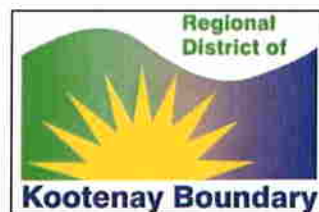


# Kettle River Watershed Management Plan

## Terms of Reference

October 2010



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## **1.0 INTRODUCTION**

Increasingly, residents of the Boundary region are expressing concern about the state of the Kettle River and its tributaries, primarily in terms of the diminishing flows during the summer months and the quality of the water due to land uses occurring along the river and its tributaries. The state of the watershed has in recent years also attracted the attention of those outside the basin, with the Outdoor Recreation Council of B.C. recently ranking the Kettle River the most endangered river in B.C. due to concurrent seasonal low flows and new and existing water extraction proposals and licenses.

It is within this context that the Regional District of Kootenay Boundary has decided to undertake the development of a watershed management plan for the Kettle River basin with broad participation from other agencies and stakeholders. It is hoped that a watershed management plan, when completed, will provide a strategic vision for the watershed with concrete actions to be undertaken by the various agencies and stakeholders who have a role in the management of water and land resources within the basin, including individual citizens.

The purpose of this Terms of Reference document is to outline the purpose, scope, objectives, and proposed structure of the watershed management planning process as it is envisioned. The document also outlines the roles that the various agencies, stakeholders, and the general public will play in the preparation of the watershed management plan.

## **2.0 KETTLE RIVER WATERSHED**

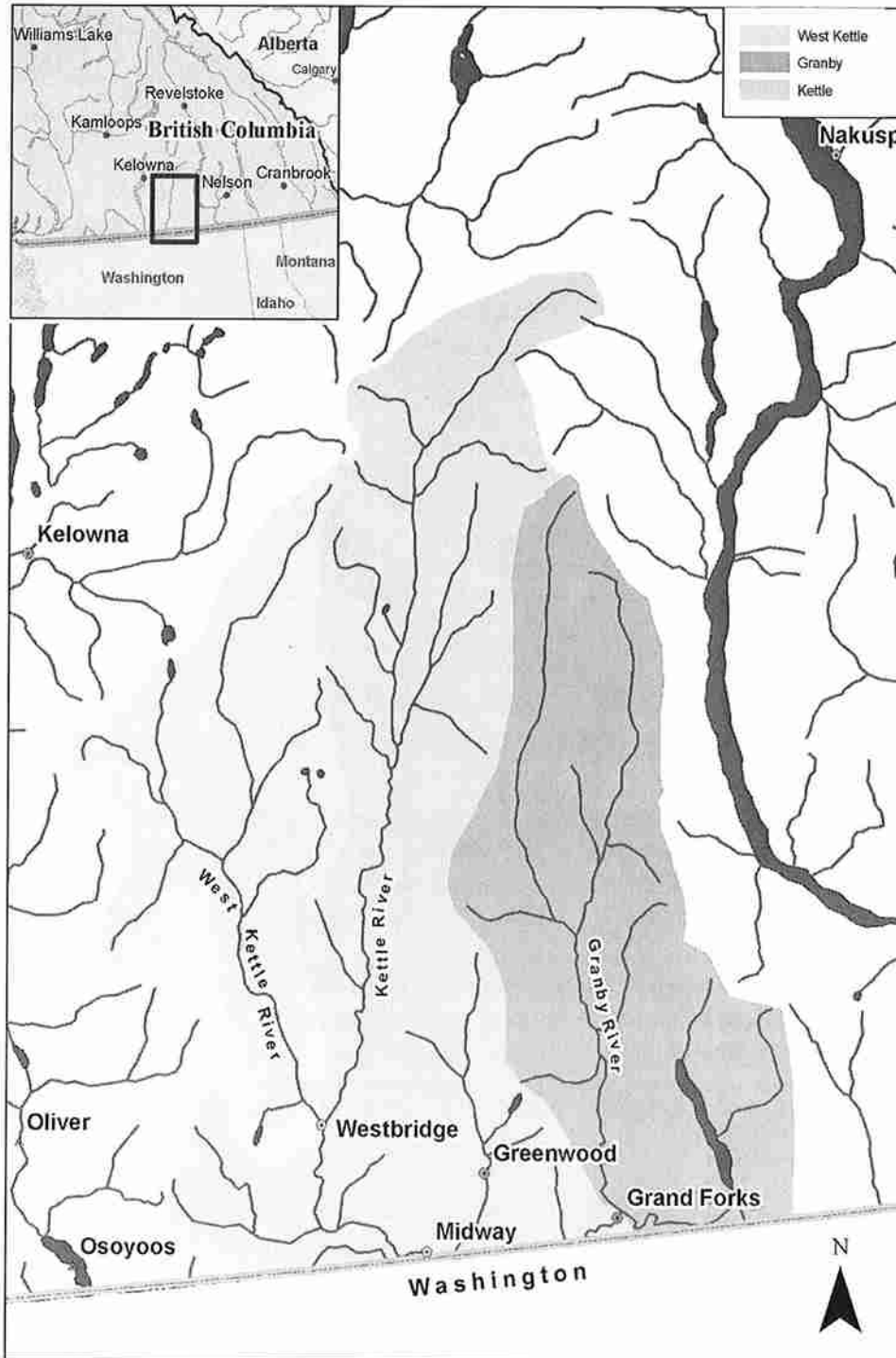
The Kettle River lies between the Okanagan and Columbia River valleys in the central part of southern British Columbia and northern Washington. The Kettle River is a 282 km (175 mile) tributary of the Columbia in the southern interior of British Columbia and northeastern Washington State. Its drainage basin is 11,000 km<sup>2</sup> (4,200 miles<sup>2</sup>), of which 8,230 km<sup>2</sup> (3,177 miles<sup>2</sup>) are in Canada and 2,650 km<sup>2</sup> (1,023 miles<sup>2</sup>) are in the United States.

In British Columbia, the Kettle River basin is divided into two large sub-basins by the Midway Range of the Monashee Mountains. The large western sub-basin is divided into two smaller sub-basins by the Beaverdell Range into the West Kettle River Valley and the Christian Valley. From its source at the outlet of Holmes Lake in the Monashee Mountains, the Kettle River flows through the Christian Valley and is joined by the West Kettle River at Westbridge. The Kettle River continues to flow south until it crosses the Canada/U.S. border at Midway, BC and Ferry, Washington.

The eastern large sub-basin of the Kettle River is drained by the Granby River. This sub-basin is located between the Midway Range to the west and the Selkirk Trench, which holds the Columbia River, to the east. Below Midway, the river loops south into the United States, through Ferry County, Washington, before flowing north back into Canada, passing through Grand Forks, BC where the Granby River joins. After flowing east for approximately 18 kilometres, the river turns south again at its confluence with Christina Creek. From there, the river crosses the Canada/U.S. border for a third time near the Laurier,

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Washington border crossing on Highway 395. It then flows south, joining the Columbia River near Kettle Falls, Washington. The Columbia River at this point is a large reservoir impounded behind Grand Coulee Dam, called Lake Roosevelt.



## 2.1 The Plan Area

The portion of the Kettle River watershed which is the subject of the watershed management plan is only that area located in Canada. Considering that the river crosses the border between B.C. and Washington in three locations, it is recognized that there are mutual interests and impacts to the two jurisdictions relating to the management of the Kettle River watershed. The watershed planning area, however, does not include portions of the basin within Washington. A separate watershed planning process was undertaken for that portion of the basin in the late 1990s under the provisions of the State of Washington's 1998 Watershed Planning Act. That multi-agency process, which was conducted with Ferry County acting as the lead agency, was discontinued after completion of Phase 2 of the process (Technical Assessment). Phase 3 (Planning) and Phase 4 (Implementation) were not undertaken.

## **3.0 KETTLE RIVER WATERSHED MANAGEMENT PLAN**

### 3.1 Approach and Planning Process

The Kettle River Watershed Management Plan is to be developed co-operatively with input from all levels of government and affected stakeholders, including residents of the plan area. The purpose of the plan is to establish a strategy and recommendations regarding the management of water and land resources in the area for the benefit of the users of those resources while maintaining the integrity of the natural environment.

The watershed management planning process will be conducted in a series of steps which will:

- Characterize existing conditions (technical assessment);
- Include a review and summary of relevant studies previously conducted in the watershed area, with identification of gaps between existing information and required information;
- Define watershed management goals and objectives;
- Identify and prioritize issues requiring action;
- Issue analysis, evaluation of alternatives, and recommended actions;
- Development of an implementation strategy regarding recommended actions.

The outcomes of the process will be documented in the Kettle River Watershed Management Plan.

The Kettle River Watershed Management Plan will be prepared through a process which is:

- Iterative – an adaptive plan that will follow the cycle of watershed characterization, planning, and implementation;
- Integrated and comprehensive – will emphasize the importance of the entire watershed and the interdependence of its components;
- Geographically defined – will be applicable within the boundaries of the Canadian portions of the Kettle River watershed;

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- Collaborative – the Kettle River Watershed Committee will work with all affected stakeholders to complete the plan, each partner sharing their organization’s expertise regarding the watershed;
- Proactive – it will consider expected future changes involving demographics, resource development /extraction, and land use changes and priorities related thereto.

Section 4.0 outlines the steps to be taken in completing the Watershed Management Plan.

### 3.2 Purpose

The Kettle River Watershed Plan is intended to provide guidance to decision-making authorities, resource managers, users and residents regarding water and land resources in the watershed. The plan will provide actions which may be undertaken to manage water resources in the Kettle River Watershed which:

- Balance water supply and use today and in the future;
- Protect the ecological function of the system;
- Increase the understanding of the Kettle River Watershed and the issues associated with it;
- Promote an ethic of water conservation throughout the watershed; and
- Has been vetted through a public consultation process with the watershed community.

### 3.3 Scope of Plan

The watershed management plan will address issues associated with water quantity and quality, as well as habitat and riparian area protection.

The main watershed issues to be addressed are the following:

- Availability of a secure water supply;
- Effects of climate change upon water supply;
- Mitigation strategies for drought;
- Mitigation strategies for flood hazard areas;
- Maintenance of surface and groundwater quality;
- Identification of connections between surface and groundwater supplies;
- Maintenance of adequate instream flows for fish and other aquatic organisms;
- Impact of land use throughout the watershed on water resources;
- Protection and restoration of habitat and riparian areas; and
- Constraints associated with limited water resources.

### 3.4 Objectives

To develop a collaborative watershed management plan for the Kettle River involving multiple government agencies, non-governmental stakeholders, and the general public which includes recommendations regarding:

a. Water Quantity

This will include recommendations regarding: water conservation options for all sectors (e.g., municipal, industrial, irrigation, etc.), water allocation considerations for resource managers; land use regulation considerations affecting water availability; mitigation strategies relating to drought and seasonal flooding; groundwater availability and management; etc.

b. Water Quality

This will include recommendations regarding land use and development considerations to protect the quality of the water supply, including the groundwater supply where aquifers are vulnerable to contamination.

c. Protection and Restoration of Habitat and Riparian Areas

This will include recommendations regarding actions which may be taken to protect and improve habitat and riparian areas in and adjacent to the Kettle River and its tributaries.

### 3.5 Intended Role of the Plan

The Kettle River Watershed Management Plan will be presented as a guidance document to all watershed stakeholders, including local, provincial and federal agencies that have a mandate or management responsibilities in the watershed. It is recognized that there are several statutory requirements and responsibilities which guide the actions of the various agencies involved in the management of resources within the watershed. The watershed management plan will not commit agencies to any actions which conflict with any statutory requirements. All stakeholders involved in the development of the watershed management plan will be asked to endorse the plan upon completion.

The Watershed Management Plan will link the issues of water quality, water quantity, and riparian habitat protection with the watershed's economic, environmental, and social priorities and community values. The plan will provide management direction in the form of recommended actions based upon collaborative stakeholder and broad community deliberation of the issues facing the watershed.

#### **4.0 STRUCTURE OF THE KETTLE RIVER WATERSHED MANAGEMENT PLAN**

The Kettle River Watershed Management Plan is to be completed in two phases. The first phase, a “state of the watershed” report will provide a technical assessment of the existing conditions relating to the watershed. The second phase, a watershed planning phase, will entail issue identification, evaluation of alternative means of addressing issues, and recommended solutions/actions to be undertaken. As these activities are occurring during the development of the Water Act Modernization process, as much as possible the Plan shall be developed to comply with any legislative or regulatory changes adopted, or which are likely to be considered.

##### 4.1 Phase 1 - Technical Assessment of the Watershed

A Phase 1 “State of the Kettle River Watershed Report” will be provided which describes in detail the current status of the watershed in terms of water quantity, quality, and habitat/riparian areas. This phase of the project is intended to provide a sound scientific base for decision-making in the watershed.

The report should contain, at a minimum:

##### Water Quantity

- An estimate of the surface and groundwater present in the plan area;
- An estimate of the water in the plan that is allocated under a water licence or any other form of water right;
- An estimate of the surface and groundwater actually being used in the plan area;
- Estimate of the water needed in the future for use in the plan area;
- Minimum thresholds required for instream flows to maintain the aquatic environment for fish and fish habitat;
- Identification of the location of areas where aquifers are known to recharge surface bodies of water and areas known to provide for the recharge of aquifers from the surface, and where these processes may change over time, including the effects of climate change;
- Identify the connections between surface water and groundwater, and where there are groundwater data gaps;
- Estimate of the surface and groundwater available for further allocation, taking into account the minimum instream flows required for fish and other aquatic organisms;
- Flooding history and identification of the most vulnerable properties in the plan area;
- Development of a water balance model for the plan area.

##### Water Quality

- An examination based upon existing studies conducted by provincial, state, and federal agencies, as well as reports from public interest groups and academic studies, of the degree to which established water quality standards are being met in the plan area;



## *Terms of Reference – Kettle River Watershed Management Plan*

- An examination based upon existing studies conducted by provincial, state, and federal agencies, as well as reports from public interest groups and academic studies, of the causes of any water quality problems or violations in the plan area, including an examination of information regarding land uses, pollutants, point and non-point sources of pollution, and the pollution carrying-capacity of water bodies in the plan area.

### Habitat/Riparian Areas

- The assessment shall take into consideration seasonal stream flow or level variations, natural events, and pollution from natural sources that occur independent of human activities;
- An examination of the legally established characteristic uses of the rivers and streams and adjacent riparian areas in the plan area and the impacts associated with those uses.

The report should include information documenting the data sources used to compile the above-noted information, as well as identification of data gaps with a discussion of technical information related to the watershed which is not readily available.

## 4.2 Phase 2 – Watershed Planning

Upon completion of Phase 1, the watershed planning phase will begin. Public participation during this phase of the project is required and considered to be essential to the development of an effective watershed management plan. A high degree of attention to public consultation during this phase of the planning process is necessary to ensure that adequate input is obtained and the plan reflects public attitudes and concerns.

### Establish Goals and Objectives of the Plan

Based upon the data provided during Phase 1 of the project, stakeholders and the public will work to establish achievable goals and objectives which will provide the basis for the recommended actions generated by the planning process.

### Issue Identification

It will be necessary to identify a set of priority issues that are to be addressed productively through the planning process. These issues may be identified through a combination of:

- Discussion among members of the Kettle River Watershed Committee;
- Input from other agencies, organizations, or interest groups invited to submit suggestions;
- Broad public involvement through public meetings, surveys, or similar means.

### Issue Characterization

Once the set of priority issues has been identified, each issue will need to be characterized. The objective is to develop an adequate understanding of each issue so that a sound basis can be developed for considering alternative solutions. Information and analysis may address:

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- The underlying causes of each issue;
- Who is involved or affected;
- Short-term manifestations;
- Long-term trends;
- Geographic distribution and severity across the plan area;
- Upcoming actions or decisions related to the issue;
- Ongoing activities that address some or all of the issue;
- Related programs and plan;
- Information available and missing; and
- Prioritization of issues (high, medium, low).

The information gathered during Phase 1 of the planning process will be utilized to analyze the extent, nature, and severity of each issue to be addressed. Basing the analysis of the issues identified upon the factual data accumulated as part of the technical assessment will help in prioritizing issues based upon their actual importance to the health of the watershed, rather than their perceived importance.

### Identification of Options for Addressing Each Issue

For each issue, a set of potential solutions should be identified. Both short and long term approaches should be considered. Several types of solutions may be considered, including:

- Specific projects (eg. a water storage project);
- Strategies based upon defined principles (eg. establishment of a regional water conservation strategy); and
- The establishment of a new institution (eg. a watershed management board) or a new management program with a defined process for making collaborative decisions among a defined group of participants.

### Evaluation of Options and Selection of Recommended Actions

Once the range of options has been identified to address each issue, the alternatives can be evaluated for recommended action. The Steering Committee, the Technical Advisory Committee, and the Stakeholder Advisory Group, as well as the general public will be engaged in this part of the process to determine the preferred actions to be pursued.

### Design Implementation Program

The plan will include an implementation program which specifies: the actions to be undertaken; the agency(ies) or organization(s) that will be responsible for undertaking those actions; and the general timeframe required to undertake them. Public awareness and education programs shall be included as an integral part of the report.

## **5.0 PUBLIC CONSULTATION AND STAKEHOLDER INVOLVEMENT**

### 5.1 Public Consultation Objectives

A detailed public consultation and communications plan will be developed to guide implementation of the consultation process. The details of this plan will be developed in consultation with the Kettle River Watershed Committee and stakeholders.

The public consultation process will:

- Promote effective communication between agencies responsible for watershed management, stakeholders and residents to identify the best management strategies for the watershed;
- Solicit input from stakeholders and the community at key stages of the process;
- Provide residents and stakeholders with an opportunity to understand the issues and resource management challenges being faced; and
- Incorporate community values into the planning process, together with the technical analysis.

### 5.2 Key Stakeholders

The Kettle River Watershed Management Plan process will be led by the Kettle River Watershed Committee, supported by a Technical Advisory Committee and a Stakeholder Advisory Group, and developed in collaboration with communities and stakeholders living and working in the watershed. Stakeholders will include representatives from the various government agencies having jurisdiction in the watershed as well as other representatives from the following sectors; agriculture, industry, recreation/tourism, environment, and first nations.

### 5.3 Roles and Responsibilities

#### Steering Committee

The Kettle River Watershed Committee will act as the Steering Committee for the plan and shall be appointed by the Regional District of Kootenay Boundary (RDKB) Board. The Committee will be made up of government representatives and appointed stakeholders.

#### Stakeholder Advisory Group

The Steering Committee shall appoint a Stakeholder Advisory Group with balanced representation from the various sectors in the watershed. Representation may include but is not limited to all government levels, First Nations, agriculture, industry, water purveyors, environmental groups, landowners, and recreation and tourism. The purpose of this Group is to provide public consultation and advice to the Steering Committee.

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### Technical Advisory Committee

The Steering Committee shall appoint a Technical Advisory Committee to provide technical and scientific guidance to the process and report back to the Steering Committee. This Committee will play a key role in the watershed planning process as identified in Section 4.1, above.

### Project Coordinator

A Project Coordinator will provide integration and coordination services for the planning process and be responsible to the Steering Committee.

## **6.0 PROCESS TIMELINE**

<b>Phase</b>	<b>Activity</b>	<b>Schedule</b>
Initiation		
Draft Terms of Reference	Completed	June, 2010
Finalize Terms of Reference	Completed	September, 2010
Develop RFP		Late 2010
Issue Request for Proposals		Early 2011
Hire Consultant(s)		Spring 2011
Develop Watershed Management Plan	Phase 1 - Technical Assessment of the Watershed Area	Begin mid – 2011. Expect 18-24 months
	Phase 2 – Watershed Management Planning	
Plan Approval		