several other functions.

Under the LGA, land use and development are regulated by zoning and other bylaws (e.g. run-off control, flood plain bylaws) and agreements. These regulations enable local governments to implement the long-term vision described in their regional growth strategies, official community plans and other planning tools.

A full review of the options available to local government under the LGA is beyond the scope of this project, but several areas are described below.

[8] https://www.wcel.org/blog/drinking-water-wins-jefferd-creek-logging-battle
[9] https://www2.gov.bc.ca/gov/content/governments/local-governments/facts-framework/legislative-framework

Relevant Existing Bylaws: Zoning and Floodplain

The RDCK currently has zoning and floodplain bylaws that are used to provide guidance on the development of some of the land within the regional district boundaries. The RDCK also has 'development permit areas' in some regions, which provide further guidance on land development in order to ensure that it is consistent with the objectives in the local Official Community Plan (OCP).

The RDCK's zoning bylaw regulates how land may be used. The zoning bylaw allows the RDCK to decide where development should happen and what type of development is appropriate for a specific site. It can also be used to guide current and future land use in a zone.

Changes to existing zoning are within the discretion of the Board and the Board can make decisions to approve (or refuse) rezoning or amend current zoning to protect watershed health. The RDCK land use zoning bylaw covers some specified, areas of the RDCK, but other areas remained un-zoned. For example, Electoral Area H and E do not have land use zoning.

The RDCK also has a floodplain bylaw which provides guidance on land development in floodplains. The bylaw identifies areas requiring special management. The floodplain bylaw only applies to a small downstream portion of the case study watersheds.

Within certain areas of the RDCK, development permits are required to ensure that new commercial, industrial, multi-unit residential development, and development adjacent to a watercourse is consistent with the objectives outlined in the local OCP. The objectives include protection of the natural environment, compatibility with neighbouring activities, and preservation of heritage values.[10]

Section 14(2) of the Interpretation Act states that local government enactments such as zoning bylaws or development permit areas do not bind the provincial government in the use or development of land. [11] While the RDCK can zone provincial Crown land, it cannot limit the Province of BC in its use of the land.[12]

Green Bylaws Toolkit

The Green Bylaws Toolkit is a guidebook developed by the Environmental Law Centre at the University of Victoria, Faculty of Law to assist planners and decisions makers in planning for sustainable communities.[13] The Toolkit is a practical and well-utilized resource that identifies the options available to local government. The Toolkit contains guidance in the use of:

- Regional Growth Strategies
- Official Community Plans
- Zoning bylaws
- Development Permit Areas
- Tax exemptions for conservation
- Development Approval Information Areas
- Subdivision Servicing bylaws

[10] https://rdck.ca/assets/Services/Land~Use~and~Planning/Documents/2016-PLN-DP-Brochure.pdf
[11] http://www.bclaws.ca/civix/document/id/complete/statreg/96238_01#section1
[12] Hawkins, Dana. Planner 2, RDCK. In discussion with author, January 21, 2020.
[13] https://www.toolkit.bc.ca/resource/green-bylaws-toolkit

For each of these tools the Toolkit provides templates and examples that local governments can adapt for their own purposes. The Toolkit was first released in 2007 and an updated version was released in 2016.[14] Local governments in BC continue to develop new and innovative approaches to environmental management and watershed protection. If the RDCK is considering developing a 'green bylaw', staff should reference the Toolkit and conduct a scan of best practices in other jurisdictions.

In 2009 the Groundwater Bylaws Toolkit was developed as an appendix to the Green Bylaws Toolkit and provides helpful references that specifically relate to groundwater protection.[15]

Establishment of Service Area

Under the Local Government Act and Community Charter, municipalities and regional districts have broad authority to provide services that their respective municipal councils or regional district boards consider necessary or desirable. Under Sections 332 and 338, a local government can, by bylaw, establish and operate any service that the Board considers necessary or desirable for all or part of the regional district.

Some local governments have established watershed protection service areas (e.g. Regional District of Nanaimo, Regional District of Kootenay Boundary, and Cowichan Valley Regional District Drinking Water and Watershed Protection Programs). These local governments have established watershed protection services areas for the purpose of increasing collaboration between with provincial government and other stakeholders and to inform land use planning.

Further information on the process these governments used to establish a service area can be found in Task 3.

Concurrent Authority Provisions

Under the Local Government and Community Charter, concurrent authority provisions provide municipalities with powers to regulate activities that are generally regulated by the Province. The Community Charter recognizes that, in several spheres, municipalities and the provincial government have a shared interest in regulating activities. The concurrent authority provisions apply to bylaws that deal with building standards, public health, protection of the natural environment, wildlife, and the prohibition of soil removal or prohibition of deposit of contaminated soil.

Regional districts do not have the same scope of regulatory authority as municipalities and are empowered to enact bylaws in relation to three of the four spheres (public health, building standards and prohibition of soil deposit or removal), subject to the Community Charter's concurrent authority rules. Any new bylaw or amendment to an existing bylaw that relates to one of the spheres of concurrent authority requires provincial government involvement.

Under the Section 14 (2) Interpretation Act, bylaws created under the concurrent authority provisions cannot be used to limit the provincial government in the use of land.[16]

3) Professional Governance Act and Professional Reliance Model

The Professional Reliance Model is an approach to decision-making introduced in BC in 2001 that gives an expanded role to professionals and industry in decision-making and reduces the role of government and

[14] https://stewardshipcentrebc.ca/PDF_docs/GreenBylaws/GreenBylawsToolkit_2016.pdf
[15] https://www.obwb.ca/library/groundwater-bylaws-toolkit/
[16] http://www.bclaws.ca/civix/document/id/complete/statreg/96238_01

regulators. The Model is now widely used across BC to guide land development and the management of natural resources. Professional Reliance is defined as: "the practice of accepting and relying upon the decisions and advice of resource professionals who accept responsibility and can be held accountable for the decisions they make and the advice they give."[17]

This approach to decision-making is applied by local governments when they rely on the judgement of professionals to support land use decisions. An example of this is when the floodplain bylaw relies on the assessment and design work of a Professional Engineer to locate a safe site to build on.

The model is also at play when the provincial government relies on the judgement of professionals such as engineers and foresters to assess the impact of forest harvesting and road building on watershed health and property.

In June 2018 an independent, comprehensive review of the Professional Reliance Model was released. This review found that there are many ways in which this approach is not supporting the sustainable management of natural resources. The report suggests that the Professional Reliance Model introduces a conflict of interest, rendering resource decisions vulnerable to the bias of proponents and professionals. It also suggests that resource management should be managed more closely by provincial or local governments. The review provided 121 recommendations for improvement, including:

- Two recommendations (#1 and #2) to address professional governance
- 32 recommendations (#3 to #34) to address improvements to laws, regulations and authorizations, and
- 87 recommendations to focus on specific regulatory regimes in the natural resource sector

The first two recommendations have been adopted by the provincial government:

- Recommendation #1: Establish an Office of Professional Regulation and Oversight (the "Office")
- Recommendation #2: Legislate critical elements of professional governance

To support the adoption of these two recommendations the provincial government passed the Professional Governance Act (PGA) in 2018. The PGA legislates several elements of professional governance and strengthens government oversight of the professional associations. It is unclear at this time if this approach will support the improved management of natural resources.

4) Emergency Program Act

Under the Emergency Program Act, drinking water is a critical service and local governments are required to have an emergency management plan. Active and effective inter-agency relationships are important in emergency response planning and are imperative when dealing with a crisis event. The quality of relationships can determine the quality of the response in a crisis and the Auditor General for Local Governments recommends that local governments develop healthy stakeholder and inter-agency relationships to support an effective emergency response.[18]

[17] https://engage.gov.bc.ca/app/uploads/sites/272/2018/06/Professional_Reliance_Review_Final_Report.pdf
[18] http://www.aglg.ca/app/uploads/sites/26/2018/04/Perspectives-Series-Booklet-Improving-Local-Government-Emergency-Management.pdf

5) Forest and Range Practices Act

The Forest and Range Practices Act (FRPA) establishes the legal framework for forest and range use on Crown land. The current Act provides the legal framework for timber harvesting, road building, silviculture and range practices on Crown land. It also provides guidelines around the Forest Practices Board, the designation of community watersheds, the development of water quality objectives, and Forest Stewardship Plans.

There are several regulations that support FRPA. The regulations that relate to water suppliers include the Forest Planning and Practices Regulation (FPPR), the Range Planning and Practices Regulation (RPPR), and the Government Actions Regulation (GAR).

The FRPA and its regulations use a "results-based" approach to land management, establishing a series of broad "government objectives" and allowing permit holders to determine how they will achieve them.

The Forest Stewardship Plan (FSP) is the primary tool for managing forestry impacts on the landscape. While FSPs are open for public review and comment, the province is required to approve them as long as they conform to the FRPA and its regulations.[19]

In 2019 MFLNRORD initiated a two-year review of the FRPA. Prior reviews of the legislation have identified a need for increased opportunities for public engagement and stronger requirements for the protection of drinking water both inside and outside of community watersheds.[20] Beyond allowing comment on FSPs during the approvals process, the FRPA and its regulations provide little additional scope for local government involvement in the management of activities on Crown forest land.

Under the current FRPA, the three main options for local government involvement are described below:

- Forest Practices Board complaint
- Community watershed designation
- Water quality objective.

Forest Practices Board Complaint

The FRPA provides the legal framework for the operation and authority of the B.C. Forest Practices Board (FPB). The FPB serves the public interest as the independent watchdog for sound forest and range practices in British Columbia.[21] The FPB reports to the public and government about compliance with FRPA and response to complaints (as needed) from the community. The FPB also provides recommendations for continuing improvements in forest and range practices.

If a person or organization is concerned about forest or range practices, they can submit a complaint to the FPB, and an auditor will investigate to examine compliance with FRPA. Many investigations conclude that there has not been a violation of FRPA, as the FRPA and Professional Reliance Model combine to provide significant authority and flexibility to permit holders who are operating under an approved FSP.

[19] https://stewardshipcentrebc.ca/PDF_docs/GreenBylaws/GreenBylawsToolkit_2016.pdf
[20] https://www.bcfpb.ca/wp-content/uploads/2017/12/SR55-Forest-and-Range-Practices-Act.pdf
[21] https://www.bcfpb.ca/board/what-we-do/

The FRPA has limited requirements related to protecting drinking water quality, so the RDCK has experienced little success in addressing concerns about drinking water quality through complaints to the FPB.

Community Watershed Designation

The Minister responsible for the Land Act by order may designate as a community watershed all or part of the drainage area that is upslope of the lowest point from which water is diverted for human consumption by a licensed waterworks. In order to do this, the Minister must be satisfied that the designation is required to protect the water that is diverted for human consumption and that the area requires special management that is not otherwise provided for under FPPR or another enactment to conserve the quality, quantity and timing of water flow, or to prevent cumulative hydrological effects that would have a material adverse effect on the water.[22]

Currently, the Province does not have information available online outlining the process to establish a community watershed. In addition, there are limited staff resources dedicated to community watershed planning.

Under the Forest Planning and Practices Regulation, when a forest licence holder is operating in a community watershed, the only time that a forest licence holder is required to notify a water supplier is at least 48 hours before road construction or deactivation.[23]

The limited Provincial resourcing for community watersheds and the flexibility provided to licensees by FRPA may limit the measurable benefits provided by the community watershed designation.

Water Quality Objectives

Water quality objectives can be established in community watersheds. They can either be grand parented under section 181 (for objectives established before the FRPA) or established under the FRPA's Government Actions Regulation (Section 8) by the Minister responsible for the Wildlife Act. The Mellott Creek Community Watershed is the only community watershed with a water quality objective established under the Government Actions Regulation.[24] Under Section 8.2(3) of the FPPR, an objective set under FPRA applies 'only to the extent that it does not unduly reduce the supply of timber from British Columbia's forests'.[23]

Discussion of Options Under the FRPA

Overall, many of the protections provided to a drinking water user under FRPA are limited if a forestry user has an approved forest stewardship plan.

The 2014 FPB report, Community Watersheds: From Objectives to Results on the Ground, found that requirements under FRPA to protect drinking water are unclear, too limited in scope, and are missing elements important to the protection of human health.[24]

[22] http://www.bclaws.ca/civix/document/id/complete/statreg/582_2004
[23] http://www.bclaws.ca/civix/document/id/loo83/loo83/12_14_2004
[24] https://www.bcfpb.ca/wp-content/uploads/2016/04/SIR40-Community-Watersheds-From-Objectives-to-Results-on-the-Ground.pdf

6) Land Act

The Land Act is used by the Province of BC to grant Crown land to the public for community, industrial and business use. The Act allows the granting of land, and the issuance of Crown land tenure in the form of leases, licences, permits and rights-of-way.

Reserve Area Designation

Under the Land Act, a Regional District may apply for the establishment of a Section 15 reserve to prevent further dispositions under the Land Act. A Reserve is established by the authority of the Lieutenant Governor in Council through an Order in Council (O.I.C.) to reserve Crown land from disposition in recognition of a specific public interest, value or attribute.[25] A reserve must be established for a specific term, with a suggested minimum term of 5 years. A reserve can be cancelled or amended only by a further O.I.C.

A reserve area designation "precludes or prevents the acceptance and adjudication of Crown land applications or the disposition of Crown land, except for temporary occupation through the use of a two year temporary licence, in the subject area".[25]

A reserve area designation applies only to *new* applications for dispositions under the Land Act but does not prevent existing uses. The Land Act does not directly regulate forest harvesting and a reserve does not place any restrictions on forest and range activities, as these are regulated under FRPA.

It is also important to note that a reserve designation only restricts applications for future dispositions and does not affect existing dispositions. It also does not apply to many recreational activities.

There are several other tools that can be used to limit future dispositions under the Land Act, including Designations, Notations and Prohibitions. Further information on these can be found in the Crown Land Use Operational Policy: Reserves, Designations, Notations and Prohibitions. [25] These tools also only apply to dispositions under the Land Act.

Objectives

Under Section 93.4(1) of the Land Act, the Minister responsible for the Land Act may by order establish objectives under the Forest and Range Practices Act for the use and management of Crown resources, Crown land, or private land that is subject to a tree farm licence, woodlot licence or community forest agreement. An example of this is in the Kalum Sustainable Resource Management Area where there is an objective for the Rosswood, Usk, Kleanza, Gossen, and Hatchery community watersheds. In these watersheds there is a requirement to maintain the quality, quantity, and natural flow by ensuring "a clear-cut equivalency of less than 20% of the watershed area in sub-basins larger than 250 hectares".[26] These were developed as part of a land use planning process.

7) Crown Land Use Planning

Over the years, the Province of BC has made several attempts to integrate the management of land use on Crown lands. Several of these efforts have provided opportunities for local water suppliers to provide input on activities on Crown land. However, these opportunities have been limited to advisory roles, and

[25] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/reserves.pdf

[26] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/skeena-region/kalum-srmp/kalum_srmp_plan.pdf

none of them have provided municipalities with the authority to act on their conclusions or recommendations. With the implementation of the Water Sustainability Act there may be more potential for local involvement in the management of activities on Crown land. However, this potential has yet to be explored and it is unclear if this new legislative framework will result in greater local involvement.

Historically, the primary opportunities for water supplier involvement have taken the form of regional land and resource management plans, integrated watershed management plans, and community watershed roundtables.[27] A review of the provincial integrated management processes by the Auditor General of BC found that these processes are:

> "unlikely to deal cost-effectively with drinking-water use as well as with other competing resource uses unless:
>
> - drinking-water interests are represented on an equal footing with other interests (representation);
> - decisions are grounded in appropriate information on the values and impacts of each resource interest and on natural conditions in the water source area (information); and
> - there are mechanisms for translating findings of these processes into action (implementation)".[28]

In 2018, the Province of BC committed $16 million over three years to work collaboratively with Indigenous governments, communities, and stakeholders to modernize land use planning. This work focuses on priority areas of the province and emphasizes the BC government's commitments to collaborate with Indigenous governments. At this point, there is no evidence that Province is planning to conduct land use planning activities in the RDCK region. MFLNRORD staff have suggested that if the RDCK is interested in Crown land planning activities in the Region, it would be helpful to reach out to Regional MFLNRORD staff.[29]

8) Water Sustainability Act

In February 2016, the Water Sustainability Act (WSA) came into force. This Act provides municipalities with several new potential tools for source water protection including:

- Water sustainability plans
- Water objectives, and/or
- Water advisory boards.

The provincial government is in a place of transition as it begins implementing the WSA. The Province is taking a phased approach to implementation and at this point, has not yet developed clear guidance on the process for developing water sustainability Plans (WSPs), water objectives, or a water advisory board. Staff have started implementation work by developing policy for water objectives. This year, provincial

[27] https://www.bcauditor.com/sites/default/files/publications/1999/report5/report/protecting-drinking-water-sources.pdf
[28] https://www.bcauditor.com/sites/default/files/publications/1999/report5/report/protecting-drinking-water-sources.pdf
[29] Vukelich, Vera., MOE. Manager, Land Policy and Programs, Land Tenures Branch, MFLNRORD. In discussion with author, July 20, 2019.

staff are engaging with First Nations. In 2020, they plan to engage with local governments. Policy and guidance on WSPs and water advisory boards are expected to follow.[30]

Water Sustainability Plans

Under the WSA, one of the more powerful tools available for source water protection is called a water sustainability plan (WSP). One of the purposes of a WSP is to assist in preventing or addressing conflicts between water users and risks to water quality. Similar to a drinking water protection plan, the legal status of a WSP ranges from merely an advisory role (simply a document that must be considered), to one that limits or restricts certain activities or government decisions by regulation.

The Province has not yet provided guidance on the process for development of a WSP or how it will be prioritizing areas for the development of a WSP. Provincial government staff have stated that it is likely that a WSP would be an expensive, multi-year process. [30] The Province had not initiated a WSP at the time of the research. The provincial interviewees stated that the Province will likely prioritize areas for WSPs where there are clear issues that would be best addressed by a WSA tool and there are strong relationships between stakeholders and First Nations.[30]

The WSA provides some direction on the content of a WSP and some rules regarding the steps required in its development. Under the WSA, a local authority (municipal council, regional district board, local trust committee, improvement district, other body prescribed by regulation) can apply to lead the creation of a WSP or act as a stakeholder in that process. If a local authority is interested in developing a WSP, it can apply to the Minister to designate an area for the development of a WSP. Alternately, the Minister may order the development of a WSP for an area.

Once an area is approved for the development of a WSP, the Minister will designate a person or entity (including potentially the provincial government) to prepare a WSP. The Minister may specify a process for plan development and may limit the issues to be addressed by a plan and the recommendations (including potential regulations) that may be developed in a plan. The organization responsible for developing the proposed plan must then develop a Terms of Reference for the plan (subject to approval by the Minister) and create one or more technical advisory committees to guide its development.

If a WSP is being developed that may detrimentally affect the rights of other resource users, the person responsible for developing the plan must, within a reasonable period of time, provide the affected persons with a notification that the plan is being developed. If it is possible that other water or resource users may impact water quality, water quantity, or aquatic ecosystem health, the Minister may order those resource users to share information on their activities with the person responsible for developing the WSP and/or allow the person responsible to investigate the activities of these resource users.

Once a plan has been developed, it is submitted to the Minister for approval. The Minister can then accept all or part of a proposed WSP. If the plan includes recommendations for regulations or an order to be made under the WSA or other Acts, then the Minister submits those to the Lieutenant Governor in Council (LGC) and the LGC may, by regulation, accept all or part of the plan (including all or part of the regulations).

[30]Vigano, Jennifer. Director, Watershed Sustainability, MOE. In discussion with author, August 19, 2019.

Once a plan is in place, it can have substantial influence over land use and statutory decisions. For example, the LGC, may, by regulation, require public officers to consider a WSP in land use decisions in all or part of the designated plan area. In addition, a regulation developed as part of a WSP may limit, restrict or prohibit certain land or natural resource uses or activities in the area. The regulation may also require, restrict, or prohibit the issuance of land or resource instruments and/or establish requirements that must be imposed by a public officer as terms and conditions on a land or resource instrument. Finally, the WSP may by regulation require that other provincial government or local authorities consider the WSP in their planning processes and/or ensure that their strategic or operational planning processes are consistent with the WSP. Any regulation developed in the plan would apply to existing and future resource users.

Although the WSA provides municipalities with substantial potential source water protection opportunities through the WSP process, it is important to note that prior to 2016, the previous Water Act also provided municipalities with substantial authority for involvement through the development of 'water management plans', which were quite similar to WSPs. However, to date, only one municipality (the Township of Langley) has developed a draft water management plan and this plan was never approved. Therefore, it is not possible to determine the compatibility of these tools with other legislation and regulations, nor their effectiveness in improving water quality.

Water Objectives

Another powerful tool introduced through the WSA which has the potential to be used for source water protection is the 'water objective'. The WSA authorizes the use of 'water objectives' to sustain the water quality or quantity required for specified uses of water, and/or to sustain aquatic ecosystems. Under the WSA, the LGC may make regulations establishing water objectives for a watershed, stream, aquifer or other specified area or environmental feature and may require that a water objective be considered in land use decisions that affect that water. These regulations may authorize public officers to impose requirements on uses of Crown land or resources to promote achievement of the water objectives. A local government could provide input in the development of water objectives if they were a member of an advisory board which was tasked with developing water objectives. As with other regulations developed as part of a WSP, these regulations could be applied despite or subject to other regulations, plans, standards, objectives, or requirements.[33]

Provincial staff have stated that the development of water objectives would be a much less costly approach than the development of a WSP and may be more robust and effective.[30] Although there is no clear guidance on how the Province will prioritize areas for the development of water objectives, as with WSPs, it is likely that work will focus on areas where there are clear issues and strong working relationships between stakeholders and alignment with First Nations.[30]

At this time, there are no examples of what these objectives would look like and at what scale they would apply. When asked how these objectives would relate and compare to other objectives such as those under the FRPA and the Land Act, MOE staff noted that it is not currently clear, and that research was being done to understand these relationships.[31] MOE staff have stated that the guidelines around water objectives are currently in draft.[31] At this time, it appears that they may apply to relatively small

[31] Tyson, Greg. Water Policy Advisory, MOE. In discussion with author, October 15, 2019.

geographic areas, however the exact size of the watersheds to which they could apply has not yet been defined.[32]

Water Advisory Board

The WSA also provides for various authorities within the Act to be delegated or transferred to another person or entity. It is possible that a local government could be either directly or indirectly transferred this authority. For example, under the WSA, a municipality could be involved in a water advisory board, which could potentially be delegated the authority to exercise powers within the Act, such as the power to allocate water rights, subject to terms and conditions. Although this authority is not directly related to land use, the ability to make decisions regarding water use in community watersheds has the potential to indirectly influence land use.

Other Tools

The WSA may provide local governments with the ability to provide input on land use decisions through the 'Right of Appeal'. The 'Right of Appeal' gives local governments an opportunity to object to a water license application (or use approval or change approval application) that may affect them. Although this authority does not directly affect land use decisions, many resource activities rely on water availability and this authority provides some potential for local governments to influence activities on Crown land (except prospecting for a mineral, as this resource use is not required to obtain an authorization or license under the WSA).

The WSA also provides a water utility the ability to expropriate (with compensation) land or licenses to prevent the pollution of water that they are authorized to divert.

Finally, the WSA prohibits the introduction of foreign matter into a stream. However, the WSA specifies that it does not apply to "a forest practice to which section 46 [protection of the environment] of the Forest and Range Practices Act applies" (a forest practice that is in accordance with a plan, authorization or permit under the Forest and Range Practices Act).[33]

As the WSA and the associated regulations are quite new, it is currently unclear how effective these tools will be. Several of the options require substantial initiative and resources on behalf of the water supplier and/or provincial government, and none of them have been fully implemented to date. It is also unclear how some of the content of the Act will interface with other acts and regulations. In coming years, more information will be available on the effectiveness of these options for source water protection.

[32] Neumann, Natasha. Research Hydrologist, MFLNRORD. In discussion with author, October 22, 2019.
[33] http://www.bclaws.ca/civix/document/id/complete/statreg/14015

Task 2: Watershed Case Studies

To obtain a high-level cross-section analysis of the regional water-related issues in the RDCK, six case study areas were reviewed. These areas included:

- Case Study Area One: Bourke, Sitkum & Duhamel Community Watershed (Area F);
- Case Study Area Two: Arrow Creek Community Watershed (Area B);
- Case Study Area Three: Quartz Creek Watershed (Area G);
- Case Study Area Four: Argenta Watershed Area (Area D);
- Case Study Area Five: Harrop-Procter (Area E); and,
- Case Study Area Six: Deer Creek (Area J).

A map of the case study areas is shown in Figure 1.

In each area, research was conducted to identify the watershed pressures and challenges. This research involved the collection of information on the following attributes:

- Level of water system organization (e.g. local government, volunteer)
- Types of activity in watershed
- Geo-hazards and pressures present;
- Water sources and types of treatment
- Jurisdictional landscape
- Downstream demand and community impact

Research began with a review of available studies and reports and then an assessment of available information and data. Next, a list of stakeholders and subject matter experts was compiled, and targeted interviews were conducted to better understand community concerns.

A summary of the information sources used, and stakeholders and subject matter experts contacted is provided in Appendix A.

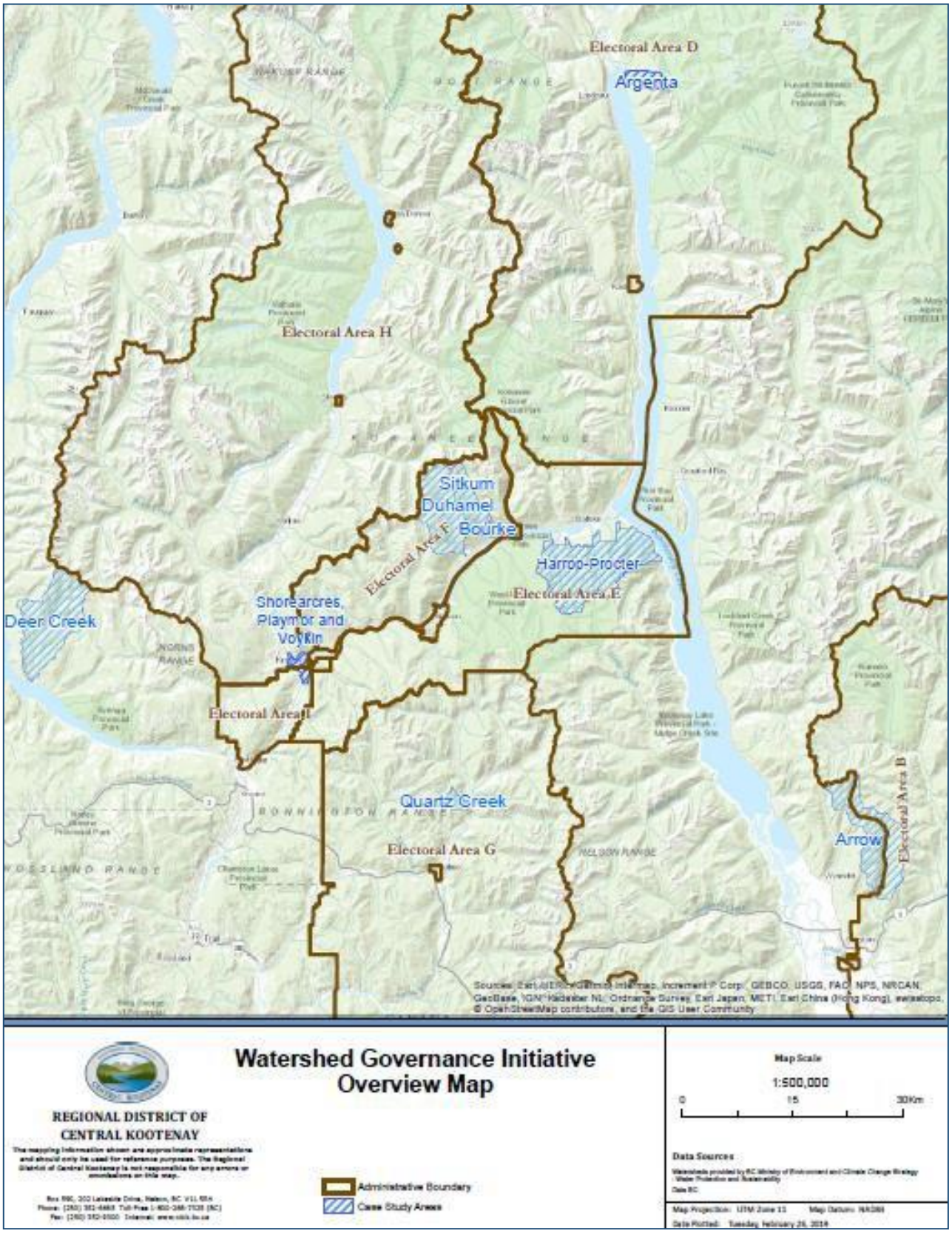

Figure 1: Map of the case study areas provided by the RDCK

Table 3 provides an overview of the challenges across the case study areas.

Table 3: Watershed Challenges in the Case Study Areas

CHALLENGE	DESCRIPTION
Water quantity	Seasonally low river flows affect water supplies for human consumption and aquatic ecosystems. These low river flows are worsened by extraction, changes to the hydrologic regime as a result of land use activities (e.g. loss of forest cover from forest harvesting), and climate change.
Water quality	Cumulative impacts of multiple, compounding activities in the watershed are affecting water quality and aquatic health. Watershed activities include residential development, industrial activities (forestry, mining), agriculture, recreation, transportation, etc. Naturally occurring sedimentation, flood flows, wildfire, and landslides are exacerbated by many of these activities.
Capacity constraints (regulatory, funding)	The ability of the community and RDCK to respond to watershed issues is limited by the existing regulatory structure. There is also a lack of funding for resource management at all levels of government. At the provincial level, due to limited funding, decisions about resource use are often made with limited understanding of the impacts and/or are based on assessments completed by professionals who are working on behalf of the resource users, rather than the public.
Lack of consensus and coordination	There is a lack of inter-jurisdictional coordination in watershed management. In addition, many in the region view the watershed values as incompatible and there is a lack of a consensus among the community about the best ways to manage the watersheds. There are also limited (and in some cases, strained) relationships between groups in the community (e.g. water system operators and forestry companies) and between levels of government (e.g. between the RDCK and First Nations, provincial agencies, and Interior Health).

In each of the case study areas, there are multiple, and often interrelated, concerns. These concerns are often caused by, and affecting, a diverse range of stakeholders and decision-makers.

The relative importance of each of these concerns varies throughout the watersheds and there is currently insufficient information available to identify one priority vulnerability or concern in each watershed.

The following section provides a more detailed examination of the pressures and issues in each case study area. The information below is summarized in Table 4. This table is followed by several figures, which show:

- Figure 2: the number of households in each case study area that relies on surface water sources for drinking water supplies
- Figure 3: an overview of land ownership (e.g. Crown vs. private) in the case study areas
- Figure 4: an overview of the wildfire risks in the case study areas, as identified by the maps developed as part of the Community Wildfire Protection Planning program.

Case Study Area 1: Bourke, Sitkum & Duhamel Community Watershed (Area F)

This case study area is in RDCK Area F of the RDCK. It includes the Bourke, Sitkum, and Duhamel Community Watersheds.

It is estimated that there are at least 255 households in this area that rely on surface water sources.[34] There are seven documented water suppliers/user groups in this area including the RDCK Duhamel water

[34] Estimated based on a review of surface water licenses, considering current licenses for domestic and waterworks purposes.

system, Whitehead Waterworks District, Six Mile Water Users Community, Bourke Creek Improvement District, and Sitkum Creek Improvement District.

This watershed is primarily Crown land (96.3%), managed as a Crown Forest Management Unit by the Province. 1.38% of the lower watershed is privately owned and is used primarily for rural residential use.[35]

There is a range of activities in this watershed including forestry, recreation, mineral exploration, and rural residential land use.[36]

In this case study area, stakeholders have shared that they are concerned about wildfire, forestry activities, rural development without suitable wastewater treatment, failing septic systems, mineral exploration and extraction, recreational users (both local and international), and cumulative impacts of all activities.[37]

There are no mapped geohazards in the area according to the Flood and Steep Creek Geohazard Risk Prioritization data provided by the RDCK. However, the Duhamel watershed is a steep-sided valley and there has been a history of landslides and debris flows. These events have been caused by failing service roads, geohazards, and weather-related impacts. They have impacted waterworks and have been recognized as a public safety threat for downstream residents.

The Duhamel alluvial fan, which has been identified as high risk, is located just downstream of the case study area.

Residents of this watershed have made complaints to the Forest Practices Board, however, the FPB has generally found that forest licence holders were not at fault because they were following regulations and practices under the FRPA. [38]

The Duhamel Watershed Society is an active community advocacy group that represents three water systems and individual domestic users. The group has developed a relationship with the forest license holder and is interested in ongoing conversation to support watershed protection. There are also several other active users of the watershed, including active Off Highway Vehicle (OHV: e.g. snowmobile, dirt bike) user groups. It has been recommended that these users are engaged in future watershed management efforts as they are active and on-the-ground in the watershed areas.[39]

Case Study Area 2: Arrow Creek Community Watershed (Area B and A)

The Arrow Creek case study area lies across the boundary of RDCK Areas A and B. The case study area overlaps with the Arrow Creek Community Watershed. There is one main water supply system in this area, the Erickson water supply system, which is owned and operated by the RDCK. This system serves both commercial and residential users. There are 733 residential users and 46 agricultural irrigation customers

[35] Source: Crown Land Registry (Tantalis). https://www2.gov.bc.ca/gov/content/data/geographic-data-services/land-use/crown-land-registry
[36] Source: Crown land tenures and forest license datasets. See Appendix A.
[37] Source: stakeholder interviews. See Appendix A.
[38] https://www.bcfpb.ca/wp-content/uploads/2016/04/IRC193-Timber-Harvesting-and-Potential-Impacts-to-Duhamel-Creek-Alluvial-Fan.pdf
[39] Jensen, Randi. Duhamel Watershed Society. In discussion with author, August 12, 2019.

in the Erickson community and Town of Creston. The RDCK receives advice and policy guidance from the Erickson Water Distribution Service Commission.[40]

The watershed is primarily owned by the Crown, and mostly managed as a community forest, which means that the community has input into the management of forestry in the watershed. Only 0.93% of the case study area is privately owned land.[35]

Stakeholders have shared that they are concerned about low flows in the watershed as well as competing demands. A recent study showed that agricultural demand in the region will likely increase, with increase demand due to climate change and changes in production (e.g., anticipated increase of cherry acreage of up to 50% over the next five years).[41]

There are neighboring systems interested in connecting and RDCK staff are currently investigating the system's capacity for additional connections.

There is one high priority geohazard identified in this case study area in the Flood and Steep Creek Geohazard Risk Prioritization: the Arrow Creek Clearwater Flood Hazard.

Case Study Area 3: Quartz Creek Community Watershed (Area G)

This case study area is in Area G of the RDCK. The case study area overlaps with the Quartz Creek Community Watershed. There is one main water supply system in this area, the Ymir system that services approximately 107 households in the community of Ymir. The system relies on surface water and is operated by the RDCK. The RDCK receives community advice and policy guidance from the Ymir Water Commission of Management.[42]

This case study area is primarily Crown land (98.62%), managed as a Crown Forest Management Unit by the Province. 1.38% of the lower watershed is privately owned and in primarily rural residential use.[35]

There are no mapped geohazards in this area according to the Flood and Steep Creek Geohazard Risk Prioritization mapping.

Stakeholders shared that they are concerned about the impacts of forest harvesting and road construction on water quality (acid rock drainage), habitat, foraging, and aesthetics. Stakeholders are also concerned about wildfire. BC Timber Sales is planning a logging development in the Ymir Water System watershed and the RDCK is working with BC Timber Sales and the community on this issue.[37]

Community and RDCK recently submitted request for investigation under Section 29 of DWPA and were declined.[6] There is an active watershed advocacy group in this area: the Ymir Community Watershed Society.

Case Study Area 4: Argenta Watershed Area (Area D)

This case study area is in RDCK Area D and includes several small watersheds along the east shore of Kootenay Lake, all without community watershed designations.

[40] https://rdck.ca/EN/main/services/water/rdck-water-systems/erickson-water-system.html
[41] https://www.bcagclimateaction.ca/wp/wp-content/media/RegionalStrategies-KootenayBoundary.pdf
[42] https://rdck.ca/EN/main/services/water/rdck-water-systems/ymir-water-system.html

There is no formal water supply system in this area relying on surface water, but there are 37 domestic users and one commercial enterprise that use surface water as a drinking water supply source.[34]

This case study area is primarily Crown land (87%), and 13% privately owned in primarily rural residential use, including the communities of Argenta and Johnsons Landing.[35]

According to the Flood and Steep Creek Geohazard Risk Prioritization mapping there are two High Priority Clearwater flood hazards in the case study area (Duncan and Lardeau Rivers, Kootenay Lake). There is also one Low Priority Steep Creek hazard (Argenta Creek).

In 2012 a slide near Johnson's Landing killed four people and destroyed three homes.[43]

This case study area has the highest wildfire risk among the case study areas. There are several zones in this case study area that are rated as having extreme or high wildfire risk.

Stakeholders shared that they are concerned about slope stability and the impact of forestry roads and drainage on landslide risk. They are also concerned about wildfire and the impact of climate change on hydrology of small streams that are used as water supply sources. Stakeholders have stated that groundwater is not a suitable alternate supply in some areas due to the karst topography.[44]

Several community members have established a wildfire mitigation group and other representatives of the community have initiated conversations with the forest tenure holder, Cooper Creek Cedar, to identify concerns regarding logging and road construction. Several of these community members have professional expertise in logging and resource management. Current cutting plans do not include efforts to cut near the historical slide area, but community members are still concerned about slope stability in the area.

Case Study Area 5: Harrop-Procter Watershed Area (Area E)

The Harrop-Procter Creek case study area is in RDCK Area E. The case study area includes the Procter Community Watershed and the Harrop Creek watershed, which is no longer designated as a community watershed.

There are at least 80 households in this area that rely on surface water. The Procter Creek Improvement District is the main water system in this area and provides surface water to 57 households. There are also 25 domestic water licenses who rely on surface water and one surface water license for a camp/facility. Downstream of this case study area, the Sandy Cr/ Granite Rd Water Users Community and Procter Spring Water Users Community provide water to approximately 35 and 20 domestic users, respectively.[37]

This case study area is primarily Crown land (98%) and managed as the Harrop Procter Community Co-Operative Community Forest. The remaining 2% of the case study area is privately owned and used for primarily rural residential land use.[35]

According to the Flood and Steep Creek Geohazard Risk Prioritization there are three Steep Creek Hazards in the area including two on Irvine Creek (Low and Very Low Priority) and Slater Creek (Low Priority). There are several natural hazards downstream and outside of the study area.

[43] https://www.nelsonstar.com/news/company-plans-logging-near-site-of-johnsons-landing-slide/
[44] Valentine, Rik. Resident. In discussion with author, August 13, 2019.

Stakeholders have shared that they are concerned about wildfire impacts from both recent and future fire, changes to hydrology as a result of climate change (they noted a lack of hydrologic monitoring), slope stability, stream temperature, and conflicting demands between licensed and unlicensed water users. In the Harrop Creek watershed, stakeholders are also concerned about high flows after a recent wildfire and fish health. In the Procter Creek watershed, stakeholders are concerned about low flows, as well as upstream diversions and works in the creek. In the Narrows Creek watershed, stakeholders are concerned about high and low flows.[37]

The case study area has a long history of community engagement in watershed protection. The Harrop Procter Watershed Protection Society was instrumental in the creation of the Harrop-Procter Community Forest.

Case Study Area 6: Deer Creek Community Watershed (Area J)

The Deer Creek case study area is in RDCK Area J. The case study area overlaps with the Deer Creek Community Watershed.

A review of water license data shows that there are 19 households in this area that rely on surface water. The Deer Creek Water Users Community is the main user in this watershed, with 12 connections (six are summer only). Downstream, there are five domestic users that rely on surface water from Deer Creek.

This case study area is primarily Crown land (97.3%). The remaining 2% of the case study area is privately owned in primarily rural residential land use.[35]

There are no mapped geohazards in this area according to the Flood and Steep Creek Geohazard Risk Prioritization mapping.

Stakeholders have shared that they are concerned about flooding, wildfire, log jams (and the impact on Kokanee movement), as well as the impact of recreation, forest harvesting, and road and bridge maintenance on water quality.

The Deer Park Recreation Society is active in the community and has established positive working relationships with the local forest licence holder. The recreation society has also worked with the Okanagan Nation Alliance to address log jams.[45]

Review of Activities by Provincial and Regional Governments in Case Study Areas

Research was also conducted to learn more about the activities of the regional health authority and the provincial government in the case study areas.[46] It was found that many of the regional and provincial staff with jurisdiction in the RDCK boundaries were operating with limited resources over a very large geographic area. With limited time and funds, staff tended to focus on core tasks such as administration of water licenses and inspections of drinking water systems. In these discussions, it also became clear that the provincial monitoring in the area occurs at a scale that likely overlooks small creeks and streams. Understanding watershed health and risk is important to local government and there is significant room for greater capacity in this area to improve the information used in decision-making.

[45] Erickson, John. Deer Park Recreation Society. In discussion with author, August 15, 2019.
[46] Source identified in Appendix A. Note: the author was informed that a review of activities by Indigenous governments in the area was outside the scope of the project.

Summary of Case Study Areas

Table 4: Summary of Case Study Areas

Case Study Area	Level of Water System Organization	Types of water systems (GW/SW/ treated?)	Downstream Demand and Community Impact	Jurisdictional Landscape (Approx. Private and Provincial land ownership)*	Types of Activity in the Watershed **	Geo-hazards and pressures present and/or anticipated*	Summary of Concerns	Community Dynamics
Bourke, Sitkum & Duhamel Community Watershed (Area F)	Duhamel: Duhamel Creek (RDCK WS), Whitehead WWD, Six Mile WUC Bourke: Bourke Cr ID Sitkum: Sitkum Cr ID,	Duhamel Creek WS (GW, no treatment), Whitehead WWD (SW, none/POE/POU), Six Mile WUC (SW, sand filter/POE/POU), Greenwood (GW) Bourke ID: SW from spring (2x disinfection + filtration) Sitkum ID: SW (disinfection, filtration)	In watershed, at least 255 drinking water users. Licenses: 4 waterworks and 95 domestic licenses. Waterworks include at least 130 users (Burke ID: 35, Sitkum ID: 30, Six Mile: 65)	Duhamel: 94.9% Crown Forest Management Unit, 3.1% Crown Protected, 1.97% Private Bourke: 94.17% Crown Forest Management Unit, 5.83% Private Sitkum: 99.21% Crown Forest Management Unit, 0.02% Crown Protected (Forest Recreation), 0.76% Private	Permitted: Forestry, roads, mineral claim, quarrying reserve, commercial recreation, trapline, waterworks Unregulated: recreation	Steep slopes, Duhamel Creek alluvial fan?	Concerns: • Wildfire • Forestry, forestry road maintenance • Rural development without wastewater treatment, failing septic systems • Mineral exploration and extraction • Recreational users (local and international) • Cumulative impacts of activity, limited oversight Vulnerabilities: • Many systems on untreated surface water with long-term boil water advisories Documented impacts: • Bourke: Slide due to unmaintained road impacted waterworks • Sitkum: increased turbidity increasing maintenance required for filtration system • Duhamel: Flooding due to high flows in creek, impacting highway and private property, 1997: slide off of BCTS road, 2010: slide off same road due to poor historical road building and incomplete de-activation, 2011: slide from same road caused impacts to waterworks	Relationships established between watershed society (representing water users) and forestry companies. Duhamel Watershed Society represents small user groups and individual domestic. Several previous FPB investigations into forestry activities. Active OHV recreation groups in watershed

Case Study Area	Level of Water System Organization	Types of water systems (GW/SW/ treated?)	Downstream Demand and Community Impact	Jurisdictional Landscape (Approx. Private and Provincial land ownership)*	Types of Activity in the Watershed **	Geo-hazards and pressures present and/or anticipated*	Summary of Concerns	Community Dynamics
Arrow Creek Community Watershed (Area B and A)	Municipal and Regional Government (Creston, RDCK)	SW (disinfection)	733 residential users +46 irrigation	0.34% Crown Managed Forest (Woodlot), 97.6% Crown Managed Forest (Community Forest), 1.05% Crown Protected (Biodiversity, Mining, Tourism Area, Misc. Reserves), 0.93% Private, 0.07% Crown (Forest Management Unit)	Permitted: Forestry, roads, mineral claim, guide outfitter area certificate, trapline, community forest, waterworks Unregulated: recreation	1 High priority Clearwater Flood Hazard: Arrow Creek	Concerns: • Low flows • Competing demands • Increasing agricultural/ commercial use • Neighboring systems interested in connecting but no capacity within existing system	Community forest creates opportunity for collaborative management.
Quartz Creek Community Watershed (Area G)	RDCK (Ymir system) + 1 domestic user	SW (Disinfection x2 + filtration)	107 residential	Quartz: 1.38% Private, 98.62% Crown (Forest Management Unit)	Permitted: Forestry, roads, mineral/ placer/coal reserve, mineral claim, trapline area, waterworks Unregulated: recreation		Threats: • Logging and forestry road construction and impact on water quality (acid rock drainage), habitat, foraging, and aesthetics. • Wildfire Documented impacts: Acid rock drainage due to road construction	Community and RDCK recently submitted request for investigation under Section 29 of DWPA and were declined.
Argenta Watershed Area (Area D)	No water system organization	Variable	37 domestic and 1 commercial enterprise	83% Crown land	Permitted**: Forestry, roads, mineral claim, trapline Unregulated: recreation	2 High Priority Clearwater flood hazards (Duncan and Lardeau Rivers, Kootenay Lake) 1 Low Priority Steep Creek hazard (Argenta Creek)	Concerns: • Slope stability: impacts of road layouts and drainage on slide risk • Wildfire – lots of community interest in mitigation • The impact of climate change on hydrology of small streams that are used as water supply sources • Groundwater is not a suitable alternate supply in some areas	

Case Study Area	Level of Water System Organization	Types of water systems (GW/SW/ treated?)	Downstream Demand and Community Impact	Jurisdictional Landscape (Approx. Private and Provincial land ownership)*	Types of Activity in the Watershed **	Geo-hazards and pressures present and/or anticipated*	Summary of Concerns	Community Dynamics
Harrop-Procter Watershed Area (Area E)	Procter Creek Improvement District	Proctor Creek ID (SW, UV and filters at POE/POU)	In area: At least 80 drinking water connections: Proctor Creek ID (57), 25 domestic, 1 camps/facility, Downstream: Sandy Cr/ Granite Rd WUC (SW, 35 users), Procter Spring WUC, (SW, ~20 users)	98% Crown land (primarily Community Forest) (Procter is a CW, Harrop was a CW)	Permitted***: Forestry, roads, guide outfitter certificate, trapline, community forest, residential, waterworks Unregulated: recreation	3 Steep Creek Hazards on Irvine Creek (Low and Very Low Priority) and Slater Creek (Low Priority) Several natural hazards downstream of area	Concerns: • Recent wildfire impacts, future wildfire • Hydrological impacts, lack of monitoring • Slope stability • Narrows Creek: low and high flows • Harrop Creek: high flows (after wildfire), fish health • Procter Creek: low flows, concern about upstream diversions and works in creek • Water temperature • Conflicts between users (licensed, unlicensed) • Climate change adaptation and wildfire risks	Active wildfire mitigation community group. Community forest supports constructive and collaborative discussion around watershed management.
Deer Creek Community Watershed (Area J)	Deer Park WUC	Variable	In area: WUC (12 connections, 6 summer-only), 7 domestic Downstream: ~5 domestic users	2.7% Private, 84.17% Crown (Forest Management Unit), 9.7% Crown Protected (Biodiversity, Mining, Tourism Area, Misc. Reserves)	Permitted**: Forestry, quarrying reserve, commercial reserve, trapline, waterworks		Concerns: • Log jams impacting Kokanee • Flooding (most of community on a floodplain and would be impacted if log jams) • Wildfire • Impact of forest practices/road and bridge maintenance • Recreation along creek	Working with Okanagan Alliance to address log jams. Recreation society active in community, generally positive relationships with industry.

Table 5: Sources: *Federal land ownership and First Nations land ownership and traditional territories not tallied. **Integrated Land & Resource Registry (ILLR), * BC Data Catalogue (BCDC). Other sources: see Table 4. Acronyms: GW: groundwater, SW: surface water, WUC: Water User Community, POE/POU: Point of Entry/Point of Use (water treatment systems), UV: ultra-violet, CW: Community Watershed, ID: Improvement District, WS: Water System, WWD: Waterworks District**

Figure 2 provides an overview of the number of households in each case study area that relies on surface water sources for drinking water supplies.

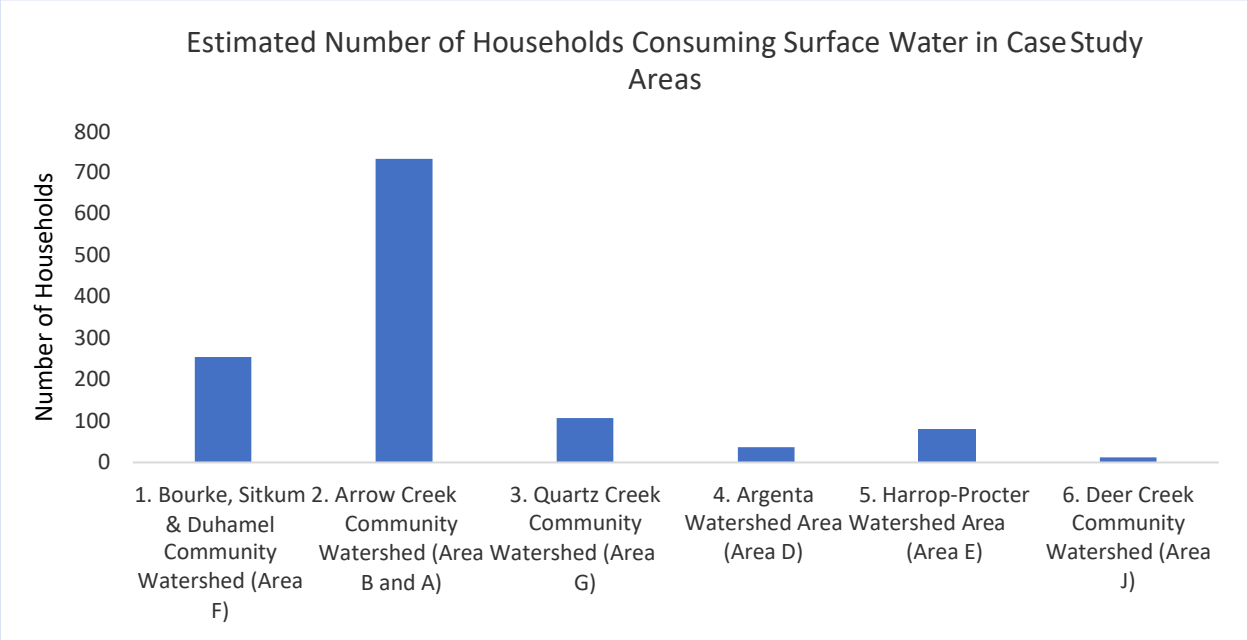

Figure 2: Estimated number of households that rely on surface water in each case study area. Sources: Water license data (BCDC), water purveyor surveys (Community Watersheds Project, 2018-2019), RDCK website, stakeholder interviews (2019)

Figure 3 provides an overview of land ownership (e.g. Crown vs. private) in the case study areas.

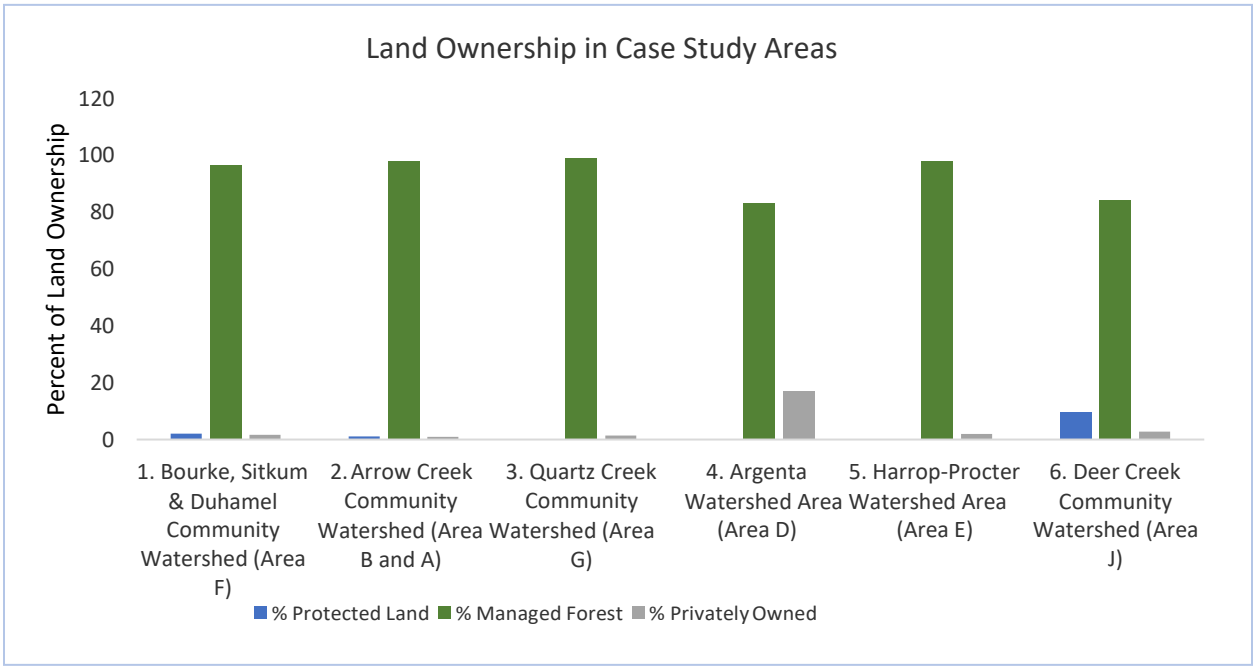

Figure 3: Land ownership in each case study area. Sources: Crown Land Registry (Tantalis query results, provided by Province of BC as part of Community Watersheds Project, 2018), Provincial Forest Mapping (BCDC), case study area boundaries (RDCK).

Figure 4 provides an overview of the wildfire risks (Figure 6) in the case study areas, as identified by the maps developed as part of the Community Wildfire Protection Planning program.

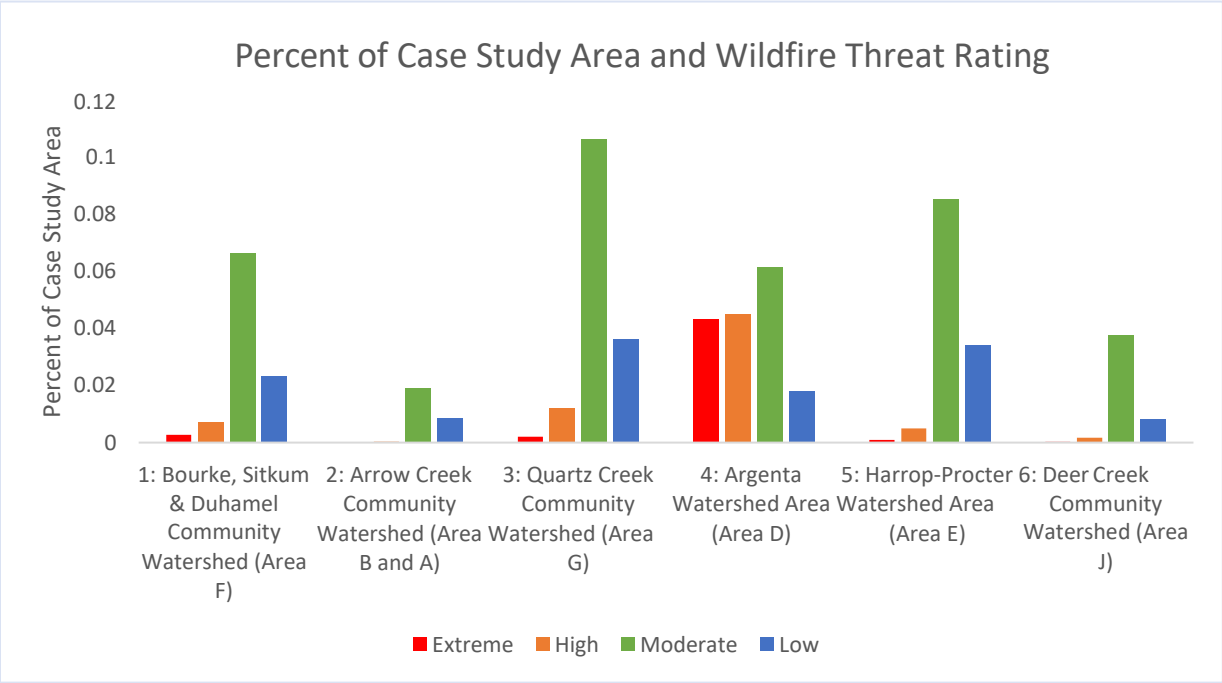

Figure 4: Percentage of case study area at wildfire risk. Sources: Community Wildfire Protection Planning Program (RDCK), Case Study Area Boundaries (RDCK).

Task 3: Summary of Best Practices and Lessons Learned in Other Jurisdictions

In recent years, several local governments and community groups in BC have recognized gaps in watershed management and taken action to build local capacity. These organizations have worked collaboratively with local, regional, and provincial partners to develop watershed protection initiatives that support community health and safety, environmental wellbeing, and economic sustainability.

To support the RDCK in understanding its potential role in watershed management, a review of precedents, best practices, and lessons learned in other jurisdictions was completed.

This research involved an investigation of the:

- steps involved in establishing the initiative,
- approach to governance and stakeholder engagement,
- ongoing resource needs,
- activities and outcomes, and
- lessons learned.

As requested, this work focused on the following organizations:

- Fraser Basin Council
- Regional District of Kootenay Boundary (Integrated Watershed Service for the Kettle Watershed)
- Cowichan Valley Regional District (Drinking Water and Watershed Protection Service)
- Cowichan Watershed Board
- Shawnigan Basin Authority
- Regional District of Nanaimo (Drinking Water and Watershed Protection Service)
- Nicola Basin initiatives (including the Nicola Community Watershed Round Table, Nicola Basin Collaborative, and the Nicola Watershed Pilot)

The research began with a desktop review of available resources. Then, targeted interviews were conducted with staff (or volunteer) program leaders, to address any remaining questions and obtain input on lessons learned and best practices.

The following section provides a summary of the precedents and lessons learned in each region.

The section is followed by a summary table, Table 9, which provides an overview of the approach in each of these jurisdictions and compares each region to the RDCK context. This comparison considers jurisdiction, type of land ownership (e.g. Crown vs. private), activities in the watersheds, community dynamics, and watershed stresses, etc.

Fraser Basin Council

Overview

The Fraser Basin Council (FBC), established in 1997, is a non-profit organization that works to advance sustainability in the Fraser River watershed and throughout BC. The FBC brings together four orders of government (federal, provincial, local, and First Nations) and members of the private sector and non-profits. The FBC has three main areas of focus:

- healthy water and watershed
- action on climate change and air quality, and
- strong, resilient communities and regions.[47]

Process to Establish

In the 1980s, communities across BC became alarmed at the impact of industrial activity, urbanization, and pollution on salmon stocks in the Fraser River. In 1990, the Government of Canada identified the need for action in the Fraser Basin and initiated the Fraser River Action Plan – a cooperative, multi-organizational approach to restoring the watershed.

In 1992, the Fraser Basin Management Board (FBMB) was created to address some of the river management issues identified in the Fraser River Action Plan. The FBMB included representatives from the federal, provincial, municipal, First Nations governments, as well as the private and non-profit sector. The FBMB developed a strategic plan for the social, economic and environmental health of the Basin, which became the Fraser Basin Council's Charter for Sustainability. This Charter set a framework for the FBC.

Governance and Stakeholder Engagement

The Fraser Basin Council has 38 directors: 37 directors representing different orders of government, the private sector, and civil society, plus an independent chair.

Decisions are made by consensus. Of the 38 directors, 22 are from the four orders of government:[48]

- three from the federal government
- three from provincial government
- one from each of the eight regional districts in the Fraser Basin
- one from each of the Basin's eight major First Nations language groups

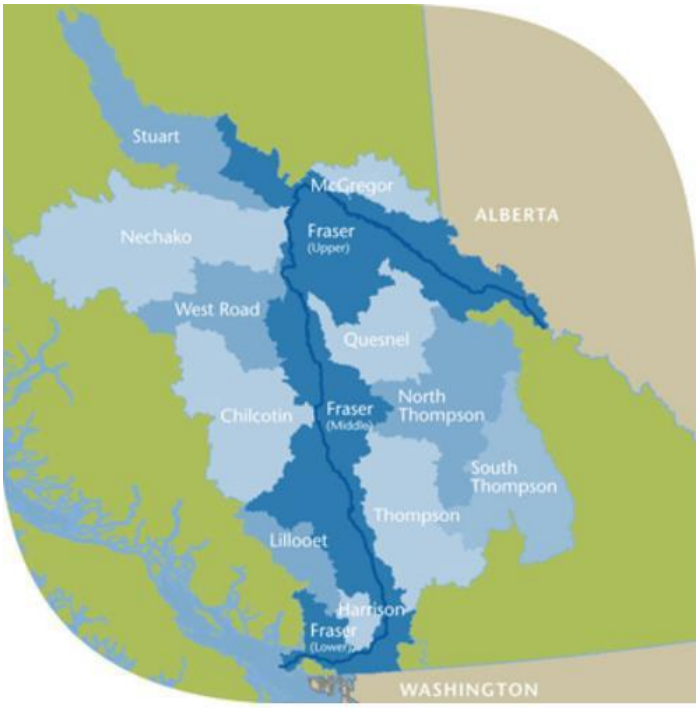

Figure 5: Major watersheds of the Fraser Basin. Source: https://www.fraserbasin.bc.ca/basin_watersheds.html

[47] https://www.fraserbasin.bc.ca/about_fraser_basin.html
[48] https://www.fraserbasin.bc.ca/about_board-committees.html

The remaining 16 Directors are non-governmental appointees of the Council:

- two from each of the Basin's five geographic regions (10 Directors in total), representing diverse sectors
- three Basin-wide Directors to reflect the three dimensions of sustainability (economic, social and environmental)
- a Director from among youth in the Basin
- a Director with experience in the finance sector
- a Chairperson.

The FBC has a constitution and bylaws as a registered Not for Profit under the BC Societies Act. A Terms of Reference is not available for the FBC.[50]

Decision-Making Support

The FBC Board is supported by a team of 26 full and part-time staff in six FBC offices across the Fraser Basin. There are also 13 committees which support the Board of Directors:[49]

- Operations Committee
- Governance Committee
- Finance Committee
- Youth Advisory Committee
- Climate Change and Air Quality Committee
- Watersheds and Water Resources Committee
- Sustainability Committee
- Regional Committees: Greater Vancouver-Sea to Sky, Fraser Valley, Thompson, Cariboo-Chilcotin, Upper Fraser

These committees are composed primarily of Directors, with additional members as needed. They are supported by two to three staff.

Resource Needs

The FBC budget changes annually, because most of the funding is project-based. In the current fiscal year, the budget is approximately $1 million. Over the past 10 years, the organization's budget has been $5-$6 million/year.[50]

The organization is funded by a mix of traditional grants such as funding from the Real Estate Foundation of BC and fee for service work on a contract basis or in response to a Request for Proposal

CONTEXT

Area of Interest

The Province of BC with a focus on the Fraser River Basin (BC's largest river, stretching 1400km from the Rockies to the Salish Sea)

Population

Over 3 million

Area

Approximately 240,000 km^2

Community Character

Very diverse socially and economically: includes the City and metropolitan area of Vancouver, as well as large, rural portions of northern BC

Land Ownership

Diverse: owned privately (locally and internationally) and by four orders of government: Federal, Provincial, Local, and First Nations

Activities in Watersheds

Dense urbanization, rural development, industrial-commercial-institutional, forestry, agriculture, recreation, power production, mining, power generation, transportation, etc.

Primary Concerns

Currently: sustainability. Initially, concerns about loss of salmon stocks, groundwater contamination, drought

[49] https://www.fraserbasin.bc.ca/about_committees.html
[50] Litke, Steve. Senior Program Manager, Watersheds and Water Resources, Fraser Basin Council. In discussion with author, October 8, 2019.

(RFP). In some cases, the FBC holds service agreements or contribution agreements.

For some projects, funds are pooled from multiple project partners. For example, the FBC is working on a regional flood strategy and received funding for this work from over 40 different funding partners, including local governments. The FBC also accesses government funding programs such as the National Disaster Mitigation program. There is no consistent tax-based funding and as a non-governmental organization, the FBC has no authority to requisition taxes.[50]

Activities and Outcomes

The FBC partners with, and works for, governments, communities and the private sector on several initiatives to support climate change and air quality, watersheds and water resources, and community and regional sustainability.

Current activities include:[51]

- Community sustainability planning and climate change adaptation projects
- Flood hazard management and interface fire planning
- Support for watershed management planning processes
- Clean air initiatives
- Other projects including an aquaculture study, a recreation management study, etc.[52]
- Partnership in programs including: the BuySmart Network, Salmon-Safe BC, Plug in BC, etc.

Past actions include: [53]

- Collaboration in the remediation of the former Britannia Mine site
- Partnership to improve Fraser Basin salmon habitat, stock management, fisheries information and monitoring, with a high level of Aboriginal engagement
- BC's first council on invasive plants
- Four Sustainability Snapshot indicators reports, several regional sustainability reports.

Lessons Learned

The following lessons learned were shared to support the RDCK:[28]

- Core operational funding is important. There is a hesitance to raise taxes, but when people can see it being well-invested back into the community, it can make sense.
- The unique circumstances of each community are important when developing watershed protection programs.

[51] https://www.fraserbasin.bc.ca/services.html
[52] https://www.fraserbasin.bc.ca/gvss_programs.html
[53] https://www.fraserbasin.bc.ca/_Library/Resources_Image/fbc_annual_highlights_2017-2018_web.pdf

Regional District of Kootenay Boundary

Overview

In 2018, the Regional District of Kootenay Boundary (RDKB) established the Boundary Integrated Watershed Service. The service area covers a portion of the RDKB including: all areas of Electoral Areas C/Christina Lake, D/Rural Grand Forks, E/West Boundary, the City of Grand Forks, the City of Greenwood and the Village of Midway.

The purpose of this service is to provide long-term funding to coordinate management of the RDKB's rivers, streams, lakes and aquifers and support the implementation of the Kettle River Watershed Management Plan.

The goals of the service include:

- Increase community understanding, support and capacity for stewardship of our watersheds.
- Encourage land use decisions that protect water quality.
- Protect and enhance shorelines to help prevent erosion and improve fish and wildlife habitat.
- Manage limited water resources during periods of drought.[54]

The service pays for a full time RDKB employee to coordinate and support activities that sustain Boundary watersheds.[55]

Process to Establish

Although the service area was initiated in 2018, the RDKB has been involved in the Kettle River watershed for over 10 years.[56]

In 2010, the RDKB developed a Terms of Reference for the Kettle River Watershed Management Plan. This work was triggered by a number of pressures on the watershed, including a proposed run of river project above Christina Lake and golf courses proposed at the Big White ski resort. The community was concerned that the dam would impact recreation and the scenic quality of the area. They were also concerned that the golf courses would impact the water supply (however further study found that the water system would take water from the freshet and store in a reservoir, so there were limited/no impacts on the local water supply).

There had also been several droughts and fish kills, followed by flooding. These extreme events demonstrated the reactiveness of the watershed and led people to see the need for better management.[57]

CONTEXT

Area of Interest

The Kettle River watershed, which covers a portion of the Regional District: RDKB Electoral Areas C/Christina Lake, D/Rural Grand Forks, E/West Boundary and all parts of the City of Grand Forks, the City of Greenwood and the Village of Midway

Population

Approximately 12,000

Area

Approximately 9,800km^2

Community Character

Rural residential and small-town; many work in agriculture, forestry, and recreation

Land Ownership

Privately owned land in lowlands and Crown owned in uplands

Activities in Watersheds

Forestry, agriculture, recreation, etc.

Primary Concerns

Flooding, drought, high water use and broad, interacting cumulative impacts from resource development, urban and rural development, industry, agriculture, and recreation activities

[54] https://www.rdkb.com/LinkClick.aspx?fileticket=sVh2iQGDJEk%3D&tabid=657
[55] https://www.rdkb.com/LinkClick.aspx?fileticket=j2Ug6sm0AXo%3D&tabid=660
[56] https://www.rdkb.com/HotTopics/KettleRiverWatershedManagementPlan.aspx
[57] Dean, Donna. Manager of Planning and Development, Regional District of Kootenay Boundary. In discussion with author, October 18, 2019.

After developing the Terms of Reference, the RDKB worked with a consultant to develop a State of the Watershed Report and the Kettle River Watershed Management Plan (completed late 2014). The plan was largely funded using gas tax money. In the past, local governments have been able to be quite flexible with their use of gas tax funding, so the RDKB entered into a three-year contract with a consultant to develop and then implement the watershed plan. It was assumed that the gas tax funding would act as core funding, to start, and then the staff person could apply for different funding sources.[57]

However, the consultant position wasn't full-time and eventually the individual left the company for a full-time position. Another person was brought on to do the work, but traction was lost. Over the next year there were a lot of meetings, but only a few projects were tackled. A drought management plan was completed and then the core funding was exhausted.[57]

Then in 2018, the RDKB experienced serious flooding prior to an election and the RDKB Board decided that this was the time to take the proposed service area to referendum. For years the Board had recognized the need for sustainable funding but was uncertain whether a referendum would be successful. The 2018 flood was not only the most significant flooding event in most people's memory, but it was also one of the driest years for the river. The combined flooding and drought increased the community understanding of the importance of watershed management, and with only a few months to election, the Board decided this was the best opportunity for a referendum.[57]

The lead up to the referendum was very short. The conversation about the referendum started in June 2018 and then the referendum was in October.[57]

Board members were very clear that they did not want the requisition to be more than $5 per $100,000 of taxable property. It was decided to focus the service area on the electoral areas and municipalities on the Boundary side of the Regional District in the Kettle River watershed. (The service area includes the Kettle River watershed. Only a small portion of one of the electoral areas is outside the watershed boundary.) This was because the other side of the RDKB (Kootenay) was quite different and simply didn't have the same susceptibility to issues and the same concerns.[57]

Prior to the election, staff made presentations to the community and sent out a newsletter.

When the community went to referendum, they voted 53% to 47% to support the service.

Figure 6: Kettle River (Source: Kettle River Watershed Management Plan)

Staff noted that the results were difficult to predict. Some areas where support was uncertain voted fully 'yes' and other areas where support was expected were split.

Staff noted that it can be difficult to predict a community response to a referendum, mentioning that in the Shuswap, a referendum to create a service area on the lake to protect water quality failed, but then a service area to support boating safety passed.[57]

> *"[The service area] provides you with the ability to work with other governments.*
>
> *We hope to support decision-making at the provincial level.*
>
> *…We can say 'This is what we're hearing is one of the big issues right now. …or 'We're definitely seeing a change in this one area that we haven't seen before…'*
>
> *We want to be able to provide scientific information support decision-making'*
>
> ***Kristina Anderson, RDKB Watershed Planner***

Governance and Stakeholder Engagement

The RDKB put a great deal of thought and time into developing an advising body. The Integrated Watershed Service is now guided by the Kettle River Watershed Advisory Council that reports to the RDKB Board.[57]

Prior to the creation of the Boundary Integrated Watershed Service Area, the Kettle River work was guided by the Kettle River Watershed Committee, which was a committee of the RDKB Board of Directors. This Committee provided guidance to the 'Kettle River Watershed Authority'. The Committee was composed of RDKB Directors, watershed residents, community groups, and Improvement District representatives.[57]

However, with the new local government service area, staff were challenged to clearly define and name the program, organizations, and the governance structure. It became clear that the term 'Authority' should be modified, as it suggested an authority that did not legally exist.

In the time since the KRWA had been initiated, the 'Salt Spring Island Water Protection Authority' had since re-named their group as the 'Salt Spring Island Water Protection Alliance' to recognize that the group did not have authority on its own, but rather was a group of people who represented different authorities.

RDKB staff also recognized that what was called the 'Kettle River Watershed Authority' was actually not an organization or entity, but rather represented the work of a consultant.

There were several discussions about potential delegation of authority and it became clear that delegation of local government or provincial authority was unlikely and potentially unwise.[57]

After significant research and consideration, it was decided that the Kettle River Watershed Advisory Council would be a committee that provides recommendations to another Board Committee where the RDKB Board members sit. This is similar to what is done at the Regional District of Nanaimo. It was also decided that Directors would not sit on the Advisory Council as there were already places for Board Members to voice their agenda and there was an interest in the Council representing the 'ground-level' to the greatest degree possible.[57]

The current Kettle River Watershed Advisory Council is a group of stakeholders that represent a wide diversity of social, economic and environmental interests in the watershed. The Council is made up of representatives from agriculture, forestry, industry, mining, stewardship groups, tourism and recreation, water purveyors, First Nations, other levels of government, and stakeholders with an interest or expertise in local watersheds.[57]

The group is divided into voting members, who are watershed stakeholders, and non-voting members, who represent other orders of government such as the Province and First Nations. Directors are welcome to attend the Council meetings.[57] The Terms of Reference for this Advisory Council are included in Appendix B.

Decision-Making Support

RDKB staff provide input and guidance to the Advisory Council. Non-voting members from other levels of government support decision-making as well (see Terms of Reference).

Resource Needs

The service area budget is a maximum of $160,000.[54] The following is the proposed budget for the next five years:

- 2019: 150,013
- 2020: 149,490
- 2021: 152,017
- 2022: 156,594
- 2023: 157,223

Table 6 outlines predicted year one expenses. Table 7 shows the tax requisition amounts from the electoral areas.[58]

Expense	2019 Budget ($)
Salaries and Benefits	110,307
Travel Expense	3,000
Public Participation Program	4,000
Administration	1,406
Library and Research	600
Contracts	16,000
Office Expenses	10,700
Vehicle Operation	3,000
Contingencies	1,000
TOTAL	**150,013**

Table 6: RDKB Anticipated Year One Expenses of the Integrated Watershed Service (personal communications, Donna Dean, RDKB, October 18, 2019)

Local Government	Taxes ($)
Electoral Area 'C'/Christina Lake	33,973
Electoral Area 'D'/Rural Grand Forks	23,322
Electoral Area 'E'/West Boundary	53,760
Grand Forks	30,382
Greenwood	3,348
Midway	5,227
TOTAL	**150,013**

Table 7: RDKB Tax Requisition Amounts for Integrated Watershed Service (personal communications, Donna Dean, RDKB, October 18, 2019)

Activities and Outcomes

The service area provides funds for a full-time RDKB staff person who will coordinate projects that benefit Boundary watersheds.

The role of the staff person is to:

- Coordinate projects that will benefit all Boundary watersheds including the West Kettle and Kettle Rivers; Boundary Creek; the Granby River; Christina Lake and portions of Electoral Area 'E'/West Boundary in the Okanagan watershed. This work will focus on action items in the management plan.
- Assist in projects pertaining to drought, flood and other natural hazards

[58] Presentation to the Big White Community, provided by Donna Dean (October 18, 2019)

- Engage and collaborate with stewardship organizations, other stakeholders and First Nations to conduct research and report on Boundary watersheds
- Communicate and coordinate with various levels of government involved with water use and management
- Provide input to local governments to help ensure that policy aligns with watershed management plans
- Define priorities, economic feasibility, responsibility, necessary support legislation and required action related to Boundary watersheds
- Present proposals and recommendations to appropriate agencies, including but not limited to First Nations, municipalities or governments, according to jurisdiction and responsibility
- Participate in surveys, investigations, engagement processes and projects on behalf of municipalities, or electoral areas.[59]

In the RDKB all service areas are guided by a work plan. The work plan for the service area is created in collaboration with the Advisory Committee.[59]

At the time this document was written, the staff person had been in the role for only three months and could not yet report on program outcomes.

It is anticipated that RDKB staff will support MFLNRORD and other agencies involved in decision-making. The Advisory Council and staff will work, in a coordinated and collaborative way, to identify watershed priorities and obtain scientific information needed to support decisions at the regional and potentially, provincial level.[59]

"…Now that we have this Council established, provincial forestry representatives want to tag onto meetings because of the representation at the table. They are able to present forest development plans – and use it as a sounding board as part of their public consultation.

…For five years we didn't get formal referrals. …It took a while for the relationship to evolve but now they're referring to us.

The community initially - and still very much still are - placing the blame for flooding on forestry, but now there is a cumulative effects study that is being done by the Province and we are getting scientific facts on the impacts.

We're making some headway"

Donna Dean, RDKB Manager of Planning and Development

Lessons Learned

- It is more helpful to focus on 'supporting' Provincial decision-making rather than 'influencing'.
- Provincial government and resource users are working with the Advisory Council because it provides a respectful and collaborative forum for engaging with stakeholders.
- Relationship-building takes time but brings better engagement with decision-makers and resource users.
- It is helpful to focus on providing scientific information to support decision-making (rather than opinion/assumptions).
- Remote meetings (e.g. video conferencing) can help encourage participation from other levels of government (e.g. First Nations and Provincial staff).
- Transitioning from a community-led to regional district-led initiative takes time.
- The RDKB is happy to share resources (e.g. community presentations, work plan, etc.)

[59] Anderson, Kristina. Watershed Planner, Regional District of Kootenay Boundary. In discussion with author, October 16, 2019.

Cowichan Valley Regional District

Overview

In 2018 the Cowichan Valley Regional District (CVRD) established a Drinking Water and Watershed Protection (DWWP) service that covers the entire regional district.

The service area is the most recent of several watershed management and governance initiatives in the area. The Cowichan Watershed Board and Shawnigan Basin Authority are also operating within the jurisdictional boundaries of the CVRD and are described separately in the following sections.

The CVRD DWWP service was established to:[62]

- Increase the level of knowledge about drinking water sources to support the long-term sustainability of water resources.
- Support better collaboration among various water providers, users, and stewards.
- Develop watershed management plans that will characterize risks to water supply and water quality.
- Provide information for land-use planning and determining urban growth, as well as information on infrastructure and water utility needs across the region.
- Prioritize actions to address risks, such as flood protection, drought response, improving water conservation and stewardship, or emergency water supply plans.
- Provide ongoing, sustainable support for critical management and partnership groups, such as the Cowichan Watershed Board and local stewardship organizations.

Process to Establish

For many years, drinking water and watershed protection have been priority issues for the community, as well as staff and Board of the CVRD.

Fifteen years ago, the Cowichan Stewardship Round Table initiated the development of the Cowichan Basin Water Management plan. This eventually led to the development of the Cowichan Watershed Board - an innovative co-governance arrangement between the Cowichan Tribes and the CVRD (described in further detail in the following section).

Over the past several years, the CVRD has worked collaboratively with stakeholders, First Nations, neighboring Regional Districts, and provincial and federal government on a range of watershed management initiatives. Recently, the CVRD decided to pursue

CONTEXT

Area of Interest

The whole Cowichan Valley Regional District.

Population

Over 80,000

Area

Approximately 3,473 km^2

Community Character

Small towns, one small city, rural residential. Many employed in agriculture and forestry. Several First Nations reserves.

Land Ownership

Privately owned land in lowlands, private management forest land in uplands (as a result of the Esquimalt and Nanaimo Railway Company Land Grant, in which a large amount of Crown land was granted to private ownership)

Activities in Watersheds

Land development and urbanization, forestry, agriculture, quarrying, industrial use, recreation, etc.

Primary Concerns

Significant low flows, flooding, fish and aquatic health impacts, reduced groundwater levels, groundwater contamination risk, climate impacts (reduced snow packs, flashier weather, long summer droughts)

sustainable funding and the establishment of a watershed protection service.

To establish the DWWP program, the CVRD took several steps. First, staff led a community engagement exercise, asking the community to identify their concerns related to watershed health and suggest potential roles and actions of a drinking water and watershed protection service. This approach was taken in order to obtain unbiased community input and show that decisions had not been made prior to community consultation. While many residents appreciated this approach, others commented that they would have preferred the CVRD did some initial planning work prior to engaging the community.[60]

In this phase, staff also received feedback that the DWWP activities may be better delivered through existing functions. It was suggested that delivering activities through existing functions may be more cross functional, better coordinated, and allow the CVRD to more effectively use the dollars at their disposal.

To address this suggestion, staff conducted an analysis and identified the 60 different functions (e.g. liquid waste management planning, land use planning) that were related to drinking water and watershed protection. They then identified what a program would look like if it was delivered under these existing functions (using existing requisitions).

However, when they presented this approach, some of the staff responsible for managing the existing functions did not think it was reasonable to assume that they could take on the tasks of an additional service, without additional funding. As a result, the CVRD decided it would be most appropriate to address the need for drinking water and watershed protection through a separate service.[60]

There was a great deal of discussion around the cost of the DWWP program. Initially staff suggested the program would cost $1.2 million/year. However, in the end, the budget was chosen (much like in the RDKB) based on a value that the Board felt comfortable requesting to requisition. In the CVRD this value was $750,000.

Leading up to the referendum CVRD staff attended several public meetings and developed a video explaining the need for the program.[61] Stewardship groups shared this video and encouraged the community to vote 'yes' in the referendum. The cost of the public engagement and planning prior to referendum was approximately $100,000, plus staff time (reimbursed from the program in its first year).[60]

On October 20, 2018 a referendum for electorate support for the service was held and passed with 65% approval (12,890 to 6,667). On November 14, 2018 CVRD Bylaw No. 4202 – Drinking Water and Watershed Protection Service Establishment Bylaw was officially adopted by the CVRD.[62]

Governance and Stakeholder Engagement

The CVRD has initiated a planning process and is working with an advisory committee and consultant to develop a 10-year plan for the program. That advisory committee will dissolve in December 2019 and will make recommendations regarding a Terms of Reference for a new advisory committee that will guide the program. A final decision about the advisory committee will be made by the Board. The draft Terms of Reference is not available at this time.[60]

---

[60] Miller, Kate. Manager, Environmental Services Division, Cowichan Valley Regional District. In discussion with author, October 15, 2019.

[61] https://cowichanwatershedboard.ca/content/drinking-water-and-watershed-protection-service/

[62] https://poliswaterproject.org/files/2019/01/CVRD_Dispatch_FINAL_updated-1.pdf

The CVRD is concurrently working with the Cowichan Tribes on several watershed protection projects. Staff provided a Memorandum of Understanding between the Cowichan Tribes and the CVRD, City of Duncan, and District of North Cowichan (link included in Appendix B), as an example of a partnership agreement between First Nations and a local government for watershed management.[60]

Partnerships

The relationship between the DWWP and organizations such as the CWB and the SBA is still being determined. The CVRD is currently focusing on the development of a work plan and strategy and will then look at how this aligns with the existing organizations.

The funding for the DWWP is not intended to pay for the core operating costs or administration of stewardship group. Instead, the CVRD will need to work with the community and stakeholders to identify goals and strategies and then identify how they fit together. For example, some groups are currently monitoring water quality. The CVRD could collaborate in monitoring if it met a strategic priority, as identified by the advisory committee and Board, but not simply to support data collection. In the case of monitoring, the CVRD would work with the advisory committee and Board to identify strategic priorities. Staff would then work with the MOE and/or MFLNRORD to identify priority parameters, monitoring sites, and a monitoring protocol. Then the CVRD may work collaboratively with groups that are interested in partnership to fund water quality monitoring, based on what is needed.[60]

Resource Needs

The DWWP Service Establishment Bylaw allows the CVRD to requisition up to the greater of $750,000 or $0.045 per $1000 of taxable value within the service area. The annual budgets will be established by the CVRD Board based on the annual work plans and long-term strategy.[62]

Activities and Outcomes

The CVRD is in the process of developing a plan to guide the program. It is intended that key actions of the program include: [63]

a) Increasing the level of knowledge regarding drinking water sources to support the long-term sustainability of the water resource;
b) Coordinating the efforts of provincial and local governments and non-governmental organizations with respect to drinking water source protection;
c) Increasing the level of public awareness regarding DWWP requirements and strategies;
d) Obtaining and holding water licenses;
e) Promoting and undertaking water conservation initiatives and programs;
f) Developing and implementing water management plans;

[63] https://www.cvrd.bc.ca/DocumentCenter/View/90699/4202

g) Entering into agreements as needed to accomplish the objectives of this service;
h) Assessing needs and planning for infrastructure and natural system improvements to maintain or enhance water quality or water supply; and
i) Providing grants and financial support to entities approved by the Board for the purpose of water and watershed protection.

The CVRD is working with First Nations on several separate projects as outlined in MOU with the Nations (link included in Appendix B). This work includes collaboration in the development of water quality objectives that consider both scientific knowledge and traditional ecological knowledge.[60]

"No single government entity can do this alone. The Province wants to do the best job they can, but they can't do it without local resources.

There is real potential to take a two-handed approach.

If the Province is able to provide the guidance around their requirements, and local governments provides the resources, then we can ask the Province to stand with us in establishing regulatory parameters."

Kate Miller, Manager, Environmental Services Division, Cowichan Valley Regional District

Relationship with Provincial and Regional Decision-Makers

Through the DWWP, the CVRD is interested in working collaboratively with the Province to support decision-making at the regional and provincial level.

The program can help local government decision-makers better understand the water resource and the land use implications. It can also help provincial decision-makers by sharing information on the resource and communicating community needs.[60] This tie to provincial decision-making is important because, due to limited resourcing, provincial decision-making is often predicated on limited information. For example, when assessing water licenses applications, the Province may not understand how much water is available. However, the Province *does* look to local government zoning to inform their response to water license applications. In some areas of the CVRD, the zoning bylaw supports 60 more years of development, even though there are already signs that the current use is unsustainable. More information is needed at both provincial and regional levels to support decision-making and avoid real water security issues at buildout.[60]

The CVRD is also interested in working with the Province to protect water quality. The CVRD would like to collaborate with the Province to establish Water Quality Objectives that can be used in development standards. While these objectives are intended to be used to ensure developers adhere to water quality guidelines on private property, they may ultimately be transferrable to other areas (e.g. forestry).[60]

The Province is working with the CVRD and is making resources available to support collaboration.[60]

Lessons Learned

- It was helpful to focus on water protection, rather than water governance. Currently, there are limited opportunities for local involvement in water governance and many community members may not even see that as a role that they want their local government to play. However, most people in the area can get behind the idea of protecting water, as they recognize the importance of water and see the effects of climate change and development on drinking water and watershed health. Many

residents also see water protection and information gathering as a more realistic role for local governments to play.[64]

- Its very important to be clear about what a program is and is not able to do. Many assumed that the program would be interested in regulating or metering their private domestic well and were afraid of that. It is important to let people know what the intent of the program is and is not.[64]
- Having sustainable funding attracts more funding from other levels of government.[64]
- Sustainable funding is important because with climate change, water issues are going to be ongoing and escalating.[64]
- It can be challenging to transition from a community-led to a local government-led approach.[60]

[64] Carruthers, Brian. Chief Administrative Officer, CVRD. In presentation at the Sustainable Funding for Watershed Resilience Workshop (delivered through the Sustainable Funding for Watershed Governance Initiative), September 23, 2019.

Cowichan Watershed Board

Overview

The Cowichan Watershed Board is a local governance entity that was established to address a recommendation in the Cowichan Basin Water Management Plan (completed in 2007). The goal of the Board is to provide leadership for sustainable water management in the Cowichan and Koksilah watersheds, ancestral home of the Quw'utsun First Nation.

The Board represents a unique partnership between First Nations and local government as the Board is co-chaired by the Chief of Cowichan Tribes First Nation, and the Chair of the Cowichan Valley Regional District, with 10-12 other members appointed jointly by those partners. It also includes nominees from the Federal and Provincial Governments.[65] Through this model, Cowichan Tribes and the CVRD work together to advance whole-of-watershed health, demonstrating a commitment to moving down the path of reconciliation.

Process to Establish

The collaborative efforts in the Cowichan began in 2003, when during a summer drought, river flows reached critically low levels and lower portions of the river became impassable, so that spawning salmon needed to be trucked upstream.

This prompted the establishment of the Cowichan Stewardship Round Table and then the initiation of the Cowichan Basin Water Management Plan, commissioned by the CVRD, Cowichan Tribes, provincial and federal government, Catalyst paper (a large extractor) and the Pacific Salmon Commission. The planning process involved the establishment of a water management forum, and a public outreach strategy. This process involved the identification of issues, a vision, and goals.[66]

The Plan was completed in 2007. This comprehensive plan included six goals, 23 objectives, and 89 actions concerning water conservation, water supply management, water quality, habitat and biodiversity, flood management, governance, and communications.[67]

However, by 2009, there had been limited implementation of the Plan. It became clear that local leadership was required for the plan was to be effectively implemented. In 2009, the CVRD contracted a consultant to evaluate governance options, recommend a watershed governance model, and coordinate its implementation.[68]

In 2010, the CWB was established to guide the implementation of the plan. For the first four years, the CWB had a limited operating budget provided by the core partners, CVRD and Cowichan Tribes, and no additional project funding. During that time, the CWB focused on developing an understanding of the plan, building relationships (internally and externally), assembling foundational information, and developing processes for management and governance of the watershed. A Technical Advisory Committee (TAC) was also created, made up of government, industry, stewardship partners, and external

[65] http://cowichanwatershedboard.org/
[66] https://poliswaterproject.org/files/2018/04/Watersheds-2018-Workbook-and-Resource-Package.pdf
[67] http://www.cowichanwatershedboard.ca/sites/default/files/CowichanBasinWaterManagementPlan-March2007.pdf
[68] https://poliswaterproject.org/files/2017/06/CWBCaseStudy_WebFINAL_0.pdf

expertise, as needed. Part of the relationship-building included time invested in developing a common understanding amongst the CWB and its TAC about the watershed and issues.[68]

From 2011-2014, the Board worked to develop easy-to-understand targets that can be used to assess progress towards several of the management plan actions. They also worked with stewardship groups and external organizations to increase the understanding of the watershed to support decision-making.[69]

In 2013, the Cowichan Watershed Society (CWS) was incorporated to become a supporting financial and operating arm of the CWB. It is made up of a subset of the CWB members and reviews and, as appropriate, implements CWB recommendations.[68] This was done to support potential delegation of authority from senior and local government, clarify financial management, and increase fundraising opportunities.

Governance and Stakeholder Engagement

The Board is guided by a governance manual and the Board is composed of: [70]

- Three members appointed by the CVRD from the CVRD Board, including one member who will serve as Co-Chair of the Board.
- Three members appointed by Cowichan Tribes from among the chief and Councillors of Cowichan Tribes, including one member who will serve as Co-Chair of the Board.
- One or two members may be recommended by the federal government.
- One or two members may be recommended by the provincial government.
- The CVRD and Cowichan Tribes jointly appoint up to six members-at-large from the community to provide specific local watershed knowledge. The at-large appointments consider public representation and at least half of the Board members are publicly elected representatives of CVRD, Cowichan Tribes, or local municipalities.

Provincial nominees: The Province was invited to assign two members to sit on the Board but declined over concerns of potential conflict of interest. Instead, MOE nominates two members with expertise in areas of provincial jurisdiction (public health, groundwater) and these individuals are then appointed by the co-Chairs to join the Board.

Federal nominees: The DFO nominates a senior staff representative to sit on the Board.

Decision-Making Support

The CWB is assisted in its work by a TAC and Five Working Groups.[71] The TAC currently includes the following member organizations: Catalyst Paper (pulp mill), Cowichan Economic Development Commission - Tourism Cowichan, Cowichan Lake and River Stewardship Society Committee, Cowichan Tribes, Cowichan Valley Naturalists' Society, CVRD, DFO, Living Rivers Trust, MOA, MOE, FLNRORD, Ministry of Healthy Living and Sport (MHLS), BC MOTI, Mosiac Forest Management, B.C. Parks, District of North Cowichan, BC Conservation Foundation, Cowichan Stewardship Roundtable, Private Forest Landowners Association (PFLA), Quamichan Lake Stewardship Committee (Quamichan Stewards), Cowichan Land Trust, Somenos Marsh Wildlife Society (SMWS), and Island Health.

[69] https://cowichanwatershedboard.ca/cowichan-watershed-board-targets/
[70] http://cowichanwatershedboard.org/wp-content/uploads/2010/08/CWB-Gov-Manual-Version3-24Sep2018.pdf
[71] http://cowichanwatershedboard.org/the-cowichan-watershed-board-2/

Resource Needs

The CWB and CWS has an operating budget of approximately $70,000, which comes from Cowichan Tribes and the CVRD, to cover basic administration, meeting expenses, a website, and 2 part-time (2 days/week) staff.[72] The CWB does not maintain an office. It relies on grant funding for most projects, and on partnering organizations and volunteers to meet many of its objectives.[72]

Activities and Outcomes

The CWB plays an advisory role by actively working with and encouraging regulatory agencies to base their water management decisions on Board recommendations, and by educating decision-makers through CWB presentations and discussions. This is done through both formal and informal means, including letters or requests sent to decision-makers or government staff or notifications sent to the local government, Cowichan Tribes, or provincial government. The CWB also communicates through Board members who belong to key agencies, such as the DFO.[72]

CWB staff (and Board members or partners, as appropriate) have quarterly meetings with senior West Coast Region MFLNRORD staff.[72] MFLNRORD staff have attended CWB meetings to provide presentations. This engagement with Provincial staff may have played a role in a shift in resources at the provincial level to address low water flows in the Koksilah River. Although the CWB has no official advisory role, the CWB was able to provide provincial staff with first-hand observation and advice in terms of where they thought attention was needed.[72]

Lessons Learned

A POLIS review of the CWB found the following:[68]

- An initial period of respectful relationship and trust building is important.
- A strong planning process builds goodwill among stakeholders, particularly when they are viewed as valuable and consulted.
- Whole-of-Watershed thinking helps establish common sets of priorities, encourages respect and relationship-building, and supports partnership development.
- Partnerships are critical, including relationships with First Nations, stakeholders, federal, provincial partners, and stewardship groups.
- A consensus approach to decision-making takes time but makes decisions more durable.

The Value of Consensus

"When deciding on any issue, the CWB works to achieve consensus. For routine, procedural, and minor decisions, "general consensus" decision-making (i.e. no strong objections) is used to efficiently move forward in meetings. When decisions are more substantive or complex, time is taken for members to learn about the issue and work together to develop a deep and common understanding so that consensus can be better reached. Because it is consistent with their worldview, the Cowichan Tribes members were immediately comfortable with this approach; the other members of the Board have also become strong supporters, and have noted that initiatives that are supported by a narrow majority do not carry the shared wisdom of the group and may not be durable" [68]

Rodger Hunter, Retired Coordinator, Cowichan Watershed Board

[72] Thompson, Jill. Project Coordinator, Cowichan Watershed Board. In discussion with author, October 11, 2019.

Shawnigan Basin Authority

Overview

The Shawnigan Basin Authority (SBA) was developed to provide the Shawnigan public with a civic mechanism for gaining the attention of government agencies with legislated responsibilities.[73]

The Authority consolidates three organizations:

- Shawnigan Watershed Round Table: focused on stakeholder engagement and education
- Shawnigan Basin Society: responsible for managing and accounting for funds, implementing projects, and coordinating watershed initiatives
- Ecological Design Panel: a group of land and resource experts that provide scientific and technical advice to the Round Table, the Basin Society, government agencies, and other interested parties.

The objectives of the SBA are to:

- Create a watershed master plan
- Identify and implement watershed security projects
- Coordinate the efforts of the many government agencies with watershed responsibilities and to ensure that the concerns of the public are respected in all watershed decisions.[73]

Process to Establish

In 2012, residents became worried about the cumulative impacts of watershed activities on water quality and quantity in the basin. The community was particularly concerned by the lack of coordination between the different government agencies regulating and overseeing these development and activities.[74]

In 2013, with the support of the CVRD Area Director, the Shawnigan Basin Authority (SBA) was established to coordinate the permitting and regulatory activities of the many public agencies and to work towards reducing cumulative impacts on the health and productivity of the watershed.

Governance and Stakeholder Engagement

The Shawnigan Basin Society has a Board with two co-chairs: an electoral area representative from the Cowichan Valley Regional District Area B and a representative from the Malahat First Nation (MFN) as co-chairs. The MFN has time and capacity constraints and engages at their discretion.

Board members include:[75]

1. Representative(s) of the MFN appointed by the MFN Council and the Cowichan Tribes appointed by the Cowichan Tribes (the SBS maintains a consultative relationship with Cowichan Tribes due to capacity constraints)

[73] https://www.shawniganbasinsociety.org/basin-authority.html

[74] https://www.shawniganbasinsociety.org/uploads/2/4/3/7/24371226/sbs_business_and_budget_proposal_2019.pdf

[75] https://www.fraserbasin.bc.ca/_Library/Water_BCWF/fbc-bcwf-guidance_for_watershed_governance-june_30-2016.pdf

2. Residents of the Basin appointed by the SBS to represent the interests of citizens of the Shawnigan Lake basin and watershed area, and the residential portion of the Koksilah watershed lying within Area B

3. Members at large, appointed by the Shawnigan Basin Society drawn from the Vancouver Island Region, based upon watershed governance experience and environmental expertise

4. A supporting Basin Technical Advisory Team made up of the Ecological Design Panel, with invited memberships from the CVRD, MOE, Island Health, DFO, MOTI, RCMP, Private Forest Landowners Association (PFLA), MFLNRORD, and the Shawnigan Improvement District

5. Basin Authority Chair appointed by the Shawnigan Basin Society with provision for co-chairs to be appointed by the MFN and the Cowichan Tribes at their discretion.

Decision-Making Support

The decision-making of the SBA is supported by an Ecological Design Panel, which is a group of senior technical experts in land use, water resource management, forestry, ecology, ecosystem restoration, and public health. Their function is to provide objective advice on basin management to the Round Table, the Basin Society, land developers, the Shawnigan Advisory Planning Commission, and the planning staff of the Regional District. The Ecological Design Panel are modeled after architectural design panels established in many urban communities to advise city councils regarding appropriate civic design.[76]

Resource Needs

Through an Alternative Approval Process, the Cowichan Valley Regional District (CVRD) approved $50,000 annually for the Shawnigan Basin Society ($0.0323 per $1000 of net taxable land and improvements within the service area).[75] This was used to support research, planning, community engagement, and administration. It included funding for a part-time Executive Director and Administration Officer.

The organization has since lost its funding and announced a community wide fundraising drive.[78]

Partnerships

The Authority operates independent of the CVRD but is supported by the Area Director and maintains a cooperative link with the CVRD Board and Staff. The SBA also partners with the Cowichan Land Trust Society, the Cowichan Valley Stewardship Coalition, TimberWest, the Shawnigan Research Group, the CVRD's Environmental Staff, the Koksilah Watershed Society, the Shawnigan Bioremediation Society, Ecological Design Panel, and the local Advisory Planning Commission.[77]

Activities and Outcomes

The SBA has attracted several Masters-level research projects to the area, compiled a database of water quality data, completed an Eco-Based Conservation Plan, participated in several foreshore restoration projects, surveyed the extent of milfoil around the lake, and led community engagement activities.[78]

Lessons Learned

- SBA representatives were unavailable for an interview.

[76] https://www.shawniganbasinsociety.org/ecological-design-panel.html
[77] https://www.shawniganbasinsociety.org/uploads/2/4/3/7/24371226/sbs_business_and_budget_proposal_2019.pdf
[78] https://www.shawniganbasinsociety.org/

Regional District of Nanaimo

Overview

In 2008, the Regional District of Nanaimo (RDN) established the Drinking Water & Watershed Protection (DWWP) service – the first watershed protection service within a local government in BC.[79]

The goal of the DWWP Program is to help protect drinking water and watershed health by:

- Ensuring land use decisions reflect the need to protect water resources, and
- Educating and empowering residents to protect water today and for the future.

Process to Establish

The development of the DWWP began in the early 2000's, when residents of the RDN became concerned about the cumulative impacts of land development, climate change and resource extraction on drinking water and watershed health.

Some residents experienced dropping groundwater levels in their wells. Others noticed fewer fish in local streams and yet others became worried about potential impacts of development on drinking water quality and environmental health.

When residents started to ask if the rate of growth and resource use was sustainable, RDN Board members became concerned because they realized that they were being asked to make decisions about development, without fully understanding the impact on existing residents and the environment.

In response to these concerns, RDN staff took the following steps. This work occurred between 2003 and 2008 and was guided by the RDN Board:[80]

Step One: Obtained Board direction to bring forward a preliminary report on the pros and cons of a drinking water protection plan with options and recommendations.

Step Two: Obtained Board approval to move forward with the development of a plan.

CONTEXT

Area of Interest

The whole Regional District.

Population

Over 155,000

Area

Approximately 2,038km^2

Community Character

Rural residential, one large city, one small city, several towns, Gulf Islands, two First Nations reserves. Colonial history of forestry and mining. Currently, most employment is in the service and tourism industry.

Land Ownership

Much of the lowlands is privately owned residential and much of the uplands are private managed forest land uplands

Activities in Watersheds

Land development (primarily suburban) forestry, agriculture, recreation and tourism (several golf courses), mining, transportation, etc.

Primary Concerns

Drought, reduced groundwater levels, groundwater contamination, reduced stream flows, fish and aquatic health impacts

[79] Unreferenced contributions in this section are contributions from the author, who worked as the coordinator of the DWWP Program (2009-2013) and collaborated with Mike Donnelly, RDN staff, the Technical Advisory Committee, provincial staff, and Board members to develop many of the initiatives under the program.

[80] Donnelly, Mike. (Retired) Manager, Water Service, Regional District of Nanaimo. In discussion with author, October 23, 2019.

Step Three: Engaged with First Nations to understand if and how they would like to be involved in the program. This involved the Chair of the RDN meeting with the Chief of the Nanoose First Nation (uncertain if the Chair met with all First Nations).[80] This work happened concurrently with Step Four.

Step Four: Developed the 'Action for Water Plan' along with proposed budget. To develop this plan, in March 2006, the Board established the Drinking Water-Watershed Protection Stewardship Committee (DW-WPS Committee). The goal of this committee was to:

> a) Identify priority action items and initiatives for the long term, sustainable provision of water and the protection of surface and groundwater drinking water sources for RDN Electoral Area residents; and
>
> b) Provide recommendations to the Board regarding key drinking water and watershed protection activities to be considered for the 2007 budget.

Participation on the Committee was sought from a broad representation of key interests in water in the Region.

To develop the Action Plan, the committee followed a five-step process:

1. Issues: Identify, group and categorize issues related to drinking water/watersheds in the Region.
2. Objectives: Formulate Regional objectives for each of the issue categories.
3. Actions: Identify potential actions to address each of the issues and objectives.
4. Rating: Assign a numerical rating to each of the actions, to provide an initial 'prioritization' that the Committee could then work with to produce the next step.
5. Programs and Actions: Create a series of water/watershed-related programs each with specific actions or projects.[81]

The Committee's deliberations were informed by presentations on topics that related directly to the programs and actions that it was creating. A consultant was engaged to facilitate this work. This cost $59,950 in consulting fees and approximately 150-200 hours of staff time.[80]

Step Five: Obtained Board approval of the plan and direction to proceed with public meetings on the concept.

Step Six: Developed and delivered public engagement. This involved going to the public and explaining what it was that the RDN was trying to do with the program. Staff were very open and transparent in this phase and very interested in knowing the community's opinions.

Step Seven: Reported on the meetings and brought forward a proposed bylaw for funding the service.

Step Eight: Decided on whether to use assessment-based funding or a flat rate approach and on the approval process, i.e. Alternative Approval Process or Referendum. It was decided to use a flat rate approach and a referendum.

Step Nine: Obtained a Board resolution giving first three readings to the financing and service area bylaws and direct staff to proceed with the referendum process.

[81] http://65.39.188.111/cms/wpattachments/wpID2501atID5996.pdf

Step Ten: Sent the bylaws and the referendum question to the Province for approval.

Step Eleven: Held referendum.

Step Twelve: On successful completion of the referendum (certified by the Province) had the final reading of the financing and service area bylaws. Service area effectively established at that point.

Step Thirteen: Hire program staff.

Step Fourteen: Established a Technical Advisory Committee.

The nature of the program has evolved over the years. Initially, the municipalities decided not to participate. They already partnered with the RDN in the delivery of water conservation programming (Team WaterSmart) and wanted to wait and see what the full DWWP program would look like to see if it had value for their residents.

In 2012, the municipalities decided to join in the service area. They recognized that the program would help address their community's concerns about environmental health and watershed protection, while also demonstrating to provincial staff a commitment to responsible water management.

The addition of the municipalities was beneficial at a program delivery level because it allowed program staff to take a more 'whole watershed' approach.

It was also beneficial financially for electoral area residents, because the RDN decided that rather than increase the program budget, they would reduce the per-property tax, so the tax requisition went down from $12 (in the electoral areas) to $8 for all parcels in the regional district. The maximum requisition communicated to the public was $25/parcel/year which has never been applied.

Governance and Stakeholder Engagement

The RDN DWWP is guided by a Technical Advisory Committee (TAC) that provides input into the program.

The reporting structure of the TAC has also evolved over the years. Initially, the TAC was a Board Committee, but after two years, the Board decided it was more appropriate to separate the technical and political components (similar to what has been done in at the RDKB).

In 2012, the TAC Terms of Reference was updated so that the TAC became a working committee that reported to the Sustainability Select Committee. While the transition to a working committee was helpful, reporting to a Board committee rather than the Board was at times challenging and inefficient.[80] In 2017 the Terms of Reference

Is there anything in particular that you think helped get people 'on board' in the public meetings prior to referendum?

"Being very, very honest about what the program is and it isn't.

…When you take the plan to the public, be ready for anything. At the first public meeting the first thing out of someone's mouth was "You're going to put meters on our well!" It totally blindsided us. We had no idea that was even a concern and so we went back and re-structured the presentation and hit that nail on the head in the first slide.

*You have to be ready for misperceptions. We spent a lot of time talking about what the program **is** and a fair amount of time talking about what the program **isn't**. It isn't [in the RDN's case] a program to set up new regulations; it isn't a tool to force forestry to do anything, it isn't about taking over your water.*

…We were really honest and said 'Look, we're going to be spending a lot of time and money understanding the resources. What comes out of it is not for us to say. We're not setting up the regulations. But we do want to have better information to support better decisions'

When you're infront of people, you have to be as direct and honest as you can. That builds trust."

Mike Donnelly, Retired Manager, Water Service, RDN

was updated again, and the TAC is now a working committee that reports to the Committee of the Whole. The Terms of Reference is to be updated in spring of 2020.[82]

The TAC currently includes the following representatives:

- 5 members Staff from the RDN, City of Nanaimo, District of Lantzville, City of Parksville and Town of Qualicum Beach
- 2 members General Public (1 north / 1 south)
- 1 member Island Health
- 1 member Ministry of Forests, Lands, Natural Resource Operations, and Rural Development
- 1 member Environment Community
- 2 members Forest Industry
- 1 member Water Purveyors' Representative
- 1 member Hydrogeologist
- 2 members Academic Community (1 From the Vancouver Island University)
- 1 member Registered Professional Biologist
- 1 member Islands Trust
- 1 member Ministry of Transportation and Infrastructure
- 1 member Fisheries and Oceans Canada
- 1 member Inter-regional Education Initiative (Cowichan Valley Regional District)

The General Manager of Regional and Community Utilities chairs the committee.[82] RDN staff members are present in an advisory capacity. The Terms of Reference is in Appendix B.

Engagement with First Nations has evolved over the years. Initially, RDN leadership (the Chair) met with a Chief of one of the local First Nations during the Action Plan development process.[83] Currently, senior staff and Board members meet with First Nations outside of the Advisory Committee (over the phone or coffee, as preferred) to discuss the program and obtain input and feedback periodically, generally at the project level.[82]

The RDN Board is committed to continuing to build and enhance relationships with First Nations. Although the first ten years of the DWWP Program saw some project-level partnership on specific initiatives, there is room for much more collaboration to occur. Water issues are of deep cultural relevance and socioeconomic interest to Indigenous communities. The RDN recognizes its potential as an active partner with First Nations communities in achieving shared objectives around water sustainability. Each First Nation will have perspectives on how or whether to participate in DWWP Program actions, which will ultimately guide what the engagement looks like. Recognizing that good relationships take time to build, meaningful engagement with First Nations is an ongoing commitment of this RDN program, based on a foundation of shared learning, respect, and collaboration.[82]

[82] Pisani, Julie. RDN Drinking Water and Watershed Protection Coordinator. In communications with author, January 28, 2020.

[83] It is unclear at the time of reporting, if the Chair met with all First Nations leaders in the regional district.

Benefits of the TAC

The TAC provides significant decision-making support to RDN staff and Board and has been an invaluable resource to the RDN. Several of the TAC members were involved in the initial steering committee and volunteered their time in the development of the Action Plan.

Many of the TAC members (particularly MFLNRORD staff) met regularly with RDN staff members in the initiation phase of the program. In addition, most members of the TAC have partnered to support the delivery of projects. For example, Mosaic Forest Management (a large private managed forest land holder) partners in watershed tours, climate monitoring, and surface water monitoring along with the MOE and community stewardship volunteers. The MFLNRORD partners in groundwater quality and quantity monitoring, and hydrometric monitoring along with the DFO, and local stewardship organizations.

The members of the RDN TAC each brings their unique expertise and perspectives to the table in a way that is balanced and acknowledges (and credits) the merits of opposing viewpoints. The collaborative, balanced, and respectful nature of the individuals on the TAC plays a substantial role in the success of the program.

Resource Needs

Over the past 10 years, the RDN DWWP has requisitioned $450,000 - $550,000/year in taxes to support core program costs. A reserve has also been established so that funds can be saved for larger projects. This core funding has allowed for two permanent program staff and two temporary program staff to implement the program initiatives. This long-term reliable funding has also attracted substantial investment in the program from other levels of government, academia, and the stewardship community, as well as private sector donations (e.g. monitoring by forestry companies).

Although the initial referendum asked residents if they could pay up to $25/parcel/year to support the program, the RDN staff and Board has not requisitioned the full amount to date. The parcel tax is currently $8/parcel/year.

The DWWP Program has just completed a year-long engagement process that began in 2019 to update the Action Plan for the next 10-years of the service. The engagement and feedback process for this Plan indicated strong support to continue the activities that were most effective from the first 10-years and provided clear direction to take on additional initiatives, which will allow for a greater degree of stewardship, analysis and integration of information.

The items identified as new priorities amount to an increase in effort of approximately 50%. To act on these priorities starting in 2020, an increase in the parcel tax from $8 to $12 to deliver the desired service level is proposed to the Board in the Financial Plan, currently under consideration for adoption late February 2020.[82]

Partnerships

The RDN DWWP relies heavily on partnership with the provincial government, municipalities, and stewardship groups, academia, industry, and volunteer subject matter experts. Although not all levels of government initially participated in the work (e.g. DFO and municipalities did not participate in the first several years), the RDN was fortunate to work with several local water champions and partners early on,

who took a measured and evidence-based approach to developing watershed management programs. These early successes helped attract partnership in future years.

Community Watershed Monitoring Network

One example of the power of partnerships is the Community Watershed Monitoring network. In 2010, staff realized that the MOE, stewardship groups, and RDN all wanted more information on water quality to support decision-making. However, on their own, no one group had the resources to do this.

To address this, the RDN worked with stewardship groups and the MOE to develop the Community Watershed Monitoring Network and gather water quality data across the regional district.

Under this initiative, the RDN worked with the MOE to establish a program by identifying parameters of concern and monitoring protocols, and then establishing roles and responsibilities.

The RDN took on the role of coordinating the program, purchasing and maintaining monitoring equipment, data entry, coordinating volunteer training, and providing support to volunteers in the form of an honorarium. The role of the community groups was to attend training and conduct field work under the protocols developed by the MOE. And the MOE provided professional expertise and developed the monitoring (and calibration) protocols, led training sessions, and conducted professional data analysis and reporting.

When inviting volunteers to participate, a wide range of groups were invited, including stewardship groups and fish and game clubs. This provided an opportunity for groups that may not work together to collaborate in shared watershed protection efforts. The local forestry company partnered with the RDN DWWP to provide access to the upper watershed and install long-term monitoring equipment.

Is there anything in particular that you think contributed to the success of the program?

"The power of partnerships within the local community, with stewardship groups, and other levels of government."

Is there anything that you would suggest to another Regional District considering this work?

"Do your planning ahead, include as many groups as you can, and flesh out your plan before you go out to the public.

And start working on partnerships now.

Start working on partnerships with First Nations, forestry, stewardship groups…. They're a big part of the team.

And none of this happens off the corner of someone's desk. Reliable, annual funding is the only way you can have consistency of service and develop these relationships. You can't contract out relationships. It doesn't work."

Mike Donnelly, Retired Manager, Water Service, RDN (developed the DWWP Program)

Activities and Outcomes

The DWWP includes numerous other programs, including:[84]

Water Budget: Through this study, the RDN is identifying how much water is stored in lakes, streams and aquifers, how it moves between these elements, and how much (and where) water is being taken/used. This information can be used by provincial decision-makers to inform licensing decisions.

Hydrometric and Climate Monitoring: Under this initiative, the RDN is gathering local data on streamflow, stream level, precipitation and snowpack to help fill gaps in Federal and Provincial monitoring networks. This localized monitoring helps in improving the understanding of the dynamics of regional water

[84] https://www.rdn.bc.ca/dwwp-projects

resources, and the data can be used in more rigorous regional assessments. This information can be used by provincial decision-makers to support licensing decisions.

Groundwater Monitoring: Tracking groundwater levels in the region helps increase the understanding of the resource. Under the DWWP program, several new observation wells have been added to the provincial monitoring network. Additionally, well owners across the region have volunteered their wells for groundwater level monitoring to add to the pool of data via the RDN's Volunteer Observation Well Network. The RDN also worked with the Province to conduct several groundwater quality studies. The information gathered under these initiatives is used by provincial decision-makers, by professionals doing local assessments for development approvals, and by RDN staff to identify priority areas for more outreach or data collection.

Small Water Systems: Across the RDN there are many water purveyors that operate small water systems to provide water to the public. The DWWP program has established a working group for these operators to gain more knowledge and access to resources to better manage their small water systems. This program is supported by the local health authority.

Land Use Planning: The DWWP also works with land use planners to inform land use planning policy and decisions. One example of an innovative approach to land management, based on information gathered as part of the program is the Yellow Point Aquifer Development Permit Area, under which large-scale rainwater harvesting is required for most new development. The DWWP program commissions specific water studies to support Official Community Plan updates and DWWP staff also assist with planning referrals on development applications to ensure that current available water-related information is considered in a manner that influences how development can proceed while protecting the resource from cumulative impacts over time.[82]

Lessons Learned

- Working with First Nations early is important. This critical first step begins with the Regional District leader (Chair) meeting with each of the First Nations community leaders (Chiefs) to discuss goals and expectations.
- Ensure as many groups as possible are at the table in the planning process to ensure it is balanced and reflects a wide range of perspectives.
- Partnerships are key. There are many ways in which partnerships can meet the needs of multiple groups, while harnessing the strengths of individual organizations.
- It can be difficult to go from a high-level action plan to results on the ground. After an initial high-level plan was created, a 'Watershed Snapshot Report', strategic planning process was needed to translate high level goals and strategies into action.
- Sustainable funding attracts more funding.
- While people may vary in their vision for a watershed, most can 'get behind' the idea of having more information to support decision-making.
- A champion of the program is very helpful. The RDN Chair (at the time) was very supportive of the initiative and was a strong proponent of the DWWP. Several Directors were also very interested in the program and promoted the program in their communities.
- A neutral facilitator can support initial planning and establish a collaborative environment.
- It is very important to be honest and clear about what the program can and cannot do.

- Not all partners may come to the table initially, and that is okay. They may need to see that the program has value.
- When creating an advisory group, it is very helpful to invite people to the table who can share their own unique perspective or area of expertise, while considering and respecting others'.

Nicola Watershed Initiatives

There are several watershed protection initiatives in the Nicola Valley. Current initiatives include:

- The Nicola Watershed Community Round Table (NWCRT): a community-led community outreach organization
- The Nicola Basin Collaborative: multi-stakeholder collaborative, facilitated by the Fraser Basin Council
- The Nicola Watershed Pilot: a co-governance partnership between the Province of BC and five Nicola First Nations

There has also been a significant amount of historical water management activity in this watershed. Table 8 provides a summary of the groups that have been convened in the Nicola over the past twenty years.

Figure 8 shows the location and extent of the Nicola watershed.

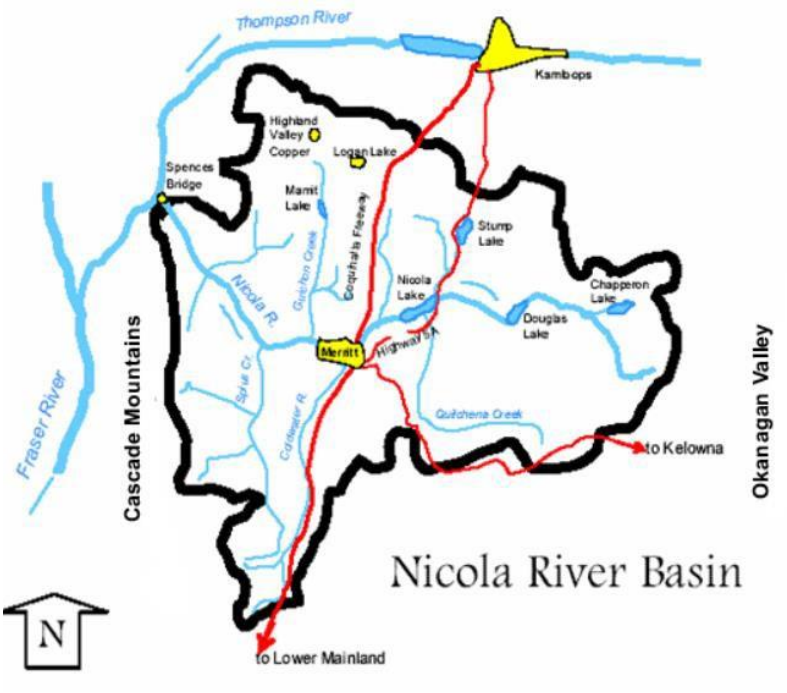

Figure 8: Nicola Watershed. Source: http://www.nwcrt.ca/nicola-water-use-management-plan/watershed-map

CONTEXT

Area of Interest

The Nicola Watershed. Includes the City of Merrit, District of Logan Lake, several First Nations reserves, and electoral areas within the Thompson Nicola Regional District.[85]

Population

Approximately 15,000 - 16,000

Area

Approximately 7,280km^2

Community Character

Rural residential, small-city; many work in agriculture (especially ranching), forestry, and recreation

Land Ownership

Often privately owned land in lowlands and Crown owned in uplands

Activities in Watersheds

Forestry, agriculture, recreation, rural residential, gravel pits, etc.

Primary Concerns

Concerns about the quality and quantity of drinking water due to cumulative impacts from watershed activities (Private land logging, gravel pits, contaminated soil dumping, motorized recreation, aging septic systems), interface wildfire risk to communities, invasive species, and loss of biodiversity

Table 8: Watershed Groups in the Nicola Basin. Source: www.nicolaplan.ca

Group	Role
Nicola Watershed Community Round Table (1994-Present)	Educate the residents of the watershed about specific issues affecting the watershed
Nicola Water Advisory Council, Multi-Stakeholder Committee, Steering Committee/Planning Team (2004-2010)	Guide the development of the Nicola Water Use Management Plan
Nicola Lake Working Group (2012-2013)	Guided the development of the Nicola Lake Action Plan
Nicola Lake Steering Committee (2013-2015)	Guided the implementation of the Nicola Lake Action Plan strategies
Nicola Steering Committee (2015-present)	Provide feedback and guidance on the development of communication and outreach
Nicole Technical Committee (2015-present)	Guide the development of technical, operational projects on the ground
Nicola Research Collaborative (2016-present)	Working with the Nicola Technical Committee to provide guidance and develop research projects
Nicola Co-Governance Pilot group (2018-present)	Pilot innovative co-governance approach between the Province of BC and five Nicola First Nations

The following provides an overview of the current initiatives.

Nicola Watershed Community Round Table

The Nicola Watershed Community Round Table's mandate is to educate the residents of the watershed about issues affecting the watershed and sustainability. It also reviews and lobbies for government policies and programs for sustainability.[85]

Process to Establish

The Nicola Watershed Community Round Table was formed in 1994 when a group of community members came together to prepare for an anticipated Community Resource Management Plan (CRMP) process. The group heard that the CRMP planning process was expected in Merritt and decided to coordinate the community in advance and develop a set of goals and ideas for the plan. While the CRMP process never came to Merritt, the Community Round Table carried on.[86]

The goal of the Round Table in 1994 was to convene representation from across the community, including conservationists, loggers, ranchers, 'city folks', and tourism - to try and affect the decisions that were made. The group noted that most of the decisions in the small watershed were being made by regional and provincial governments in Kamloops or Victoria and that they didn't reflect the community's interests or needs.

To address this, the community formed a Round Table and spent a significant amount of time, mapping out their goals and mission statement and visions. They did a landscape plan showing what they wanted

[85] http://www.nwcrt.ca/about-the-nwcrt/overview

[86] Anderson, John. Chair, Nicola Watershed Community Round Table. In discussion with author, October 23, 2019.

the landscape to look like, including what the forms of production and what was needed to sustain the community socially, environmentally, and economically.[86] In 1998 the Round Table became a non-profit society and in 2009 it became a registered charity.

Eventually the Round Table evolved into an education role. The intent of the Round Table was to educate the community so that when other levels of government came to the community with an idea, the community was well-educated and well-informed on the topic and could provide useful feedback.[86]

The Round Table held meetings which covered many topics, such as education and healthcare, but always had a strong interest in water. In 2001 the group decided to come together to develop a water use management plan (similar to a Water Sustainability Plan). The story of this project is described in further detail below.

Today, the group still holds public forums, but is not as active anymore, as several members have aged out.[86]

Governance and Stakeholder Engagement

The Round Table includes representation from a wide range of interests. The group operates under the consensus model, meaning that "Everyone has to agree – and if they can't agree, they have to be able to live with the decision. With the consensus model, no one is left behind. This approach was 'painfully slow to start but gets easier with practice'".[86]

Nicola Community Watershed Round Table

"Our goal was to 'bring people up to speed so they have the proper information. Its all about having the proper information.

Sometimes people are really disappointed by government for not acting on things. But once they get more information, they see some of those things [that they want] are really hard to implement when you consider all the different aspects"

"Everybody has their issues in terms of what they want - they have their axe to grind. We're no different. …We're ranchers. have things that we're passionate about and threatened by.

But at the end of the day, what we tried to do with the Round Table is make it so you had to appreciate other people's perspectives respectfully."

John Anderson, Chair, Nicola Watershed Community Round Table

Activities and Outcomes

Over the years, the NWCRT has been a means to bring forward community issues and concerns. As issues arose or topics were brought forward by individuals, the NWCRT sponsored and facilitated community meetings.

At these meetings, a subject matter expert provides information on a (often contentious) subject. Then people are divided into tables of eight to discuss the topic, and then report back to the group. Before coming back to the larger group, the table group needed to come to consensus about what to report back.

The topics of conversation included:[87]

- Nicola Lake Pumped Storage Hydroelectric Project
- Climate Change
- Coalbed Methane
- Changing Health Care Delivery
- Co-generation
- Water Resources in the Watershed
- Merritt's Official Community Plan
- Lakes, Land and Resource Use Plan
- Recreation Considerations in the Nicola Valley
- Wildlife Species and Their Habitat

[87] http://www.nwcrt.ca/about-the-nwcrt/topics-of-discussion

- Landfills, Recycling and Waste
- Water Issues in the Nicola Valley
- Riparian Zone Management
- Water Temperature Sensitive Streams
- Nicola Dam
- School Board Amalgamation

The NWCRT has initiated and been involved in a number of projects.[88]

- Nicola Water Use Management Plan (2004-2010)
- Communication Plan for Low Flows in the Nicola Watershed (2010)
- Laurie Guichon Memorial Grasslands Interpretive Site
- Coldwater River Recovery Plan
- Drought Level Sign

Nicola Water Use Management Plan

In 2004, the Round Table convened a workshop: "Charting Our Water Future", which brought together a wide range of stakeholders with an interest in water to begin a dialogue about a water use management plan and endorse the development of a plan for the watershed.[89]

Over the next five years, the Round Table administrated the Nicola Water Use Management Plan. Funding was provided by the Province, Federal government, local government, and industry. The Nicola Water Use Management Plan (NWUMP) process was led by two committees: the Multi-Stakeholder Committee (MSC) and the Steering Committee (SC). The MSC was responsible for decision making during the plan's development and included representatives from all levels of government, First Nations, interest groups, and individuals. The SC provided organizational and technical support. Several sub-committees were formed to support the MSC.[89] The Round Table hosted hundreds of discussions and facilitated the meetings of the Multi-Stakeholder and Steering Committees.

The NWUMP, completed in 2010, included 37 recommendations for implementation within six categories: general, water quantity, water quality, environment, learning, and management. The NWUMP included an implementation schedule for each of the 37 recommendations, including approximate costs (low, medium, or high), timeline, and organization responsible.[89]

Upon completion, government was reluctant to adopt the plan, because it didn't comply with Part 2 of the Water Act (under the Water Act the Province must be involved in the initiation).[86]

Although the Round Table was disappointed that the WUMP wasn't adopted, they have noticed that most of the recommendations in the plan are now being implemented.[86]

Over the years there have been several groups convened to deliver these recommendations. Currently, much of this work is being coordinated under the Nicola Basin Collaborative. The Roundtable also sits on the Nicola Basin Collaborative.

Lessons Learned

- When there is a contentious subject, invite subject matter experts from both sides to present, so that people can learn more about the topic. Creating a forum where people can learn more about contentious subjects can help bring people with divergent viewpoints a bit closer. It is unlikely to

[88] http://www.nwcrt.ca/about-the-nwcrt/projects
[89] https://www.psf.ca/sites/default/files/FSWP_08_LR_4_Final_Report-App_1.DraftNWUMP_.Mar_09_.pdf

get the community in complete agreement, but they can at least appreciate other people's perspectives and have a more productive dialogue.

- A strong chairperson is essential. Clear meeting rules are essential to maintaining a respectful environment. Rules such as 'No one can speak for more than 2 minutes', and 'A person can only speak once before everyone else has had a chance to speak again' help balance viewpoints.
- It was suggested that government should not run this sort of meeting/group because it requires a level of candor that government staff cannot engage in. Government staff need to appear more neutral for the purposes of their job. The level of neutrality that is desirable at a government-led meeting would not elicit the types of discussions that are had at these meetings. The interviewer noted that he had seen government staff try to model this type of meeting and it was far too subdued and uninteresting to keep participants engaged, let alone returning for years, like has been done at the Round Table.

Nicola Basin Collaborative

The Nicola Basin Collaborative (NBC) is a body, facilitated by the Fraser Basin Council, that is intended to coordinate communication, operational projects, and research in the Nicola River Basin.

Process to Establish

Following the NWUMP, many projects were initiated to support the goals of the NWUMP.

In 2016 and 2017, the Fraser Basin Council identified a need for greater coordination of projects across the watershed and initiated a planning process to identify, prioritize, and address issues. A big driver for this was the need to prioritize the work of research and technical staff in other agencies. This led to the creation of the NBC. After many years of planning processes and governance collaborative in the area, the NBC is now coordinating on-the-ground projects and research to support water management.[90]

Governance and Stakeholder Engagement

The NBC is divided into three themes and respective guiding committees including the Nicola Steering Committee (communication), Nicola Technical Committee (operations), and Nicola Research Collaborative (research). Some members of the NBC sit on all three committees.[90]

The committees include representation from the following groups:

- BC Parks
- Citxw Nlaka'pamux Assembly
- City of Merritt
- Coldwater Indian Band
- Coquihalla Cattle Co.
- Cook's Ferry Indian Band
- Douglas Lake Ranch
- Emcon Services Inc.
- Fisheries and Oceans Canada
- Guichon Ranch

[90] https://www.fraserbasin.bc.ca/_Library/TR_2017/nicola_plan_design_2017.pdf

- Lower Nicola Band
- Ministry of Agriculture
- Ministry of Environment
- Ministry of Forests, Lands & Natural Resource Operations
- Nicola Fish and Game Club
- Nicola Tribal Association
- Nicola Valley Institute of Technology
- Nicola Watershed Community Round Table
- Nicomen Indian Band
- Nooaitch Indian Band
- Okanagan Nation Alliance
- Shackan Indian Band
- Simon Fraser University
- Southern Interior Weed Management Committee
- Stuwix Resources Ltd.
- Teck - Highland Valley Copper
- Thompson Rivers University
- Thompson-Nicola Regional District
- University of Northern British Columbia
- Upper Nicola Indian Band

Resources Required

The group itself has no core funding. Funding is project-based. Last year, the project funding was approximately $100,000. Some of this funding came from the Coastal Restoration Fund. In the past, funding has come from First Nations, the Province, Federal government, local governments, and private industry.[91]

Actions and Outcomes

One of the major projects that has been accomplished was the building of a decision-making tool with input from First Nations, DFO and others that provides input into how releases from the dam are managed to address different fisheries values. The provincial government has modified how they manage the dam based on this project.[91]

It is also hoped that the outcomes of the research will also lead to improved groundwater and surface water authorization decisions at the Provincial level.[91]

Lessons Learned

- Watershed protection initiatives need to be a combination of collaborative discussions and tangible actions in order to be engaging.[91]
- When initiating a watershed management initiative, it is essential to invite all stakeholders to the table. It's important to not exclude specific groups. This will only lead to suspicions and blame. If you have a community divided over logging, ensure that the pro-logging and anti-logging sides are at the table. Be sure to include First Nations and all orders of governments.[91]
- It's important to have an impartial facilitator.[91]

[91] Simpson, Mike. Senior Regional Manager, Thompson, Fraser Basin Council. In discussion with author, October 11 and 17, 2019.

Nicola Watershed Pilot

The Nicola Watershed Pilot is an innovative project aimed at promoting co-leadership of water resources by the Province and five Nicola Valley First Nations. The Nicola Watershed Pilot Memorandum of Understanding (MOU) between the Province of British Columbia and the Nicola First Nations is an agreement to explore opportunities to engage governments and stakeholders in the management of water in the Nicola watershed.

The intent of this work is to sustainably govern water resources in the Nicola watershed for the benefit of future generations.

There was limited information publicly available on this project. At this point, there have been several meetings between the groups. They are still in the early stages and working out sharing protocols and determining what can be publicly available.[91]

Process to Establish

Over the past 20 years, there has been significant interest in the community and other levels of government in the complex water management issues in the Nicola watershed.

In 2018 the BC government committed to fully adopting the UN Declaration on the Rights of Indigenous Peoples in law, policy, and practice.[92]

In support of this work, in 2018 the Province of BC signed an MOU with the chiefs of Nicola Valley's five First Nation bands—Chief Aaron Sumexheltza, Chief Jordan Joe, Chief Harvey McLeod, Chief Marcel Shackelly, and Chief Lee Spahan. This MOU identifies their intent to co-lead a Water Sustainability Act project to identify actions and tools that will address these priority water problems.[93]

Resources Required

The Province and the BC Freshwater Legacy Initiative are co-funding the project. Information was not available online on the costs of the project. Contacts did not respond to requests for information.

[92] https://news.gov.bc.ca/factsheets/cross-government-commitments-to-reconciliation-with-Indigenous-peoples
[93] https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/nicola_watershed_pilot_mou_-_signed_2018.pdf

Summary of Approaches and Comparison to the RDCK Context

Table 9 on the following page provides a summary of the approaches and compares each region to the RDCK context.

Table 9: Summary of Approaches in other Jurisdictions and Comparison to the RDCK

Organization	Advising Group	Function	Funding Model	Scale of Area of Interest	Supporting Documents / Resources provided	Triggers	Watershed Activities	History	Relevance to RDCK (Very Low - Very High)	Rationale for Relevance Ranking
Fraser Basin Council	Fraser Basin Council Board	Guide the FBC	Variable funding sources and values. Almost all project-based funding Around $9 million for current fiscal year, $5-$6 million on average over the past decade	240,000 km^2, over 3 million people	Charter for Sustainability. Available online[94]	Significant loss of salmon stocks, groundwater contamination, drought	Diverse: urbanization, industrial, recreation, agriculture, many water systems, rural and suburban land development	Initiated in 1980s, Council established in 1997	Very low	Differences: Significantly larger area, population, budget; different concerns, different financial model (obtains fees for service from other jurisdictions), different activities and outcomes, very different resources available (established many years ago when there was more funding available, accesses a large amount of funding for salmon enhancement, operates in a region where there are significantly higher property values), and the majority of the population is highly urbanized Similarities: recognition of need for collaborative watershed management
Regional District of Kootenay Boundary	Kettle River Watershed Advisory Council	Advisory Committee to the RDKB Board	RDKB Boundary Integrated Watershed Service: $160,000/year ($0.0485/$1,000 of taxable property in service area)	Approx. 12,000 residents Size of service area uncertain, watershed area: 11,000km^2 (some in US)	Appendix B: Kettle River Watershed Advisory Council Terms of Reference Resource Package	Flooding, drought, concerns over developments (run of river project, golf courses)	Forestry, recreation, small water systems, mining, agriculture, rural land development,	Work initiated in 2010, Service Area established in 2018	High	Differences: Smaller population, smaller service area, history of watershed management planning in the area Similarities: Primarily rural and small-town landscape and demographic, similar resources available (in terms of property values and Provincial and Federal resourcing in the region), similar watershed activities and concerns, also in the traditional territories of the Okanagan Nation Alliance
Cowichan Valley Regional District	TBD. Currently there is a steering committee leading plan development	Leading development of action plan	DWWP Service: the greater of $750,000 or $0.045 per $1000 of taxable value within the service area	80,000 residents, 3,473 km2, higher property values	MOU with Cowichan Tribes Steering Committee ToR in draft and not provided	Low flows, flooding, fish health, weir upgrades, groundwater quality and quantity concerns, increased development	Privately managed forestry, recreation, water supplies, urbanization, rural land development, etc.	Work on the Cowichan plan began in 2003, Service Area established in 2018	Medium	Differences: many years of collaborative watershed management and relationship building, upper watersheds mostly privately owned managed forest, different concerns (more concerns about groundwater, weir), close to Victoria (Provincial government and academic support), better resourced Regional MFLNRORD staff, greater potential resources (higher property values, access to more fisheries funding, larger Regional District organization) Similarities: many rural communities, concerns regarding drinking water for smaller systems, diverse issues and concerns

[94] https://www.fraserbasin.bc.ca/_Library/Fraser_Basin_Council/charter_for_sustainability.pdf

Organization	Advising Group	Function	Funding Model	Scale of Area of Interest	Supporting Documents / Resources provided	Triggers	Watershed Activities	History	Relevance to RDCK (Very Low - Very High)	Rationale for Relevance Ranking
Regional District of Nanaimo	DWWP Technical Advisory Committee	To advise the Board (via Board Committee) on the review and implementa-tion of the DWWP Service	Now: service area covers electoral areas and municipalities (each with funding agreements) Prior: electoral areas only Total funding $450,000-$500,000/year (Now: $8 per property; initially: $25/property)	Over 155,000 residents 2,038km2	Appendix: DWWP TAC Terms of Reference	Growth management concerns, groundwater quality and quantity, fish health	Privately managed forestry, rural, urban, and suburban land development recreation, water supplies, etc.	Initiated in 2006, service area established in 2008	Medium-High	Differences: larger population, smaller area, uplands owned by private forest companies, more resources available (regional MFLNRORD staff, academia), greater concerns about development, groundwater Similarities: program initiated without significant trigger or watershed planning exercise; the program began as an electoral area service where the population was rural and significant tension existed between pro-industry and anti-industry groups; strong distrust in government and preference for small/limited government, diverse and distributed concerns with no one clear issue; concerns about small water systems; element of pioneering as the local government first service, so had to work very closely with public to gain trust
Shawnigan Basin Authority	Shawnigan Basin Society Board	Advises the SBA	The SBS obtained $50,000/year in funding from the CVRD through an alternate approval process. It has lost this funding and is now community fundraising	Approx. 10,200 residents Approx. 110km2	None	Water quality and quantity concerns, cumulative impacts, interface wildfire risk, invasive species, and loss of biodiversity	Privately managed forestry, gravel extraction, quarrying, soil dumping, rural development, septic systems, recreation, boating	Work initiated in 2013	Low-Medium	Differences: significantly smaller area and population, community-led Similarities: rural demographic
Nicola Watershed Community Round Table	Unclear		Registered charity. Limited/no budget.	Area: 7,280km^2 Population: unknown	NA	Anticipated Crown land use planning process, water quality and quantity concerns, fish health	Forestry, mining, agriculture, landfill, fisheries, dam	Roundtable formed in 1994	Low-Medium	Differences: smaller area, history of collaboration and investment, highly organized at the community-level, funding from salmon enhancement programs Similarities: rural area, concern about resource management

Organization	Advising Group	Function	Funding Model	Scale of Area of Interest	Supporting Documents / Resources provided	Triggers	Watershed Activities	History	Relevance to RDCK (Very Low - Very High)	Rationale for Relevance Ranking
Nicola Basin Collaborative	Nicola Steering Committee, Nicola Technical Committee, Nicola Research Collaborative	Forum for coordination of research and communica-tions	Project-based	Area: 7,280km^2 Population: unknown	Strategic Plan Design available online[95]	History of prior work and activities requiring coordination	Forestry, mining, agriculture, landfill, fisheries, dam	Prior work in area begins in 1994	Low	Differences: smaller area, history of collaboration, investment, and watershed management activity, significant amount of prior study in the area, highly organized at the community-level, funding from salmon enhancement programs Similarities: rural area, concern about resource management
Nicola Watershed Pilot	First Nations and Province of BC	Limited information available online; staff did not respond to phone inquiries.	Province and the BC Freshwater Legacy Initiative are co-funding the project	TBD	MOU available online	Changes in water quality, water quantity and the health of aquatic ecosystems, UNDRIP	Same as above	Initiated in 2018	Low	Differences: smaller area, history of collaboration, investment, and watershed management activity, significant amount of prior study in the area, highly organized at the community-level, funding from salmon enhancement programs; currently unclear how local governments will be involved Similarities: rural area, concern about resource management

[95] https://www.fraserbasin.bc.ca/_Library/TR_2017/nicola_plan_design_2017.pdf

Task 4: Develop Recommendations

Next, the team identified recommendations for the RDCK Board, based on an understanding of the opportunities available to local government and consideration of the RDCK context.

Approach

These recommendations were developed by considering the key threats to water in the RDCK (Task 2), the most effective tools and access points available to local government (Task 1), a review of best practices (Task 3), and input from the RDCK Board (December 10, 2019). This work involved a:

1) Review of access points and tools available to local government
2) Review of challenges and concerns in the case study areas
3) Review of best practices and lessons learned in other jurisdictions
4) Additional consultation with Provincial, Regional, and RDCK staff
5) Workshop with the RDCK Board and senior staff.

1) Review of Access Points

The review of access points and tools available to local government found that there are limited opportunities for the RDCK to influence land use and activities in most of the case study areas. Of the access points available to local government, most of them involve working closely with other levels of government (e.g. Water Sustainability Plans, Drinking Water Protection Plans, Crown land use planning).

Recent changes to legislation in the Water Sustainability Act may provide an increased role for local government in watershed management. While the Province has not provided guidance on the implementation of these tools, it is likely that early actions will be prioritized in areas where there is a clear and documented need, coordination and collaboration among the community, and established and respectful relationships with other levels of government, including First Nations.

2) Review of Challenges and Concerns in the Case Study Areas

The review of the case study areas shows that there is currently insufficient information to credibly identify a priority concern in each case study area. All watersheds experience concerns related to:

- Water quantity
- Water quality
- Capacity constraints (regulatory, funding)
- Lack of community consensus and inter-governmental coordination.

The diversity of the concerns and the inter-relationships between the challenges demonstrate the complexity of watershed management, the limitations of trying to solve the issues independently, and the value of taking a coordinated and 'whole of watershed' approach.

3) Review of Best Practices and Lessons Learned in Other Jurisdictions

In recent years, several regional districts in BC have recognized the gaps in watershed protection and taken action to build local capacity and work collaboratively with provincial partners, in order to support community health and safety, environmental health, and economic stability. The review of best practices and lessons learned in other jurisdictions finds the following:

Partnerships and Relationship-Building

- **Partnerships:** Early and consistent relationship-building efforts are important. Partnerships are essential to the success of any watershed protection effort.
- **Provincial Government:** A regional approach is most effective if it focuses on *supporting,* provincial government decision-making, rather than *taking on* government decision-making. While many people are supportive of improved watershed management and drinking water protection, not all residents believe that a regional government should take on the role of the Province.

  There are several ways that local government can become involved in watershed decision-making, without being the formal statutory decision-maker. One of the most effective ways is to work with the Province to improve the understanding of watersheds in order to support improved decision-making. Often, the Province makes decisions with limited information (provincial monitoring networks are generally relevant at a provincial, but not local, scale) and the information on impacts is often provided by resource use applicants. However, local governments can work with the Province to understand the data and information that can be used as input to decisions and then collaborate to provide improved information to support decision-making. When better knowledge is available on watershed impacts (and particularly when it is done on behalf of the community as a whole), it is likely to lead to decisions that are more beneficial to the community as a whole.

  Provincial partners are not only valuable as decision-makers, but provincial staff can provide valuable expertise and access to tools. They are more likely to be able to participate if the initiative is in line with their mandate (watershed protection, rather than delegation of governance).
- **First Nations:** First Nations communities have been engaged in watershed protection efforts for thousands of years. They have a unique understanding of watershed health and unique legal rights to water. It is essential to engage with First Nations early and meaningfully. The Provincial government recently committed to advancing reconciliation actions and will be prioritizing watershed protection initiatives in communities where there are collaborative relationships and alignment with First Nations.
- **Stakeholders:** It is important to invite all key stakeholders to the table to ensure that work is balanced and considers diverse perspectives.

Approach

- **Evidence-Based Decision-Making and Voluntary Action:** A watershed protection service that focuses on 'improving decision-making' and voluntary action is more likely to be supported. Improved decision-making can be appreciated by a broad range of people, including Board members, provincial agencies, resource users, and the community. Regardless of a stakeholder's personal vision for the watershed, most people want to see work that is 'done well'. All these groups can benefit from improved information to support action. With better information about the region's water resources, the RDCK can be in better position to influence provincial decisions regarding water licensing, forestry, and other resource activities. The RDCK can also engage with other key stakeholders and develop relationships to support voluntary actions that protect watershed health.
- **Planning and Engagement:** Prior to establishing a watershed protection service area, a collaborative planning and community engagement exercise is needed in order to ensure that the

service reflects the unique needs of the community and makes the best use of local resources and opportunities. This exercise should be done iteratively, by first engaging a steering committee, then reaching out to stakeholder groups, and then presenting to the broader community.

- **Facilitation:** It is important to engage an external, neutral facilitator in the initial planning and relationship-building steps. The first few meetings of a steering committee are an extremely important relationship-building phase. When there is a history of tensions and misunderstanding, a good, neutral facilitator can help establish a new dynamic and an improved way of relating.
- **Long-term Thinking:** Not all partners may come to the table, at first, and that is okay. Some may need to see that the initiative is of value to them and is a balanced and respectful environment.
- **Honest Conversations:** When a service area is proposed, it is very important to be clear about what the program both *can* and *cannot* do. It is also very important to listen to community input. Community members may make incorrect assumptions about the intent of the program and so staff must listen to the community to understand underlying assumptions and address any concerns.

Funding

- Sustainable funding attracts more funding.
- Sustainable funding *is* achievable.

4) Additional Consultation with Provincial, Regional, and RDCK Staff

Additional consultation with provincial, regional, and RDCK staff revealed that there are significantly lower resources available at the provincial and regional level in the RDCK than there may be in other areas of the Province due to the small population density. Because of this, there are real limitations to resources that provincial and regional staff can dedicate to water protection efforts in the RDCK, and there must be clear connections with their mandate and evidence that initiative will have mutual value.

5) Workshop with the RDCK Board and Senior Staff

On December 12, 2019 a workshop was held with the RDCK Board and senior staff to obtain input on the Regional Watershed Governance Initiative Scoping Study. At the workshop, directors were provided with a summary of Tasks 1, 2, and 3, and presented with a set of draft recommendations. Board members then had an opportunity to ask questions and provide feedback through a facilitated plenary and small group sessions. Several comments were also received following the workshop.

The feedback provided by the Board can be summarized as follows:

- **Geographic scale:** The RDCK is a diverse area, with many small watersheds and communities. It will be a challenge for a regional watershed protection initiative to address local challenges over such a large area. While some directors suggested focusing watershed protection efforts on case study areas where there are known issues and existing public support for action, others saw the value of a regional approach, recognizing that watershed concerns occurred region-wide and it may be more difficult to participation from other levels of government and key stakeholders in smaller areas with limited populations. They also noted that it could be difficult to generate sufficient funds in smaller areas and that there are economies of scale in addressing issues regionally.

- **Small population:** It was noted that the small population base of the RDCK limits potential tax revenue, compared to other regions that have developed Drinking Water and Watershed Protection services.
- **Funding:** Some directors noted that the proposed work should be the responsibility of other levels of government and suggested that senior governments provide funding for this work. Others thought it unlikely that senior government would provide funding and stated that there is still a need for regional action. Some suggested exploring funding from BC Hydro, the CBT, Fortis, etc. However, they noted that short-term project-based funding had its own challenges and recognized the value of a sustainable funding source.
- **Activities:** Several directors suggested that a watershed protection initiative should focus on data and information gathering for the purposes of informing decision-making, as opposed to consultation and/or information sharing for the sake of information sharing.
- **Relationships:** In the small group sessions, directors identified several areas where there are good relationships that could be built on. In particular, directors noted the positive relationships that have been built between Board members and the community, and staff members and the community. Relationships with First Nations were noted as an area where there has been some work and there is room for improvement.
- **Stakeholders:** Directors provided input on members of a watershed protection planning committee.
- **Case Studies:** One director noted that they expected more information and recommendations to be provided for each case study area. (Author's note: this comment is addressed in more detail in Appendix C. Initially, more work was done to analyze data in case study areas, however RDCK staff suggested excluding this work, as there was a large risk prioritization project occurring and final risk assessment should rely on those results).
- **Sub-Regions:** There is likely value in dividing the RDCK into sub-regions for watershed management, based on groupings of watersheds.
- **Urgency:** There is an interest in seeing immediate action. The discussions in the small groups and plenary often evolved into discussions related to strategic program planning. Many directors were eager to begin brainstorming solutions and there was a clear desire to move beyond the idea phase into action.

The workshop highlighted that further work is needed to gain alignment on core aspects of the watershed protection effort moving forward, including the role of the RDCK, area of interest (geographic scale), approach to funding, potential activities, etc. A good place to discuss the pros and cons of these items and gain would be in a strategic planning process for a regional watershed protection initiative.

The workshop also highlighted the value of taking a collaborative approach with the RDCK Board. The Board has a great deal of knowledge and a strong understanding of local watershed challenges. Directors have well-established relationships with community members and groups and can provide valuable input into a planning process. It will be important that the Board to be actively engaged in next steps to support knowledge transfer and ensure alignment with the Board's goals.

A full list of the comments and the recommended approach to address is included in Appendix C.

Recommendations

The RDCK is well-positioned to take on a role in improved watershed protection. As the level of government that is responsible for land use planning (on private land), emergency response, and provision of water (in several communities), the RDCK has unique interest in watershed protection.

The RDCK is also the level of government that is closest to the community and able to communicate community interests with other levels of government. As a local government, the RDCK is more closely connected with watershed stakeholders, and can take a role in working with the community to support voluntary watershed protection actions.

Although an improved regulatory environment for watershed protection would be beneficial across BC, there is a clear role within the existing system for the RDCK to increase capacity, improve coordination, enhance decision-making, and support communities in addressing watershed issues.

To support the RDCK in protecting watershed health, it is recommended that the following steps are taken:

Recommendation #1: Establish organizational capacity

Recommendation #2: Strengthen relationships with partners and community stakeholders

Recommendation #3: Coordinate a cross-jurisdictional and multi-stakeholder forum to support improved collaboration in watershed protection

Recommendation #4: Develop an action plan for a regional watershed initiative

Recommendation #5: Pursue sustainable funding for a regional watershed initiative

It is recommended that these actions are taken on a regional scale because many of the issues and concerns highlighted in the case studies may also apply in other areas of the District. In addition, because the RDCK is such a diverse region, with many small watershed and communities, and a relatively low population density, there are operational and economic advantages to taking a regional approach.

Most importantly, engagement with First Nations, the Province, and industry stakeholders will be easier and more successful if there is one regional coordinating forum. Key partners (especially decision-makers) would be unable to attend multiple forums in smaller watersheds and are more likely to participate in a larger regional forum.

Recommendation #1: Establish organizational capacity to pursue recommendations

Objective: Enable regional watershed protection efforts by building capacity within the RDCK to take action to protect watershed health.

Approach: Request Board direction to allocate funds and staff time towards watershed protection efforts over the next three years.

Actions:

1. Develop a report, identifying the benefits and the costs of moving ahead with watershed protection efforts. The report should clearly identify what issues would be addressed and how the proposed work would benefit communities and the organization as whole. It should include a preliminary three-year plan that shows how staff time and funding would need to be allocated to pursue Recommendations #2-5. The plan should cover the years 2020-2022 and identify how Recommendations #2-#5 would be incorporated into the Development and Environmental Services work plans and budget.
2. Present this report and three-year plan to the Board and request approval to move forward with regional watershed protection actions.
3. If Board direction received, proceed to Recommendations #2-#5.

Timing: ASAP. See Table D1: Timeline of Recommended Actions in Appendix D.

Cost: Within existing budgets.

Recommendation #2: Strengthen relationships with partners, First Nations, other levels of government, and watershed stakeholders

Objective: Foster a positive relationship with partners, First Nations, other levels of government, and watershed stakeholders to support long-term collaboration.

Approach: Reach out to provincial and regional government staff, stakeholders, and First Nations to share goals and discuss areas for collaboration.

Actions

1. Contact the Ktunaxa, Shuswap, and Okanagan Nations to initiate a conversation on watershed protection. This should be done by RDCK leadership (Chair). An initial conversation should involve a discussion of mutual goals in watershed protection. If there is an interest in collaboration, later meetings could involve discussion of potential roles, including potential co-leadership in a regional watershed protection initiative.
   The RDCK may want to partner with Indigenous communities in watershed protection projects to demonstrate reciprocity and establish a working relationship.
2. Write a letter to the Province, expressing an interest in developing a watershed protection initiative and requesting support in the form of staff involvement. This letter should be sent to the regional leadership (e.g. MFLNRORD Regional Executive Director). RDCK staff should also meet with MOE and MFLNRORD staff in-person to discuss watershed protection objectives and opportunities for collaboration.
3. Contact watershed stakeholders including stewardship groups and industry. State the RDCK's intent to proactively address watershed issues and identify an interest in collaboration. This will demonstrate leadership, initiate relationships with potential partners, and show that the RDCK is taking the community's concerns seriously.
4. Continue existing watershed protection efforts, including community engagement and partnership in watershed monitoring (e.g. Quartz Creek). These initiatives represent valuable relationship-building opportunities. If it does not already occur, add 'whole of watershed' messaging to

Engaging with First Nations

It is important that First Nations are contacted as early as possible for several reasons:

First, it is an act of good faith that recognizes their unique role at the table. As separate Nations, whose rights are increasingly acknowledged in provincial legislation and policy, they hold unique legal rights to water and land in the region.

Secondly, as the initial stewards of the area, Indigenous people have been managing water according to traditional laws and knowledge systems for thousands of years. They have a unique understanding of the area and traditional ecological knowledge they may want to share. In recent years, the local Nations also led renowned watershed protection initiatives.

Thirdly, it is best to ask if and how Indigenous communities would like to work together, rather than assuming a form of engagement. For example, a community may not have resources to attend a group meeting and prefer to meet separately and/or get assistance with travel/consultant costs.

Finally, at a very practical level, First Nations communities are often inundated with referrals from government and industry and need time to address the many requests. Because many Nations use a consensus model, they may need more time to develop a response that is representative of the community.

water conservation communications, to increase the community's awareness of the importance of watershed health.

Timing: Following Recommendation 1. See Table D1: Timeline of Recommended Actions in Appendix D.

Cost: To be determined by RDCK staff as part of Recommendation #1.

Recommendation #3: Create a cross-jurisdictional and multi-stakeholder forum to support improved collaboration in watershed protection

Objective: Increase coordination across levels of government and watershed stakeholders and convene the necessary expertise to develop a watershed protection action plan.

Approach: Convene a Steering Committee to guide program development and then a technical advisory committee to guide program implementation.

Actions:

1. Develop a Terms of Reference for a Steering Committee. The committee should include membership from all levels of government and First Nations (ideally, it would be co-led with First Nations). It should include as many watershed interests as possible, while maintaining a size that is small enough to support open and frank conversation (preferably less than 20 participants). It is recommended that at least two Board members are on this Committee to promote knowledge transfer, improve accountability, and support Board alignment with the planning process.
2. Invite organizations to participate. When selecting individuals/groups, it will be important that representatives have good communications skills and a willingness to consider issues from all sectors and geographical perspectives. Some invitees may not attend initially, as they may need to see the value of the forum prior to participation. For members of the general public, it is suggested that directors appoint representatives from a pool of applicants.
3. Prior to disbanding, the group should develop a Terms of Reference for a Technical Advisory Committee (TAC). It is suggested that the TAC is a working committee that reports to the Board.
4. The TAC would then guide program implementation and provide a forum for coordination of watershed efforts and interagency communications.

Timing: Suggested mid-2020. See Table D1: Timeline of Recommended Actions in Appendix D.

Cost: Staff time to develop Terms of Reference and engage a consultant to support the planning process. Estimated 80 hours (to be confirmed).

RDCK Watershed Protection Initiative Steering Committee – Sample Membership List

- 1 member RDCK CAO
- 3 members RDCK Directors (Chair and 2 Directors)
- 3 members First Nations (e.g. Ktunaxa, Shuswap, and Okanagan Nations)
- 1 member IHA
- 2 members MFLNRORD (e.g. Resource Operations, Research Hydrologist)
- 1 member MOE (e.g. Water Stewardship Division)
- 3 members Forest Industry (2 large tenure holders, 1 small: e.g. BCTS, Kalesnikoff, Cooper Creek Cedar)
- 2 members Small Water Purveyors (e.g. 1 Improvement District, 1 small water system)
- 1 member Environmental Stewardship Group (e.g. Duhamel Watershed Society)
- 1 member Recreation/General Community Group (e.g. Nelson District Rod and Gun and Conservation Club)
- 1 member Columbia Basin Trust
- 2 members General Public (1 north / 1 south, appointed by Board)

RDCK Staff: Development, Environmental Services

Recommendation #4: Develop an action plan for a regional watershed initiative

Objective: Develop an action plan for a regional watershed service that reflects the unique issues, resources, and opportunities in the RDCK.

Approach: The RDCK should engage a facilitator to lead a strategic planning process and develop a vision for a regional watershed protection initiative. The plan should identify goals, objectives, and actions, as well as budget and funding recommendations for the Board. Ideally, a regional watershed protection initiative would focus on:

1) Working strategically with stakeholders and government partners to increase the understanding of local watersheds in order to support enhanced decision-making at the regional and provincial level,
2) Working with watershed stakeholders to support voluntary action that protects and enhances watershed health, and
3) Positioning the RDCK for implementation of tools available under the WSA (e.g. water objectives). This will involve collaboration with First Nations, stakeholders, and provincial staff.

Actions:

1. Engage a consultant to lead plan development. A good, neutral facilitator will be critical to the success of the planning process.
2. Engage the Steering Committee in plan development. The role of the Steering Committee should be to:
    a. Review, discuss, and define key issues related to the long-term provision and protection of water and management of watershed risks,
    b. Develop goals and objectives for a regional watershed protection initiative,
    c. Identify priority action items and initiatives for the long term, sustainable provision of water, protection of drinking water sources, and reduction of risks,
    d. Liaise with the constituencies and agencies they represent to identify opportunities and related initiatives,
    e. Provide input and feedback on the public consultation activities, and
    f. Provide recommendations to the Board regarding watershed protection activities, potential costs, and a watershed protection service area.

    Initial meetings of the Steering Committee should focus on orienting the group, developing team dynamics, obtaining consensus on the plan process, and building the collective knowledge base of the group. As each committee member brings a unique perspective and area of expertise to the table, it would be helpful to start each meeting with a brief presentation from a committee member on a pertinent subject of interest (e.g. MFLNRORD: water objectives, water system operator: challenges of small water systems, forest tenure holder: planning and operations).
3. Initially, the steering committee should collaborate to develop a vision and identify priority issues, goals, and actions to support the long-term sustainable provision of water and protection of water sources. Where there is uncertainty regarding the best approach, it would be helpful to identify (and document) the pros and cons of each approach. Throughout, the committee should work to build consensus, as this will make the plan more durable.

4. Once the committee has done this initial work, it should be taken to stakeholder groups for input. This could take the form of two or three stakeholder engagement sessions in different areas of the RDCK (e.g. North and South). It is important that a wide range of representatives are invited at this stage, including community groups, recreation groups, stewardship groups, agriculture groups, and industry representatives. Obtaining input from the widest range of stakeholders possible will help make the plan more robust and ensure the plan addresses local concerns.
5. Next, the committee and consultant should revise and finalize the plan based on stakeholder feedback.
6. Staff should take the request Board approval of the Action Plan and direction to proceed with public engagement on the concept.

Considerations in Plan Development:

Local vs Regional Approach: The RDCK is a diverse region, with many small watersheds and communities. The population of the RDCK is also relatively small and dispersed. Given these factors, there are significant benefits to taking a regional approach to watershed protection, as it is more likely to bring other levels of government and collaborators to the table, has widespread benefits at a reduced per-household cost, and introduces economies of scale. However, it will be a challenge to demonstrate that a regional approach can address local challenges across such a diverse area.

If a watershed protection service is established, it is suggested that initial early actions be taken region-wide (e.g. data and information collection), and then a strategic planning exercise (similar to the RDN Snapshot Report) be conducted to identify specific activities in specific watersheds.

While a regional approach may mean delaying high cost expenditures in specific watersheds, it is likely to bring the greatest long-term value to communities. In areas where there is immediate need for higher-cost projects, this could still be pursued through partnership with other agencies. For example, if the Province, a local stewardship group, and a funder, want to pursue a higher cost project in a particular watershed, the RDCK could, through a watershed protection service, provide support in administration and/or collaborate with a small amount of funding.

To help develop a regional plan that addresses more localized issues, it may be helpful to divide the regional district into sub-areas, based on watershed boundaries (aligning with electoral area boundaries, where appropriate) to aid in planning discussions.

Finally, it is important to note that not all concerns will be localized. For example, water quantity concerns (with surface water supplies) are likely to be more regionally consistent as they are influenced by weather, climate, and topography, whereas water quality concerns may vary more from watershed to watershed.

Short and Long-Term Planning: Complex watershed management issues are not solved quickly and easily, so it will be important to be strategic and take a long-term view. Balancing foundational tasks such as data and information gathering with visible, early actions that protect watershed health can help bolster support for the program, while bringing the best long-term outcomes for communities.

Timing: See Table D1: Timeline of Recommended Actions in Appendix D.

Cost: It is estimated that it would cost approximately $75,000 to engage a consultant to support the development of an action plan. It would also require approximately 150 hours of staff time.

RDN Watershed Snapshot Report

Once a Drinking Water and Watershed Protection Service was approved, the RDN used a structured approach to develop an implementation plan for the program. Called the 'Watershed Snapshot', this planning process involved a community mapping exercise and 'SWOT' assessment to guide program planning.

Together, the community identified:

1) Strengths: available information, data

2) Weaknesses: vulnerable water supply systems, sensitive ecosystems, natural hazards, etc.

3) Opportunities: stewardship groups, other levels of government, community members, First Nations, or industry potentially interested in collaboration

4) Threats: including
a) concerns - areas where people are worried about watershed impacts, but there is no documented problem
b) issues - areas where there were documented impacts, and
c) threats - activities or situations that may impact watershed health.

This mapping was done iteratively, first with the Steering Committee, then with a Technical Roundtable, then with the community.

This assessment was then used to plan actions. For example, in areas with known and documented impacts, the RDN collaborated with stakeholders to reduce those impacts. In areas where there were concerns, but no data, the RDN initiated monitoring to better understand the situation and support action, as needed.

Using this information on the Region, the TAC developed a plan, which was presented to the community for input, then taken to the Board.

Recommendation #5: Pursue sustainable funding for a regional watershed initiative

Objective: Build community support for a watershed protection service and obtain sustainable funding so that the RDCK can begin addressing watershed challenges.

Approach: Bring the action plan to the community and ask if they would like to support a regional watershed protection initiative.

Actions, in sequence:

1. Present the Action Plan to the public through public meetings and other communications methods.
2. Report on the meetings to the Board and bring forward a proposed bylaw for funding the service.
3. Decide on whether to use assessment-based funding or a flat rate approach and on the approval process (e.g. Alternative Approval Process or Referendum).
4. If a referendum is chosen, obtain a Board resolution giving first three readings to the financing and service area bylaws and direct staff to proceed with the referendum process.
5. Send the bylaws and the referendum question to the Province for approval.
6. Share information on the program with the community prior to referendum. The intent of this work is to help the community understand the benefits of the initiative and answer questions about the proposed program. It is important that residents understand that the service represents the diverse (and at times divergent) interests of the community. This should be reflected in the communications materials (e.g. if funding permits, a video showing a cross-section of the community and their interest in watershed health may be helpful).
7. Hold the referendum.
8. On successful completion of the referendum (certified by the Province) hold the final reading of the financing and service area bylaws at which point the service area effectively is effectively established.[96]
9. With a funded service (or if the community does not support a service), the RDCK may choose to pursue additional funding from the CBT, Real Estate Foundation, BC Hydro, Fortis BC, etc.).

Timing: Late 2021 - 2022 (see Appendix D).

Cost: Estimated $20,000-$100,000, depending on approach, including staff time. This cost can be reimbursed from the service area, if approved.

Figure 9: Benefits of a RDCK Regional Watershed Protection Initiative

[96] If municipalities are interested in participating, they can decide to participate without going to referendum.

Approach and Timeline

In order to support improved watershed protection, the efforts of the RDCK must be:

- **Clearly representative of the community as a whole,**
- **Credible, and focused on evidence-based decision-making, and**
- **Demonstrate respectful collaboration with stakeholders and other levels of government including First Nations.**

Throughout these steps, there must be a focus on building trust, respect, and transparency. Complex water problems require patience and collaboration to fix.

Table D1 in Appendix D provides a timeline showing the suggested sequencing and timing for each recommendation.

The 'Bigger Picture'

The POLIS Water Sustainability Project has developed a Handbook for Water Champions, which describes the steps involved in taking a greater role in watershed governance. [97] These steps, shown in Figure 10, provide a helpful framework for understanding how the proposed recommendations in this report fit into the bigger picture of watershed governance.

Recommendation #1: Establish organizational capacity to pursue recommendations: This recommendation has many similarities to *'Stepping Stone One: Champions and Commitment'*. It encourages the RDCK to build support within the organization to start taking action for water and prepare for more intensive work down the road.

Recommendation #2: This recommendation has many similarities to *'Stepping Stone Two: Project and Pooling Knowledge'*. It encourages the RDCK to foster positive relationships and trust through conversations and joint projects, in order to support longer-term collaboration with First Nations, provincial government, and watershed stakeholders.

Figure 10: Source: Handbook for Water Champions by the POLIS Water Sustainability Project

Recommendation #3 and #4: This recommendation has many similarities to *'Stepping Stone Three: Shared Visioning and Setting Priorities'*. It encourages the RDCK to work with stakeholders

[97] https://poliswaterproject.org/files/2019/04/A-Handbook-for-Water-Champions_web_final.pdf

and other levels of government in a strategic planning process to develop a vision, priorities, and an inventory of action items for a regional watershed protection service.

Recommendation #5: This recommendation has many similarities to *'Stepping Stone Four: Use Local Resources and Authorities'*. It encourages to RDCK to pursue sustainable funding so that the organization can be ready and able to address watershed challenges.

Once the foundational work has been done in Recommendations 1-5, the RDCK can work with partners and stakeholders through a regional watershed protection service to move onto the next stepping stones, which may include *Stepping Stone Five: Advise and Exert Influence*, *Stepping Stone Six: Watershed Planning*, and *Stepping Stone Seven: Share Authorities* (if granted by the Province).

Figure 11 provides an overview of the recommended actions and their suggested timing. The figure also has examples of actions that could be taken if an integrated watershed service was developed in the RDCK.

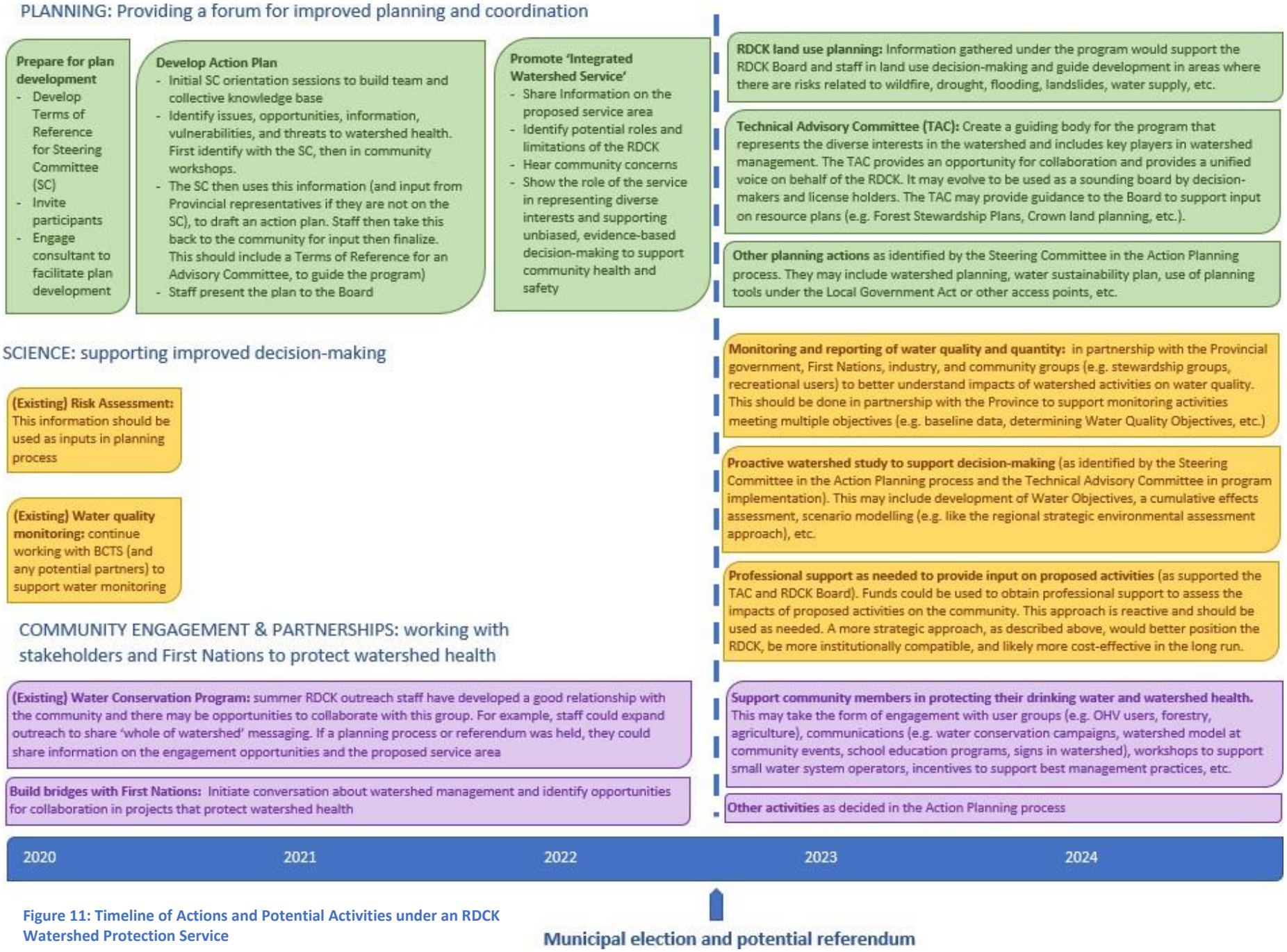

Figure 11: Timeline of Actions and Potential Activities under an RDCK Watershed Protection Service

Conclusion

While there are many aspects of watershed management that are under the jurisdiction of provincial and federal governments, there is a clear role within the existing system for the RDCK to take action to protect watershed health.

As a regional government, the RDCK is in a good position to work with other levels of government and stakeholders to identify and develop responses to water challenges. Through a regional watershed protection service, the RDCK could increase capacity for watershed protection, improve inter-jurisdictional coordination, enhance decision-making, and support communities in addressing water issues.

In order to take action to protect watershed health, it is recommended that the RDCK take the following actions:

1) Develop organizational capacity,
2) Strengthen relationships with Indigenous and provincial governments, industry, and community partners,
3) Create a forum for inter-agency collaboration,
4) Develop a clear vision and plan for a regional watershed protection initiative, and
5) Pursue a sustainable funding.

By taking these actions, the RDCK can support communities in maintaining the healthy and vibrant watersheds that are essential to the economic, social, environmental and cultural wellbeing of the region.

Appendix A: Data and Information Sources

Table A1: Stakeholder and Government Contacts

Organization/ Stakeholder	Case Study Area	Type of Stakeholder	Name	Contact Status (2019)
MFLNRORD, Resource Operations Manager	0. All	Government	Grant Walton	Phone discussion, July 11
MFLNRORD, Forest Manager Officer, Forest Practices Branch	0. All	Government	Dave Maloney	Phone discussion, July 31
MFLNRORD, Manager, Land Policy and Programs, Land Tenures Branch	0. All	Government	Vera Vukelich	Phone discussion, July 10
MOECCS, Director, Watershed Sustainability	0. All	Government	Jennifer Vigano	Phone discussion, Aug 19
Interior Health Authority, Small Water Systems Specialist, EHO	0. All	Government	Robert Birtles, Chris Russell	Left voicemail with both multiple times through August and October. No response.
MFLNRORD, Section Head, Water Stewardship	0. All	Government	Jennifer Andrews	Phone discussion, Oct 16
MOE, Water Policy Advisor	0. All	Government	Greg Tyson	Phone discussion, Oct 15
Interior Health Authority, EHO	0. All	Government	Renee Ansel	Phone discussion, Oct 23
MFLNRORD, Research Program, Research Hydrologist	0. All	Government	Natasha Neumann	Phone discussion, Oct. 22
MFLNRORD, Director, Strategic Initiatives	0. All	Government	Russ Laroche	Phone discussion, Oct 24
MFLNRORD, Section Head, Land Authorizations	0. All	Government	Sharon Dailey	Phone discussion, July 31
RDCK	0. All	RDCK Waterworks	Tanji Zumpano	Phone discussion July 22, Oct 16, prior input as part of Community Watersheds Project (CWP)
RDCK	0. All	RDCK Planner	Dana Hawkins	Phone discussion, Jan. 21, 2020.
Whitehead WWD	1. Bourke, Sitkum & Duhamel CWs	Waterworks		Obtained Info from Duhamel Watershed Society (Randi Jensen), Aug. 12

Organization/ Stakeholder	Case Study Area	Type of Stakeholder	Name	Contact Status (2019)
Six Mile WUC	1. Bourke, Sitkum & Duhamel CWs	Waterworks	Tom Newell	Obtained Info from Duhamel Watershed Society (Randi Jensen), Aug. 12, prior input into CWP
Duhamel Watershed Society	1. Bourke, Sitkum & Duhamel CWs	Environmental	Randi Jensen	Obtained Info from Duhamel Watershed Society (Randi Jensen), Aug. 12
Bourke Creek Improvement District	1. Bourke, Sitkum & Duhamel CWs	Waterworks	Carmen Davis, Suzy Hamilton	Prior interview as part of CWP
Sitkum Improvement District	1. Bourke, Sitkum & Duhamel CWs	Waterworks	Alex Wallach	Prior interview as part of CWP
Erickson Water System (Town of Creston, RDCK)	2. Arrow Creek Community Watershed	Waterworks	Tanji Zumpano	Phone discussion July 22, prior input with CWP
RDCK: Ymir Water System	3. Quartz Creek Watershed	Waterworks	Tanji Zumpano	Initial contact July 22, reviewed documents and reports related to Request for Investigation (Section 29)
Cooper Creek Cedar	4. Argenta Watershed Area	Industry	Bill Kestell	Called Aug. 13, Aug 15
Wildfire mitigation group	4. Argenta Watershed Area	Individual	Rik Valentine	Phone discussion, Aug. 13
Individual	4. Argenta Watershed Area	Environmental	Greg Utzig	Phone discussion, Aug. 12
Harrop Procter Co-operative Community Forest	5. Harrop-Procter	Industry/ Community	Erik Leslie	Phone discussion, Aug. 13
Harrop Procter Community Co-Operative (Community Forest)	5. Harrop-Procter	Environmental	Dwain Boyer	Phone discussion with Erik Leslie, Aug. 13
Procter Creek Improvement District	5. Harrop-Procter	Waterworks	Ken Foot	Prior interview as part of CWP
Sandy Cr/ Granite Rd WUC	5. Harrop-Procter	Waterworks (downstream)	Jim Thast	Prior interview as part of CWP
Deer Park WUC	6. Deer Creek Community Watershed	Waterworks	Howie Karn	Prior interview as part of CWP
Deer Park Recreation Society	6. Deer Creek Community Watershed	Community and Waterworks	John Erickson	Phone discussion, Aug 15.

Table A2: Information and data sources for case study overview

Reference/Resource	Format	Source	Comments
Administrative Boundaries			
Case study boundaries	GIS	RDCK	
Electoral Area boundaries	GIS	RDCK	Includes RDCK boundary, Indian Reserves, Municipal boundaries
First Nations Statement of Intent boundaries	GIS	BCDC	
First Nations Consultative Areas	GIS	BCDC	
First Nations Treaty Areas	GIS	BCDC	
Cadastre	GIS	RDCK	
Natural Resource Districts	GIS	BCDC	
Regional Health Authority boundaries	GIS	BCDC	
Community Watershed boundaries	GIS	BCDC	
Provincial Forest	GIS	BCDC	
Crown Land Dispositions (Land Act)	GIS	BCDC	Included reserves
Water Features			
Streams, waterbodies	GIS	BCDC	
Current Drinking Water Use			
Water Licenses (groundwater and surface water)	GIS	BCDC	
Water System (Points)	GIS	BCDC	
Water Users Communities	GIS	BCDC	
RDCK Water Service Area boundaries	GIS	RDCK	
Drinking Water Sources (PODs)	GIS	BCDC (Health)	
Survey of water systems in community watersheds	GIS	Elucidate Consulting	Raw data from surveys from 2015-2018
Watershed Uses			
Land use zoning and OCP land uses	GIS	RDCK	
Agricultural Water Demand Model Report for the Regional District of Central Kootenay	Report	RDCK, MOA	
Traplines	GIS	BCDC	
Guide Outfitters	GIS	BCDC	
Crown Land Leases	GIS	BCDC	
Range Tenure	GIS	BCDC	
Forest Tenure Managed License	GIS	BCDC	
Mineral Titles	GIS	BCDC	
Hazards/Threats/Concerns			
Flood and Steep Creek Geohazard Risk Prioritization (BGC Engineering)	GIS, Report	RDCK	Primary reference for geo-hazard risk
Floodplain mapping	GIS	RDCK	
Non-Standard Flooding and Erosional Areas	GIS	RDCK	
Community Wildfire Protection Plan datasets	GIS	RDCK	Assessed according to Fire Threat
RDCK Assets	Unavailable	RDCK	Critical assets and infrastructure
Areas of development/growth pressure	Unavailable	RDCK	
Forest Practices Board Reports	Reports	FPB	

Reference/Resource	Format	Source	Comments
Anecdotal concerns by case study area	List	RDCK staff, stakeholders	Staff requested input from several Directors
General community concerns	Reports, news, websites	Internet search, materials provided by RDCK	Included communications regarding Request for Section 29 Investigation (Ymir waterworks)
Community Watersheds Project data	Raw data/ intermediary results	Elucidate Consulting	Including raw data from water supplier survey, data from ILRR on land use and activities in community watersheds, Crown Land Registry query regarding percentage of land ownership.
Kootenay & Boundary Region Adaptation Strategies	Report	BC Climate Action Initiative	
Websites of community organizations including: Harrop-Procter Community Co-operative, Creston Community Forest, Friends of Kootenay Lake, Columbia Basin Watershed Network, Living Lakes Canada (North Kootenay Lake Water Monitoring Network), Wildsight, Yellowstone to Yukon Conservation Initiative, Fields Forward Society, Ymir Community Watershed Society, Duhamel Community Watershed Society, Salmo Streamkeepers Society, Mainstreams, Duhamel Community Watershed Society, Kootenay Resilience, Cooper Creek Cedar,	Websites	Organizations suggested by RDCK staff and stakeholders	

Appendix B: Policy and Terms of Reference for Watershed Advisory Groups

Table 10: References for Watershed Advisory Groups

Organization	Guiding document	Resource
Fraser Basin Council	Charter for Sustainability	Online: https://www.fraserbasin.bc.ca/about_charter.html
Cowichan Watershed Board	Cowichan Watershed Board Governance Manual	Online: https://cowichanwatershedboard.ca/wp-content/uploads/2019/08/CWB-Gov-Manual-Version3-Sept-24-2018.pdf
Regional District of Kootenay Boundary	Kettle River Watershed Advisory Committee Terms of Reference	Figure 12, Figure 13
Cowichan Valley Regional District	Example of MOU with Cowichan Tribes Terms of Reference for Advisory Committee not available	Online: https://www.cvrd.bc.ca/DocumentCenter/View/7997/MOU---Cowichan-Koksilah-Flood-Management?bidId=
Regional District of Nanaimo	Drinking Water and Watershed Protection program Technical Advisory Committee Terms of Reference	Figure 14, Figure 15
Nicola Basin Collaborative	Nicola Basin Collaborative A Strategic Plan Design For Communication, Projects, And Research In the Nicola River Basin	Online: https://www.fraserbasin.bc.ca/_Library/TR_2017/nicola_plan_design_2017.pdf
Nicola Watershed Pilot	Nicola Watershed Pilot MOU	Online: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/nicola_watershed_pilot_mou_-_signed_2018.pdf

Regional District of Kootenay Boundary

Kettle River Watershed Advisory Council

Terms of Reference

Purpose

To set the stage for a collaborative and inclusive approach for watershed management in the Boundary Area; and provide a forum to share information and generate ideas to manage Boundary watersheds in a manner that considers the environmental, social, economic and cultural benefits to residents and visitors. The Kettle River Watershed Advisory Council (the Council) will:

- Provide advice regarding implementation of priorities and strategies in watershed related plans[1];
- Provide advise on response to drought;
- Provide advice regarding the annual work plan; and
- Provide or recommend specialized expertise for ad hoc committees that may be created from time to time.

Membership

Members are appointed for two year terms by the Regional District of Kootenay Boundary Board of Directors. Voting members should ideally be representative of the categories listed below and be representative of the geography of the Boundary area. The Board expects a level of commitment from the members and the ability to attend regular meetings.

Voting members includes:

- Forestry – Large Tenure Holder (Two)
- Forestry – Small business (Two)
- Industry (Two)
- Mining (Two)
- Agriculture (Two)
- Stewardship or Environmental Group (Two)
- Tourism and Recreation (Two)
- Water Purveyor (Two)
- Members at large (Two)

[1] Examples are the Kettle River Watershed Management Plan, Christina Lake Watershed Management Plan and the Boundary Drought Management Plan

Figure 12: Kettle River Watershed Advisory Council Terms of Reference (page 1)

Non-voting members represent various levels of government and First Nations. Participation of non-voting members may vary depending on plan priorities and their availability.

Non-voting members include:

- Boundary Directors of the RDKB Board
- First Nations including, but not limited to: the Okanagan Nation Alliance, the Ktunaxa Nation, the Secwepemc Nation, the Syilx Okanagan Nation and their member bands.
- Representative(s) from the state of Washington
- Ministry of Agriculture
- Ministry of Forests, Lands and Natural Resource Operations and Rural Development (Ecosystems and Licensing)
- Ministry of Environment
- Ministry of Health, Interior Health

Selection of Chair and Vice-Chair

At the fall meeting of the Council, a Chair and Vice-Chair will be elected, by secret ballot, from the voting members. The selection process will take place each year at the fall meeting.

Meetings

- RDKB staff will create meeting agendas and record minutes.
- Meetings will take place three times per year: a meeting in late summer will be held to discuss the draft work plan for the following year; a meeting in the spring will be held to discuss the final work plan; and a meeting in late fall will be held for an annual review of the work accomplished over the year.
- All meetings are open to the pubic. A question and answer period will be included at the end of the agenda to allow members of the public to speak.
- Quorum, which is the majority of the voting Council members, must be achieved to hold a meeting and pass resolutions.
- For decision making purposes, the Council will attempt to achieve consensus but otherwise decisions will be made by majority vote of those present at the meeting.

Compensation

Voting members, or their alternate, serve without remuneration except for mileage to attend meetings of the Council.

First Draft to BCDC	February 2019
Second Draft to BCDC	August 2019
Board of Director's Approval:	Pending at August 2019 meeting
Due for Review	August 2020

Figure 13: : Kettle River Watershed Advisory Council Terms of Reference (page 2)

DRINKING WATER & WATERSHED PROTECTION
TECHNICAL ADVISORY COMMITTEE
TERMS OF REFERENCE

Revised: June 27, 2017

Purpose

The primary role of the Drinking Water & Watershed Protection Technical Advisory Committee (DWWP-TAC) will be to advise the Board on the review and implementation of the Drinking Water and Watershed Protection Service.

Committee Roles and Responsibilities

The DWWP-TAC will:

- provide recommendations to the Board through the Committee of the Whole regarding activities relating to the Drinking Water and Watershed Protection program;
- participate on smaller ad-hoc committees dealing with specific issues or tasks;
- provide advice and feedback on consultation activities with service area stakeholders;
- provide input and feedback on technical reports, discussion papers, and other documents prepared for the committee's information;
- review and become familiar with the Drinking Water and Watershed Protection service;
- review and become familiar with the existing state of drinking water protection in the RDN;
- identify tools and techniques to be employed in the monitoring and evaluation of the Drinking Water and Watershed Protection service and its implementation; and
- make recommendations to increase the effectiveness of the Drinking Water and Watershed Protection service.

Membership Criteria/Selection

The committee will consist of 19 members. Members will be selected by the Board either through an application process or by appointment by the member's organization. Membership representation will be as follows:

4 members	Staff member from the RDN, City of Nanaimo, City of Parksville and Town of Qualicum Beach
2 members	General Public (1 north / 1 south)
1 member	VIHA
1 member	Ministry of Forests, Lands, and Natural Resource Operations
1 member	Environment Community
2 members	Forest Industry
1 member	Water Purveyors' Representative
1 member	Hydrogeologist
2 members	Academic Community (1 From the Vancouver Island University)
1 member	Registered Professional Biologist
1 member	Islands Trust
1 member	Ministry of Transportation and Infrastructure
1 member	Fisheries and Oceans Canada

Figure 14: RDN DWWP TAC Terms of Reference (Page 1)[98]

[98] https://www.rdn.bc.ca/sites/default/files/inline-files/Drinking%20Water-Watershed%20Protection%20Advisory%20Committee%20ToR%20%28July%202017%29_0.pdf

The Manager of Water Services will Chair the committee. RDN staff members will be present in an advisory capacity. Membership may be changed as needs or issues arise and other organizations may be called on where partnerships are identified that would be of mutual benefit.

The application for committee membership for the General Public and Environment Community will be promoted through advertisements in local media. Applications must demonstrate the applicant's:

- willingness and ability to commit to volunteering the necessary time to the committee;
- interest in drinking water and drinking water protection issues in the RDN;
- willingness and ability to consider issues from all sectors and geographical perspectives within the community;
- experience related to drinking water and drinking water protection issues;
- willingness and ability to work towards consensus on issues being addressed by the committee.

Selection of members will attempt to create a committee with a balance of representation:

- geographically;
- demographically; and
- with a variety of interests and perspectives.

Term

Members will be appointed by the RDN Board for the duration of 2 years. Alternate member appointments will be approved by the Committee as required. No substitute members will be permitted. If a member must resign from the committee, their position will be filled through the application process (for at large members) or by appointments, as appropriate.

In general, annually there will be 3 meetings of the committee although, periodically more frequent meetings may be required. Meetings are expected to be held mid-day.

Members are expected to attend all committee meetings and participate in public consultation activities. Lack of attendance may result in members having their membership revoked at the discretion of the committee. There is no remuneration for participation on the committee but if committee activities coincide with meal times, meals will be provided.

Decision Making

Committee recommendations to the RDN Board will be made by consensus whenever possible. If necessary, votes may be taken and minority reports may be submitted to the Board in addition to the majority opinion.

Committee recommendations to the Board will be made through the Committee of the Whole.

DWWP-TAC meetings will be open to the public, however non-DWWP-TAC members will not have speaking or voting privileges. Delegations that wish to address the committee must seek approval from the committee through a written request. Acceptance of a delegate's request to speak to the committee will be at the discretion of the committee.

Figure 15: RDN DWWP TAC Terms of Reference (page 2)

Appendix C: Input on Recommendations

Table C1: Input on Draft Recommendations and Suggested Approach to Address

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
Recommendation #1: What are we doing well, what can we build on?	Director relationships with community groups & residents – local knowledge & expertise	To address these comments a sample Watershed Protection Steering Committee membership list will be added to Recommendation #1. It is suggested that it includes the following potential members based on these recommendations: - 2 Board members (Chair plus 1 Director) (to build on the Board members' relationships with community groups and residents, bringing local knowledge and expertise) - CAO (to represent RDCK staff and their with community groups and residents) - 2 members from MFLNRORD (resource operations and hydrology) - 1 member from MOE (water stewardship) - 3 forest licensees (suggest 2 large and 1 small tenure holder) - 3 First Nations (e.g. Ktunaxa, Shuswap, and Okanagan Nations) - 1 representative from the Columbia Basin Trust - 2 small water purveyors representatives (Improvement District plus small water system) - 1 representative from the recreation community (e.g. the Nelson and District Rod and Gun Club) - Potentially 1 representative from the mining industry and 1 from agriculture Additional Notes: - Suggest Board members appoint members of the public to the committee to increase the accountability and local representation. - Note the small water use working group is no longer - To address interest in action, a timeline will be developed, showing action ASAP, and next steps by month. - It may be appropriate to add a member of an academic community, if they bring necessary technical expertise. However, a review of the UBC, COTR, and Selkirk College did not identify expertise that was missing from the sample list, so in the interest of keeping the steering committee to a manageable size, a representative was not added. There may be a desire to adjust. - The Interior Lumber Association office was shown as 'permanently closed' so was not added to the forestry representative list. If it is still functioning, it may be appropriate to invite as forestry industry representatives. - It is suggested that a representative watershed group is invited to the steering committee table and watershed groups are contacted in the planning process during the engagement process. - It is recommended that the recreation representative come from a group that regularly uses
	Staff relationships with community groups & residents	
	Relationships with major licensees & CF (interface)	
	Leverage shared interests and on-going dialogue	
	Wildfire Community Protection Plans (WCPP) community education and awareness	
	Relationship to Rights Holders needs to be rebuilt (Yaqan Nukiy in Creston area)	
	Inclusivity with those involved in Civil Resolution Tribunal (CRT) process (Ktunaxa, ONA, Secwepemc)	
	Community education key (licensees) BCTS	
	Columbia Basin Trust for capacity building	
	Improvement Districts/Dikes need to be involved	
	Water Users (private & RDCK systems) – is the small water user working group still active?	
	Make it happen	
Recommendation #3: Create a cross-jurisdictional and multi-stakeholder forum to support improved collaboration in watershed management	Important to include Columbia Basin Trust (years of study and role as funder)	
	Members of scientific community (areas, disciplines)	
	First Nations	
	Province	
	Interior Lumber Association	
	Watershed groups	
	Mining – residual and incoming	

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
	Post-Secondary – UBC, COTR and Selkirk	the upper watershed such as an OHV or hunting and fishing group. These groups will also bring a different perspective to the conversation and represent a more diverse cross section of residents.
	Trusted community representatives (collaborative, distinct, understand different opinions, conservation groups like rod & gun club)	
Concerns about overall framework	Moving away from community level concerns	Add suggestion in plan development recommendation to be sure to balance regional and local concerns. Also note that a small and dispersed population is a big reason for why a regional approach is required. A regional approach will ensure that the right people are at the table. It will be a challenge to develop a regional approach that address local concerns. It will likely take time and while there may not be fast results in any particular watershed, it will have the greatest potential influence and more economical because it can take advantage of economies of scale.
	Different number of consumptive watersheds – we are different	
	1000's of watersheds & small population to support	
Recommendation #4: Develop an action plan for a regional watershed initiative	Board Committee	It is suggested that the initial steering committee is a short-term committee that develops plans and then creates a recommendation for a committee that will guide implementation. This is support flexibility and participation of individuals who are important in the initial planning phase (e.g. CAO) but may not want to be engaged long term in the implementation committee that advises the program. A working committee that reports to the Board has been noted by other regional districts as offering more flexibility and as being more effective than a Board committee.
	Suggested process: 1. Identify specific areas – start with known areas with data (Community Wildfire Protection Plans (CWPP), Water systems, stakeholder groups 2. Identify current data (e.g. land use) 3. Data review 4. Identify opportunities/grouping (e.g. water quality versus water quantity, wildfire, resource industry etc.…) 5. Implementation	Recommendation #4 will be updated to include potential action planning steps and use these ideas, where appropriate.
	More individual watersheds with many unique concerns	It will be a challenge to address local concerns with a regional program. This is a challenge faced by all regional watershed protection efforts and is even a greater challenge in the RDCK, due to the greater number of watersheds. For this reason, it may be appropriate for an action planning process to initially take a regional scale approach and then address local issues, as information and data is assessed and highlights local priorities.

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
Recommendation #5: Sustainable funding	Possible sources/partnerships: - Columbia Basin Trust - Look at Kootenay Conservation Partnership (KCP) as possible model and lessons learned. Their community survey and relationship/allies building are good best practices. - Taxation may be challenging given low population. It would be good to work out some scenarios with different amounts. But taxation could be a possible foundation that is then leveraged for additional funding (Real Estate Foundation, Vancouver Foundation, private interests such as Teck, BCHydro and FortisBC (noting that their mandates are inconsistent from year to year)	Approach: - CBT - add to steering committee and add not in recommendation 5 as potential funding source. - KCP: This is a valuable model in several ways but has a narrower focus and fewer stakeholders engaged. It will be important that a watershed protection initiative is developed very strategically, in partnership with agencies responsible for regulation (MOE), enforcement (MFLNRORD), and action on the ground (forestry companies). - Taxation: Agreed. Sustainable funding attracts more funding. There are many sources that can be pursued once a base sustainable funding is developed. In the planning process, several taxation scenarios should be proposed and considered. Will add potential funding sources mentioned to Recommendation 5.
	Have honest conversations	Noted in report
	How do we approve this type of program – referendum, necessity, OCPs? Is this an initiative which requires a public vote (or AAP) or do we just proceed?	As a regional district there are two options: Alternate Approval Process and Referendum. It is up to the RDCK Board which one they would like to choose. Other RD's (CVRD, RDN, RDKB) have used a referendum at the time of the municipal election.
	Question about the Province's 'skin in the game'. Discussion of Thompson Nicola pilot and the WSP, highlights importance of building relationships with First Nations, this is the most important.	Much of this is addressed in report.
Structure?	How could we source this regionally and still get to the ground level?	This will be an ongoing challenge. There are several ways that this could be approached: by taking early actions that are beneficial RD-wide, by conducting a strategic planning exercise (similar to the RDN snapshot report) that priorities which action in which place, etc. One thing that is clear is that although there may be a strong desire to see focused activity in one area, this will not work with a regional approach. Given the limited population and taxation base in the RDCK, it is recommended that a regional approach is taken. While this may mean delaying high cost-expenditures in certain areas, it will have longer term benefits. There will likely be opportunities to bring high-cost projects to areas where it is desired, through partnership with other agencies (e.g. if the Province, local stewardship group, water purveyor, and RDCK is interested in seeing a high cost project proceed in one watershed, the RDCK could, through a watershed protection service, provide support 'in principal', support administration, and/or contribute a base amount, to initiate the project).
	What are we going to do if we start? What does a group look like?	These are the sorts of question that would be addressed in the planning process. The report will be updated with suggestions for a steering committee.
	How can we divide into different regions – spatially or cultural or geographic characteristics?	This will be an important consideration in the planning process. It is likely advisable to break the RD into sub-sections, based on watershed boundaries, hopefully aligning to some degree with the Electoral Areas boundaries. This would be a relatively simple task that could be done easily by the RDCK GIS, Development Services, and Environmental Services groups. It is outside the scope of this project. This suggestion will be added to the action planning section.
	What is an appropriate scale – CK or Basin for regional approach? Or Region/sub-regional/area specific?	See above. Important question.

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
	Start with the case studies identified in the report and others that are known and do a layer of pilots experimenting with different structures.	While it is understood that local engagement and management is beneficial there are several challenges with this approach. These challenges include: it will be difficult to get the decision-makers at the table for small areas, and there will be challenges obtaining sufficient resources for smaller areas. The RDCK will be taken more seriously by decision-makers if a strategic local government-led approach is taken at a regional level. There are also economies of scale with a regional approach. A regional approach is recommended over smaller case study areas.
	Use the information that is provided – risk assessment, wildfire, health and land use etc…	Several of the listed data sets were originally used in the case study assessment. This included information on geohazards, interface fire risk, seasonal drought/low flows, forestry concerns, cumulative, historical, and unknown impacts ,and competing water demands. Each case study area was given a risk rating. However, RDCK staff recommended that they be removed, as the risk assessment work that is currently underway will make most of the datasets void soon.
	What size of groups for stakeholders?	Uncertain of the intent of this question. A sample committee membership will be provided in Recommendation #3.
Authority	Understand legal/authority/influence	This project involved substantial research to identify potential areas for influence. It is advised that the recommendations (including the suggestions for what a watershed protection service might look like) are pursued in order to address the desire to greater influence.
	Committees of authority – what is that?	This likely refers to the comment provided by Christina about concurrent spheres of authority (see description of this in the report: Task #1)
Additional comments	There is a difference in scope and scale for water quality (very specific to certain waters systems, not global) vs water quantity (a climate change issues facing all systems)	This will be noted in the action plan development recommendation. When developing a plan, the approach taken to address water quality and quantity may vary in scale: water quantity concerns (surface water) are likely to be more regionally consistent as they are influenced by weather, climate, and topography, whereas water quality concerns may vary more from watershed to watershed and solutions may require a watershed-specific approach.
	The RDCK is a diverse area, with many small watersheds and communities. Any watershed protection effort must recognize this diversity.	Further work is needed to identify how a regional approach can address local challenges. This will be noted in Recommendation #4 (plan development)
	Directors have different ideas regarding the role of the RDCK in watershed protection, particularly related to 1) RDCK involvement in funding and 2) the area of interest (scale).	Further action needed to gain alignment on core aspects of the watershed protection effort including: the role of the RDCK, area of interest (scale), approach to funding, etc. One way to do that is be identifying the pros and cons of each approach for each element (scale, funding, etc.) and work to build consensus. This could be done in several ways (e.g. in the action planning process by a TAC or with the Board prior to an action planning process). Working through these core elements could help identify common goals and areas of consensus. In order to support knowledge transfer and support Board alignment with planning process, it is recommended that at least 2 Board members are involved in the steering committee.
	With regards to scale of action, some suggested an approach that focused on case study areas, where there is public support. Others saw the value of a regional approach, recognizing that it may be more difficult to generate funds and interest from other levels of government in smaller geographic areas with limited populations. Further work is needed to gain alignment in this area.	A regional approach is recommended, as the challenges are regional, and this approach will support economies of scale.

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
	There is an interest in better understanding authority of local government over activities on Crown land	The following information was provided by RDCK planning staff. The local government bylaws section of the report (Task 1) was updated to reflect this information. On Provincial Crown Land (in the Interpretation Act): 14 (2) ... an enactment that would bind or affect the government in the use or development of land, or in the planning, construction, alteration, servicing, maintenance or use of improvements, as defined in the Assessment Act, does not bind or affect the government. - Where an enactment includes all local government bylaws such as zoning and OCP Provincial Crown Land Tenants: Case law has shown that the tenants of Provincial Crown Land are not immunized from local land use regulations under s.14(2). Crown Agents and Crown Corporations: In establishing the various entities that it uses to implement public policy, the province decides on a case by case basis how much of its immunity to pass along. In general, the legislation establishing any Crown agent or corporation must be examined to determine the extent of the immunity it may have been given e.g. BC Hydro and Power Authority Act
	Several suggested jumping to recommendations 3 and 4 and developing a TAC and plan, as there is an interest in problem-solving and action planning	A timeline will be created to the report showing the timing of recommendations and noting that these recommendations occur concurrently with 2.
Introduction	Notes we have 35 watersheds within the RDCK, are these the 'designated' ones or actual ones? I assume those with the designation that is no longer available to make. It would be a good understanding to have the actual number of watersheds that provide drinking water, not just those with the designation given that authority to designate watersheds as such no longer is used	The 35 refers to designated 'community watersheds'. There are likely hundreds of watersheds that are used as drinking water supply sources that are not designated. A count of all watersheds in the RDCK that act as drinking water supply sources would be a simple exercise, but would require this question to be better defined (e.g. would surface water and groundwater sources be considered? seasonal use? what resolution of watershed would be used?)
Relevant and Existing land use regulation	Can we zone crown land? Most watersheds are crown land either under tenure for resource extraction or parks	Crown land can be zoned. There are limits to the authority that local government has on Crown land with zoning. See above comment provided by RDCK Planners. The report has been updated to reference the Interpretation Act.
Argenta Case Study	Report indicates there are 37 water licenses in the area, online BC webmap shows more than 50 which is what I had in my files. Also indicates there is only one commercial enterprise in the area, there are at least 4 commercial farms plus a few other businesses	The water license count is stated as: "37 domestic and 1 commercial enterprise". This is based on data obtained from the BC Data Catalogue on August 28, 2019 and is referring to water licenses where the 'license status' is current, the 'source' is a surface water source, and the water license 'purpose' is a potential drinking water source (e.g. Domestic, Waterworks, Commercial Enterprise, etc.). This does not refer to expired licenses, licenses from groundwater sources, and licenses for purposes that are not drinking (e.g. irrigation). Some of the other licenses that are viewed are likely in one of those categories.
	No mention of how many households in the study area?	BC Assessment data was requested but not provided. The report is based on the available data.
	Purcell Conservancy is park protected land that feeds all of the watersheds in this area, but it not identified in the land designation graph	The Purcell Conservancy (as mapped in the BC Parks, Ecological Reserves, and Protected Areas dataset available on the BC Data Catalogue) is not within the Argenta Case Study area, as referenced in the map provided by the RDCK GIS staff. The land designation graph only refers to land in the mapped case study area.

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
Stakeholder interviews	Only two people were interviewed for Argenta? I have four committees (at minimum) working on everything from park expansion to landscape level fuel planning and community forest work. Three if you include the call to the licensee. This seems like a very small catchment for a good understanding of stakeholder input/concerns. I would consider this an insufficient amount of stakeholder interviews.	RDCK staff advised that the case studies were intended to provide a high-level cross-section analysis of regional issues. The following was the distribution of effort for the case study work (10.5 hours for each case study area): - Review and analysis of available data, information and reports (4.5 hours). This included a review and analysis of water licenses, land tenures, land use, zoning, geohazard risk data (flood and steep creek data), wildfire risk (from CWPP data), drought risk, AWDM results, and historical, current, and potential cumulative impacts. However, RDCK staff stated that because the risk assessment work was underway and should be relied on more heavily, the risk assessment portion of the case study analysis was to be removed. - Stakeholder interviews (3.5 hours): included obtaining contact information, stakeholder mapping, preparing interview questions, follow up calls, interviews (approx. 1 hour each, which meant 2 interviews in each case study area), and analysis. In the Argenta area, two stakeholders (Greg and Rik) were interviewed and there were 3 phone calls made to another stakeholder who did not respond. - Additional interviews with RDCK staff, Provincial staff, and local consultant (Martin) to understand issues in each case study area (1 hour) - Reporting (1)
Establishing a service for RDCK	Must be based on data; heavy focus on consultation that negates actual facts	A service would be most effective if it were to focus on data and information. Consultation is not intended to negate or replace facts. The intent of the consultation is to obtain input from professionals and locals with expertise to support data and information gathering.
	Should do something similar to the aquifer study for I and j	These types of actions would be the sort of actions that could be supported under a drinking water and watershed protection service.
	There is a risk the service would be another form of the klp which is primarily knowledge\data sharing and collation not enforcement or action for improvement	Agreed. This is exactly why it is recommended that the watershed protection initiative be done very strategically, in partnership with agencies responsible for regulation (MOE), enforcement (MFLNRORD), and action on the ground (forestry companies).
	RDN service is most interesting, data collection leading to land use planning with both watershed and interface fuel/fire risk (forestry=which is the natural asset to both) as goals + small water system network supports	Agreed. There are many elements of the RDN model that should be considered in the RDCK. These includes the strategic collection of data to inform land use planning, the challenge of delivering a region-wide project that address local issues, the small water system supports, the whole of watershed thinking, etc.
	Out of recommendations, 2+3 should be one	There is some overlap in the recommendations and the report has been updated to reduce redundancy (there was also feedback that 3 and 4 should be combined). It is suggested that #2 remains, as there may be stakeholders (e.g. forestry companies) or potential partners (e.g. First Nations, municipalities) that decide not to participate in the forum or planning process, but with whom the RDCK should focus on relationship-building, as they will be important players in the future. The report will be updated to include a timeline showing the relationship between recommendations.

Area of Report	Comment/Feedback	Response and/or Suggested Approach to Address
	Data of case studies is further explored; develop watershed plans for select areas, consultation is part of that process	While watershed planning is a valuable exercise, it requires a very high level of investment in one small area and does not have the ability to influence decision-making. It is suggested that other options are explored as well. For example, it would be more effective and less costly to work with provincial government staff to develop tools that have authority over land use and activities, such as Water Objectives. These can be developed at a much lower cost, affect a larger area, and have greater authority (e.g. can be used to influence forestry and mining activities on Crown land). Many groups in BC have developed watershed plans as a first step, prior to taking actions such as data gathering and development of regulatory tools. As there are limited resources and many watersheds in the RDCK, it is suggested that it would be more appropriate to develop a program that can support these action items: data gathering and development of regulatory tools, and develop watershed plans if, and as, needed once foundational work has been done.
	Important to remember level of authority is negligible; note of “supporting crown decisions opposed to influencing “erodes this process having a purpose	The report suggests providing better information to "***support*** provincial ***decision-making***", not "support crown decisions". The intent is to improve the information used by the Province in decision-making, as currently the Province commonly makes decisions with limited information and/or the information is provided by a resource user. It is the intent of this comment to suggest that the RDCK work with the Province to develop data and information that can be used as input to decisions. If the RDCK can work with the Province to obtain data and information on behalf of the community as a whole (representing diverse interests, including water systems, residents, resource users), it would likely promote decisions that are more beneficial to the community as a whole. This section of the report has been updated in the interest of making this clearer.

Appendix D: Timeline of Recommended Actions

Table D11: Timeline of Recommended Actions

RECOMMENDATION	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35
Recommendation #1: Establish organizational capacity to pursue recommendations																																			
1.1: Develop a report identifying the pros and cons of a regional watershed protection effort and include a three-year plan (2020-2022) showing how staff time and funding would be allocated to pursue Recommendations #2-5.	■																																		
1.2: Present this three-year plan to the Board and request approval to move forward with the plan.		■																																	
1.3: If Board direction received, proceed to Recommendations #2-#5.			■																																
Recommendation #2: Strengthen relationships with partners, First Nations, and stakeholders																																			
2.1: RDCK leadership (Chair) to contact the Ktunaxa, Shuswap, and Okanagan Nations and initiate a conversation on watershed protection, eventually discussing mutual goals and potential collaboration. Where possible, partner in watershed protection projects.			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.2 Contact provincial and regional health authority leadership in the region, expressing an interest in collaboration for watershed protection.			■	■																															
2.3 Contact watershed stewardship groups, expressing an interest in collaboration for watershed protection.					■	■																													
2.3: Continue existing watershed protection efforts (community engagement, watershed monitoring).	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Recommendation #3: Create a cross-jurisdictional and multi-stakeholder forum to support improved collaboration in watershed protection																																			

RECOMMENDATION	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35
3.1: Develop a Terms of Reference for a Steering Committee to guide plan development.																																			
3.2: Invite organizations to participate.																																			
3.4 The Steering Committee should develop a Terms of Reference for a Technical Advisory Committee																																			
3.5 TAC will also provide a forum for coordination of watershed efforts and interagency communications.																																			
Recommendation #4: Develop an action plan for a regional watershed initiative																																			
4.1: Engage a consultant to support plan development.																																			
4.2: Plan development																																			
4.3 Obtain Board approval of the Action Plan and request direction to proceed with public engagement on the concept																																			
Recommendation #5: Pursue sustainable funding for a regional watershed initiative																																			
5.1: Conduct public engagement, including public meetings and other communications.																																			
5.2: Report on the meetings and bring forward a proposed bylaw for funding the service.																																			
5.3: Decide on funding approach and approval process.																																			
5.4: Obtain a Board resolution giving first three readings to the financing and service area bylaws.																																			
5.5: Send the bylaws and the referendum question to the Province for approval.																																			
5.6: Communications prior to referendum.																																			
5.7: Hold the referendum.																																			
5.8: On successful completion of the referendum (certified by the Province) hold the final reading of the financing and service area bylaws.																																			