One Water System Risk Management Planning Guide

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1. INTRODUCTION

Communities have various water systems (water, wastewater, stormwater, non-potable, and watershed) that are conventionally siloed, as has been common practice in British Columbia and throughout Canada. It is important to manage risks associated with these systems to safeguard public health and the environment. This is a major part of the work that professionals working with these systems do. However, the systems are getting more complex, have more interaction with each other, and are facing growing risks, considering climate change and other pressures. Further, the operation of the different water systems is only possible in the context of stable funding, robust organizations, public acceptance, and management of other non-technical sources of risk. Multiple organizations, Indigenous communities, and levels of government often have roles in the management of British Columbia's water systems.

One Water is "an integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs".[1] This governance and management approach considers all water from source to tap and sink to watershed to be one integrated system. A One Water approach strives for all drinking water, wastewater, non-potable water, and stormwater service providers serving a community and operating within a watershed to work together to deliver sustainable, resilient, equitable, and affordable water services.[2] In British Columbia, One Water has been circulating as a set of principles for several years. This Planning Guide aims to make the One Water approach more accessible, enabling a transition from principles to practice.

Risk Management is defined by the International Organization for Standardization in ISO 31000, as a group of coordinated activities to direct, control, and organize with regards to risk.[3]

In addition to the risks specific to each individual water system, a One Water approach to risk management considers risks arising from interactions among the water systems. One Water System Risk Management is also focused on risks associated with initiatives that aim to integrate planning, management, or infrastructure systems for drinking water, sanitary sewer, stormwater, and reclaimed water systems.

This Planning Guide has been written to help inform the risk management work being done in the water sector and is intended to be a resource to water utility staff and operators, community staff, and public health authorities and officials. A complementary set of Professional Practice Guidelines titled "Preparation of One Water System Risk Management Plans in British Columbia" have been developed to establish the duties and obligations expected of Engineering and Geoscience Professionals when engaged to apply a One Water lens to water system risk management in BC. These guidelines are available on the Engineers and Geoscientists BC website under "Guidelines and Advisories".

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[1] Blueprint for One Water (WRF, 2017)
[2] This definition was developed from reviewing various sources, including the Blueprint for One Water (WRF, 2017); Pathways to One Water (ForEva, 2015); USWA One Water Roadmap (USWA, 2016).
[3] https://www.iso.org/iso-31000-risk-management.html

Purpose

This One Water System Risk Management Planning Guide (i.e., Planning Guide) is a BC-specific resource designed to:

» help you understand what One Water is and how it could be relevant to your community;

» introduce the concept of One Water System Risk Management and provide tools for implementation in your community; and

» help you compile and prepare the resources needed to begin risk management planning.

This Planning Guide also supports the selection and preparation of an appropriate risk management tool for each community:

» Screening Assessment; and/or

» One Water System Risk Management Plan (WSRMP).

A Screening Assessment is a tool to help assess risk through a One Water lens in a streamlined, form-based approach. It is intended to support smaller communities that have less complex or interrelated systems and fewer interactions with external parties. This Planning Guide leads the user though the process of completing the Screening Assessment and identifies points where a WSRMP might be more appropriate.

A WSRMP is more in-depth and is the subject of the complementary Professional Practice Guidelines. The scope of the WSRMP is an enterprise risk assessment of the community's One Water system, to prioritize system level risks.

This Planning Guide is a companion to the PPG but is also a stand-alone document to provide organizations with a common definition for the One Water concept and include resources and information on how it can be consistently applied in water system risk management.

If your organization has decided to pursue a One Water approach, this Planning Guide will help you document the scope and rationale for your One Water initiatives. One Water initiatives can include plans, policies, projects, and organizational changes that advances a One Water approach. Understanding the full scope of your planned One Water initiatives is necessary to identify all related risks.

Who is This Guide For?

This guide is primarily written for water service providers in BC communities. This may include First Nations, local governments, and other providers of watershed, drinking water, wastewater, stormwater, and non-potable water services to communities. All water service providers need to manage risks, including risks associated with interactions among water systems.

One Water System Risk Management Planning

One Water System Risk Management can be complex and typically involves expertise in several professions, and multiple owners or responsible entities for providing all the water services to a single community. A One Water approach to system risk management deliberately considers risks that arise from interactions between the water systems serving a community.

Advantages of the One Water Approach

Some advantages of a One Water approach to risk management include:

» **Identification and management of risks** that arise from interactions among different water systems. Examples include:

> » Public health risks arising from cross-connection between drinking water, wastewater and/or stormwater systems;

> » Competition for limited funding among water systems;

> » Risk of a water main break damaging nearby sanitary and stormwater infrastructure; and

> » Loss of knowledge with staff migration across water systems.

» **Improvements in communication** across water systems and elected bodies that can reduce organizational risks. For example, if a local government's water and wastewater departments have strong communication, they will be able to consider risks associated with large projects in a coordinated way; this could mean:

> » Appropriate consultation of all Indigenous rights and title holders;
>
> » Understanding and negotiating effective servicing agreements between First Nations and local governments;
>
> » Public acceptance of large projects;
>
> » Organizational capacity to cope with priority projects and deliver multiple concurrent construction projects;
>
> » Improved communication and collaboration between water systems to improve cross-training in an effort to address the shortage of skilled operators;
>
> » Opportunities for collaboration on emergency response; and
>
> » Integration of decision systems for large capital projects helps reduce financial risk by prioritizing the use of limited funding or borrowing capacity.

» **Appropriate assessment of existing guidelines** where they conflict. By replacing prescriptive development specifications with a more purpose driven and flexible approach, there are potential improvements to how water is managed overall. For example, a 3-metre separation distance between stormwater/sanitary infrastructure and water mains is a conventional guideline. This setback limits the amount of green rainwater infrastructure that can be developed, which also has public health risks associated with localized ponding of water and downstream flooding. As the risks and benefits fall in different silos (stormwater and drinking water), both systems must be considered together to optimize the setback distance in consultation with a public health engineer from the local health authority. The benefit of the green rainwater infrastructure, in terms of reducing risks, may be greater than the benefit of maintaining a 3 m separation.

» **Optimization of land-use planning** beyond coordinated planning of water infrastructure. For example, if considering developing in a location at elevated risk of flooding, drought or wildfire, adopting a One Water lens early in the planning process would mean that the risks to all water services are considered in the cost-benefit analysis for the project. For water service providers that are not also responsible for land use planning, this will involve engaging with the relevant parties.

Challenges of the One Water Approach

Water systems have long lifespans, and changing how water is managed in communities will involve careful planning in the decades before some elements of a One Water approach can be fully realized. This requires trust and consistent communication over the long-term to establish good working and lasting relationships among interest holders. We need to start where we are and acknowledge that our current infrastructure is built based on a "Three Waters" approach (i.e., drinking water, wastewater, and stormwater). There will be challenges in integrating and changing over a long period of time.

The following are some specific challenges with advancing a One Water approach:

» **Increased complexity**: More interest holders and topics will mean that decision processes are more complex.

» **Regulatory structure**: Regulatory systems are largely prescriptive and based on separate management and separate infrastructure systems for drinking water, non-potable water, wastewater, and stormwater.

» **Change management**: Managing all the water systems together may require changes in how organizations are structured, and increased communication within or among organizations.

» **Uncharted waters**: Rigorous risk management will be necessary when advancing a One Water initiative because integrated water management and infrastructure systems are relatively new to planners, designers, operators and users in BC. There will be a steep learning curve for both the community and for those administering and implementing these changes.

» **Path dependency**: When an approach is chosen, leading to certain decisions and investments, it is difficult to go back and change course, influencing subsequent decisions. For example, for communities with existing combined sewer systems, these can be replaced with separated sewers (siloed approach), or site-scale infrastructure can be developed to reduce rainwater flows (One Water approach); however, there is risk in assuming that reducing stormwater flows into combined sewers can adequately manage wet weather sewer flows. Once this path has been chosen it makes returning to the siloed approach difficult.

When is a One Water Approach inappropriate? A One Water approach may not always be more favourable than separate management of water systems. Many small and rural communities may gain fewer advantages, while having less capacity to do the rigorous risk management that is necessary to replace existing approaches.

Format of this Guide

The Planning Guide is structured as follows:

1. **One Water Scoping**: This section helps you explore what One Water means to your organization and community, what infrastructure and lands should be included and excluded, and who should be involved. This section of the Planning Guide supports completion of the "One Water Scoping Form", which the user completes.

2. **Screening Assessment**: Once the One Water Scoping is complete, you can use this section to determine if you should complete a full Screening Assessment (using the Screening Tool), or take an early off-ramp to complete a WSRMP. The Screening Tool is designed for water service providers to use, usually without the assistance of a qualified professional, to determine whether your community's water services are generally at a low or moderate risk. The Screening Tool is designed to help you decide if you should engage a Qualified Professional to proceed with a WSRMP, or if there are other actions you should take to reduce risks associated with your community's water systems.

3. **WSRMP Development**: Engineers and Geoscientists BC has developed Professional Practice Guidelines for WSRMPs, designed for use by engineering and geoscience professionals, who support water service providers. This section of the guide provides an overview of the WSRMP process.

Figure 1 shows how the tools introduced above work together. The items in green represent tools or forms, and the items in white pentagons relate to sections of this guide. The items in brown rectangles are not addressed within this guide.

Figure 1: Overview Process

2. ONE WATER SCOPING

The One Water Scoping Form (Appendix A) can help you understand and document the context for One Water risk management in your organization and your community. This includes:

» Defining your community's "One Water System" scope (Step 2);

» Identifying examples of One Water in your community (Step 3);

» Reviewing existing purpose, vision, or objective statements for One Water in your organization (Step 4);

» Establishing the drivers for a One Water approach (Step 5);

» Identifying who needs to be involved (Step 6); and

» Documenting previous work on risk management relating to water systems (Step 7).

One Water Scoping Process

Figure 2 outlines the process in the One Water Scoping Form. There are two points in the form (at the end of Steps 3, and 5) where you will be asked to consider what you have documented and review an earlier step to ensure that any newly identified information is documented before advancing to the next step. Once you have completed the form, you will be ready to advance to the Screening Assessment.

Figure 2: One Water Scoping Process

Step 1: General Information

Complete general information for record-keeping purposes.

Step 2: Water System Scope

This section describes how to fill out Part 2 of the One Water Scoping form. This section of the form identifies what water systems serve your community, who operates them and where they are located. Include systems that extend beyond your geographic boundary. The Mapping and List components can be completed simultaneously.

Mapping

Find or develop maps of your water systems. You can start from existing GIS data, planning documents or even a Google map. The maps you develop should be high-level to show the extents of all the water systems in your community; they are not meant to be a detailed inventory of assets. When preparing the maps, consider how the water systems in your community intersect with each other. Ideas include the following:

» **Colour-coded** areas served by drinking water, wastewater, non-potable water, and stormwater infrastructure;

» **Show the extent** of systems within and outside the community boundary;

» **Show interactions** between systems (e.g., by indicating which water source(s) supply which parts of the supply system, or catchment boundaries for wastewater and stormwater collection systems); and

» **Identify interfaces** between service provider(s) & their boundaries/extents (e.g., regional drinking water supplier).

List

Use the table in Section 2 of the One Water Scoping Form to identify and document all the water systems in your community, identifying the type of water service provided and noting the water service provider for each system. Check boxes have been included in the form to remind you to check that all infrastructure is included on your map(s). As with mapping, this is not intended to be an asset inventory, rather a high-level summary of existing water infrastructure in your community.

Identify the water service provider that operates the infrastructure. If there are multiple organizations involved, such as where there are multiple watersheds, list them all.

System Scoping Guidance

The water system as viewed from a One Water perspective includes any/all of the following that affect your community or is affected by your community:

» **Community boundary**

  » Map the community boundary that defines the jurisdiction or settlement served by the water system being assessed; it is likely different from the watershed extent. You may note separate areas of your community where water systems are different;

» **Watershed**

  » Map the extent of the watershed for each water source, including groundwater aquifers. A resource for determining the watershed extent is the BC Water Resources Atlas (https://maps.gov.bc.ca/ess/hm/wrbc/);

  » List names/identifiers of catchments that collect precipitation for supply to your community;

» **Drinking water source & treatment**

  » Map locations of intakes and treatment facilities;

  » List surface and/or groundwater sources and treatment processes that supply your community, including names and configurations;

» **Drinking water distribution**

  » Map system extents, including transmission lines and approximate extents of distribution system. May note separate water distribution zones in system;

  » List distinct water distribution zones;

» **Customer side**

  » Map any areas of special interest (e.g., with septic fields, areas with combined sewer laterals, areas with suspected lead water service lines, private treatment systems, private groundwater wells);

  » List any of the above issues relating to customer-owned infrastructure;

» **Wastewater collection**

- » Map system extents, including transmission lines and approximate extents of collection system. May note separate catchments in system;

- » List individual collection areas/neighbourhoods, with combined systems. Pressurized components versus gravity fed components of the system;

» **Wastewater treatment**

- » Map facilities and outfall(s)/discharge location(s);

- » List the above, including the treatment processes present at each facility;

» **Stormwater management**

- » Map system extents, including outfall and discharge locations, approximate extents/type of collection system, and treatment where relevant;

- » List types of stormwater management/treatment and receiving creeks/rivers/lakes;

» **Non-potable water**

- » Map system extents and facilities, where relevant.

- » List any large-scale or public-side non-potable water systems in your community. Examples include rainwater harvesting systems, reclaimed water for irrigation or creek augmentation, and purple pipe systems.

Step 3: One Water Examples

This section of the form provides a list of examples of "One Water" principles that may be relevant to your community; it also identifies interactions between water systems that represent "One Water" risks or issues that may need to be managed. The aim is to determine **what "One Water" means for your community**. Many specific examples of "One Water" are provided, but more can be added to the list.

Identify

Complete the Table in Section 3.1 of the Form by answering 'Yes' or 'No' to the listed questions to **identify** if One Water examples currently exist or are planned in your community. The questions or statements are also intended to serve as inspiration for future One Water planning. If you are not sure if a One Water Example applies, make note of this and it can be revisited later.

Reflect

Fill in the box in Section 3.2 of the Form to **reflect** on the list from Section 3.1. What themes emerged in the above exercise? Some examples might include:

» What One Water practices or issues already exist in your community? What One Water initiatives are planned for the future?

» What issues or risks arising from intersections across water systems do not have proper oversight within your organization?

» Is your organization doing more One Water than you realized?

» Are there issues or potential risks emerging?

» Is there low-hanging fruit, or areas where adopting a One Water approach would be easy and more beneficial than the status quo?

Review

Now that you have considered specific examples of One Water in your community, **review** whether anything should be added to your water system map and description (Step 2). For example, are there interactions among water systems that were not obvious in the first iteration?

Step 4: Purpose, Objectives and Vision

List

This step assembles prior work on strategic planning in your community. In laying the groundwork for a One Water approach, this exercise will help you notice whether One Water thinking has already arisen in previous work.

Your community might already have various plans, among them:

»   Official Community Plan;

»   Comprehensive Community Plan;

»   Strategic Plan;

»   Master Plan(s);

»   Climate Action Plan;

»   Emergency Management Plan;

»   Asset Management Plan;

»   Documents created or approved by elected body (Council or Board); and

»   Project Charter.

Review these plans and determine if they have stated a vision for the community, purpose, or objectives. Document the visions already made in these plans in the One Water Scoping Form.

Reflect

How do the statements work together for all the water services within the scope? Are they aligned? Are there misalignments? If there are misalignments, then there may be a risk that should be documented.

When you **reflect** on the above list, what themes emerge? Some examples might include:

»   Are visions in the different documents similar or aligned?

»   Are there misalignments, which could point to organizational risk?

»   Do any of the vision statements relate directly to water infrastructure? If so, do they take a One Water approach, or could they be made broader?

Step 5: Motivation for One Water Risk Management

This section will help you consider how a One Water approach could be helpful in risk management for your community. These drivers fall into the categories of "triggers", "catalysts", and "desired outcomes".

Triggers

There are various conditions that are putting pressure on water systems. Typically, there is at least one issue that drives a community to consider adopting One Water principles and strategies. The issue may be an emerging or potential risk that must be addressed. Consider the following triggers below and determine which triggers are most prevalent for your community.

Water Quantity Issues: Communities face issues due to too much water, such as flooding, more frequent and severe storms, or too little water, such as drought cycles and heatwaves with water shortages.

Water Quality Issues: These could be issues that impact not only drinking water quality but also the water quality in natural areas around the community and the impact of this quality on wildlife and the landscape.

Aging and or/Inadequate Infrastructure: Most communities grew rapidly between the 1950s and 1980s. Water infrastructure built in that era is aging and may require renewal soon. Communities that have grown or have new industries may not be adequately served by existing infrastructure. Communities that have experienced a declining population may now have oversized infrastructure, and a declining revenue base to fund asset renewal, despite the community still needing those services. Aging infrastructure can also cause water quality and water quantity issues which can lead to contamination of waterways. Failing underground infrastructure can cause safety hazards, and impact the local economy and environment.

Climate Change: Climate change increases many risks facing community water systems, including direct threats such as drought, flooding and wildfire. Climate change can also drive changes in social, economic and environmental conditions both locally and globally that pose new or increased risks to community water services.

Pricing and/or Affordability: With aging infrastructure comes the need to replace the infrastructure in communities that have been underfunded and/or underinvesting in their systems. Population, demographic and economic changes and climate change can also reduce the affordability of water services especially for lower-income households.

Ecosystem Degradation: Foundational to the water system are the ecosystem and natural assets, snow buildup areas and watersheds. Industrial development and modern agricultural practices have taken a toll on our natural resources but the changing climate is also having an impact.

Integrating Inclusion: Respecting diverse perspectives and promoting the responsible stewardship of water resources should be conducted with all those affected, not just land and/or homeowners. All the water services should be considered together and additionally consider equity,

affordability, sustainability, resiliency, and adequacy.

Reconciliation: Discourse with local Indigenous communities is required to better understand risks for all those sharing the land and water, and reduce risk through the incorporation of Indigenous knowledge.

Catalysts

While triggers constitute the pressures on water systems that could necessitate a shift to One Water, catalysts are the events that motivate embarking on that shift: the "why now?" Consider the following catalysts and examples, and document which catalyst(s) are prompting the present endeavor; i.e., what prompted you to fill out this form?

Regulatory: Changes in federal and/or provincial (or other jurisdictional) regulations; a letter from a regulatory body citing need for change (unmet regulations, etc.)

Financial: Grant application or agreement stipulates risk assessment is required; assessing how a large project might be financed.

Community Planning: Strategic outlook for the community which considers the community's long-term sustainability and resiliency.

Organizational Culture: Changes from within the organization that is seeking a more integrated approach to risk management, external pressure for an organization to change the way that risks are managed.

Staff Capacity: A recent or upcoming change to the organization's staffing prompts a shift to One Water.

Desired Outcomes

This section is intended to help you describe your organization's long-term goals or desired ends for adopting a One Water approach.

The US Water Alliance identified six general desired outcomes for a One Water approach which they call "Areas for Action."[4] Which of the following desired outcomes resonate with your community's purpose, objectives and vision (Section 4)?

Reliable and Resilient Water Utilities: As utilities begin to age and need more investment, consider new technology and approaches that not only help integrate water systems, but are more efficient and better for the environment, and provide more efficient delivery. Would the community benefit from modern approaches to improve resiliency now that the infrastructure requires upgrades? Are there opportunities for transforming wastewater into a resource that feeds back into the community? Can green infrastructure be used to help with flooding or drought?

Thriving Cities/Communities: Cities are getting larger while some communities in more rural

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4. One Water Alliance https://uswateralliance.org/wp-content/uploads/2023/09/Roadmap-FINAL_0.pd

areas are shrinking, either of which can strain resources. Maintaining current service levels with a smaller population, or existing resources being spread thin across a growing population both present challenges. What is your vision of a sustainable and resilient community? What opportunities are there to make renewal work more sustainable (such as a dig-once approach)?

Competitive Business and Industry: Water is a main resource for many industries. What needs do businesses in your community have? Are businesses willing to form partnerships that are mutually beneficial?

Sustainable Agricultural Systems: Agriculture is heavily impacted by water and water quality. Agriculture also impacts the natural system with issues such as soil erosion, habitat loss, pollution, and impact on native species. Embracing sustainable practices not only reduces the environmental impact of agriculture but also enhances the long-term viability of farming activities. By promoting agroecological approaches, such as diversified crop cultivation, soil conservation, and efficient water management, agricultural systems can become more adaptable to climatic variations and less susceptible to disruptions caused by extreme weather events or market fluctuations.

Social and Economic Inclusion: Incorporating social and economic inclusion within risk management strategies is pivotal for fostering resilience and sustainability in communities. It involves acknowledging and addressing vulnerabilities that certain groups might face during times of crises or upheavals. By actively involving diverse interest holders, considering their perspectives, and ensuring equitable access to resources and information, risk management becomes more comprehensive and effective. This inclusive approach not only mitigates the disproportionate impacts of risks on marginalized communities but also enhances the overall resilience of the society and economy. It promotes fair opportunities for all individuals to participate in decision-making processes and access support mechanisms, thereby strengthening societal cohesion and bolstering economic stability.

Healthy Waterways: Healthy water systems contribute to public health by providing safe drinking water and supporting sanitation, reducing the risks of waterborne diseases and contamination. Preserving waterways fosters economic resilience by supporting industries like agriculture, tourism, and fisheries, reducing vulnerability to disruptions caused by degraded water quality or scarcity. In prioritizing the protection and restoration of waterways, communities can effectively manage risks associated with natural disasters like floods, droughts, and storms, mitigating their severity and impact.

Review

After this activity, did you identify any One Water Examples that your community aspires to in the future? If so, go back to your list of One Water Examples (Step 3) and fill in anything that you noticed is missing.

Step 6: Team Development

This section identifies people who have diverse expertise related to all One Water systems and risk categories. These can be people from both internal departments and external organizations. If you proceed with the Screening Assessment, these people are resources to consult as needed. If you proceed to a WSRMP, this may form the initial team that supports the WSRMP process.

Identifying all relevant parties could be a daunting task for communities with systems where various water services have multiple owners. To simplify this process, the following two sections, describe the risk categories that are covered in a One Water assessment and identify competencies and example roles that can support or participate in risk management exercises. The One Water Scoping Form includes a table to document the individuals in your organization or community that have the knowledge/experience/competencies to comment on the different risks that your community might face when embarking on your One Water journey. When filling out this table, try to have at least one checkmark in every row.

If your community has an asset management committee, these personnel would be valuable contributors.

Risk Categories

Along with gathering a team that can understand the different parts of the water system in your community, you also want to identify potential team members who understand risk categories which need to be considered for all water systems.

Risk categories are discussed in detail in the WSRMP Professional Practice Guidelines. The following are risk categories that need to be considered in a screening assessment and the WSRMP:

» **Operations**: Risk associated with staff knowledge and management, management of regulatory changes, system monitoring and record keeping, and compliance;

» **Organization**: Sources of risk in organizations include organizational structure (delegation, decision making, lines of communications, access to resources and tools), staff and knowledge management (trained, knowledgeable qualified staff, knowledge management and succession planning, documented and complete asset information);

» **Finances**: Risks associated with funding and revenue, capital planning, and financial reporting;

» **Regulatory**: Risks associated with compliance, management of compliance, regulatory changes, system monitoring and record keeping;

» **Watershed**: Sources of risk affecting the watersheds including climate change, natural disaster, land use, development, and activities taking place within and around the watershed;

» **Communication**: Risks associated with effective communication with customers, Indigenous communities, regulators, and communications within the organizations and collaborating systems;

» **Strategic**: Risks associated with strategic decision making, relationships and partnerships, levels of service, and total system costs among many others when considering a long-term outlook for your community; and

» **Resilience**: Risks associated with unplanned, infrequent, and challenging events as well as system security, climate change impacts, and liabilities.

Does your team have a person who is able to serve as a resource for each of the various risk categories you will be reviewing? The same team member could speak to one or more of the risk categories. It is important that all risk categories are considered for the entire One Water system.

Competencies and Roles

To appropriately understand the risk categories and water systems, there are certain competencies needed to support a successful One Water initiative and to assess and manage One Water System risks. When identifying your team, consider the competencies likely to be required from the list below. Then consider where those competencies are likely to be available to your team. These roles may be found within your organization or within other water service providers in your community. Add these individuals to your table in the One Water Scoping Form.

Risk Category	Required Competencies	Example Roles
Operational	System operation and maintenance Applied sciences Safety and security Information systems Should cover all conventional "silos": » Drinking water » Wastewater » Stormwater » Non-potable water	Operations Manager Maintenance Manager Certified Operator of Record Engineering Manager Water Quality Manager Safety Officer
Organizational	Team leadership and management Training and succession planning Decision process Communication	Operations Manager Human Resource Manager Chief Administrative Officer (CAO) Legal Counsel Risk Manager Band Manager
Financial	Financial and management accounting Long term financial planning Asset management	Finance Manager Purchasing Manager Asset Manager Risk Manager
Regulatory	Applied sciences System operation Environmental health Occupational health and safety Law Public administration	Engineering Manager Certified Operator of Record Water Quality Manager Safety Officer Corporate Services Manager CAO/General Manager Risk Manager Legal Counsel Lands Manager

Risk Category	Required Competencies	Example Roles
Watershed	Hydrology/hydrogeology/limnology Agrology Forestry, wildfire management Biology Land use planning Indigenous knowledge	Watershed Manager Operations Manager Emergency Manager Planning Manager Applied science professionals Lands Manager
Communication	Public relations / community engagement Project management Demand side management Emergency management Social media Local and Indigenous government law	Corporate Communications Manager Capital Projects Manager Planning Manager Water Conservation Manager Emergency Manager CAO/General Manager Legal Counsel Risk Manager
Strategic	Strategic planning Public administration Land use planning Long term financial planning Infrastructure master planning Asset management Business case analysis	CAO/General Manager Planning Manager Finance Manager Engineering Manager Asset Manager Band Manager Risk Manager Legal Counsel
Resilience	Hydrology Seismology Climate science Security and cyber-security Epidemiology Tort law Emergency/disaster management	CAO/General Manager Engineering Manager Operations Manager Emergency Manager Corporate Legal Counsel IT Manager Band Manager Risk Manager Lands Manager

Step 7: Previous Risk Management Work

It is likely that your organization has already engaged in some level of risk management related to water systems. This step assembles prior risk management work which will form important resources when conducting a One Water system risk assessment, either via the Screening Assessment or a WSRMP.

Seek out these data sources, including the following:

» Master Plans;

» Risk Management Plans;

» Risk Assessments;

» Hazard Assessment;

» Comprehensive Drinking Water Sources to Tap Assessment;

» Flood Risk Assessment;

» Financial Risk Assessment; and

» Climate Resiliency Assessment.

Use the table in Section 7 of the form to document any existing work on risk management in your organization.

3. SCREENING ASSESSMENT

The Screening Tool provided with this Planning Guide may help you identify whether a WSRMP is needed to effectively identify, analyze, evaluate and prioritize risks facing your community's One Water services. The process map for the screening assessment is shown in Figure 3, with the Screening Tool components highlighted in green.

Figure 3: Screening Assessment Process

Initial Screening Questions

With the One Water Scoping Form filled out, it is time to consider whether your organization should continue with a Screening Assessment or with a WSRMP.

The following questions will help determine which option is best for your community.

Desire for WSRMP

Is there some factor that is prompting your organization to skip the screening process and proceed directly to a WSRMP? For example, the catalyst(s) identified in the One Water Scoping Form may clearly necessitate a full risk identification and analysis process, led by a Qualified Professional.

Governance Complexity

Reviewing the One Water Scoping Form (Step 2 and Step 6), are there more than three separate water service providers involved for your community? If not, then you may start with the Screening Assessment and decide from there if a WSRMP is more appropriate depending on risk levels in the community.

Community Size

If your community is smaller than 10,000 people then the Screening Assessment is a way to initiate the process and decide from there if a WSRMP is more appropriate depending on risk levels in the community.

Funding

Is there enough funding or internal capacity for a WSRMP? Smaller organizations are less likely to have the capacity and expertise in-house to complete a WSRMP, and the cost of retaining a Qualified Professional to complete one is more likely to be a significant budget decision.

Detailed Screening Questions

If the first four screening questions enable you to decide that a WSRMP is needed for your organization there is no need to complete the rest of the Screening Assessment, although you may find it useful for scoping and prioritizing the WSRMP for your organization and other organizations involved in delivering water services to your community. If you are completing a Screening Assessment, proceed to the spreadsheet-based "Interim Screening Tool" and follow the instructions provided.

The One Water Screening Tool is a questionnaire, designed to be completed by the water service provider. The questionnaire results are then used by the water service provider to decide whether a WSRMP is warranted.

4. WATER SYSTEM RISK MANAGEMENT PLAN

If the Screening Assessment indicates that a WSRMP is warranted, a Qualified Professional should be enlisted to assist with preparation of a WSRMP. Engineers and Geoscientists BC has developed Professional Practice Guidelines which explains the requirements of a WSRMP. The WSRMP Process (described in Section 3.2 of the Professional Practice Guidelines), is illustrated in Figure 4. The One Water Scoping and Screening Assessment activities were designed to position a community for success in their WSRMP and simplify the hiring or onboarding process for the Qualified Professional.

Figure 4: WSRMP Process

5. NEXT STEPS

Upon completion of either a Screening Assessment or a WSRMP, risks will be identified and evaluated;however, neither of these processes includes detailed planning and implementation of actions needed to treat risks. These steps are the responsibility of the organization(s) responsible for the water service(s). The next steps are as follows:

Identify Actions & Treat Risks

Though a WSRMP identifies high-level actions, more detail is likely needed prior to risk treatment. Treatment strategies for risks should be identified, with synergistic treatment strategies noted (i.e., addressing multiple risks) wherever possible. Cost-effective strategies should be selected to treat any unacceptable risks. Actions required to implement these strategies should be determined and prioritized. Actions may be identified as part of other, more focused, risk management plans, or as part of a stand-alone plan.

Once actions have been identified, these should be executed to treat or manage risks in a manner consistent with the risk management plan(s). Treating risks often involves phased strategies that include risk communication, organizational and operational changes, and capital projects. The full implementation timeframe is likely to span several years, and it is likely that a subsequent update to the WSRMP or Screening Assessment will be needed before all risk treatment strategies identified through the current assessment cycle are completed.

Review Assessment

The Professional Practice Guidelines encourage the WSRMP project team to determine the frequency of WSRMP reviews and updates. An annual frequency is suggested where there are many 'high' risks in the register, and an update every five years, at a minimum, where risks are mainly 'low'. The same approach should be taken with the Screening Assessment; where there were few or manageable risks, a lower review frequency is acceptable.

APPENDIX A: ONE WATER SCOPING FORM

One Water Scoping Form

This form is intended to be completed with the support of Section 2 of the One Water System Risk Management Planning Guide (Planning Guide). Please refer to the corresponding sections of the Planning Guide for definitions, examples, and other helpful information for completing this Scoping Form.

1. GENERAL INFORMATION

This section of the form compiles general information for record-keeping purposes.

1. On what date was this assessment completed?

   [_____] Date completed (yyyy-mm-dd)

2. What is the community undertaking this assessment? (e.g., Fort Saint John, Nanaimo)

   [_____]

3. What is the organization undertaking this assessment? (e.g., North Salt Spring Water Works District)

   [_____]

4. Who is the person filling out this scoping assessment?

   [_____] Name
   [_____] Position or Title
   [_____] Phone Number(s)
   [_____] Email Address

2. WATER SYSTEM SCOPE

This section of the form identifies **what water systems** serve your community, **who operates them** and **where they are located**. Include systems that extend beyond your geographic boundary.

Items 2.1, and 2.2 can be completed simultaneously

2.1 Mapping

Find or create maps of your water systems, in conjunction with the table below. More information on these water systems is provided in the Planning Guide. This may include separate or overlaid maps of:

1. **Community boundary** for jurisdiction served by water service provider which is being assessed

2. **Watershed** extent for each water source including groundwater aquifers

3. **Drinking water source & treatment** intakes and treatment facilities

4. **Drinking water distribution** system extents

5. **Customer side** water management practices

6. **Wastewater collection** system extents

7. **Wastewater treatment** facilities and outfalls and discharge location

8. **Stormwater management** system extents including collection area and points of discharge

9. **Non-potable water** system extents and facilities, where relevant

2.2 List

List the names/identifiers of the infrastructure that serves your community. More information on these water systems is provided in the Planning Guide.

The list is intended to provide additional information about system components that are also shown on the map(s):

	List Major Infrastructure Components & Key Information	Water Service Provider	On Map?
Watershed			
Drinking Water Source & Treatment			
Drinking Water Distribution			
Customer Side			
Wastewater Collection			
Wastewater Treatment			
Stormwater Management			
Non-Potable Water			

3. ONE WATER EXAMPLES

This section of the form provides a list of examples of where "One Water" principles that may be relevant to your community; the aim is to determine what "One Water" means for your community.

Many specific examples of "One Water" are provided, but more can be added to the list.

3.1 Identify

Identify One Water Examples that exist in your community or are planned. Note that "you" is meant to denote "your community" or "your organization", as appropriate.

Identify if One Water practices currently exist or are planned in your community. Look at the Guide for further direction if needed.

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Interactions Between Water Systems					
Is your organization seeking to diversify or stretch the water supply through new strategies such as major reuse projects, rainwater harvesting, or other approaches?					
Do you manage runoff for beneficial use, to reduce drinking water demand?					
Has your community "daylighted" a creek?					
Have you developed or implemented demand management approaches based on benefits to multiple water services? E.g. water metering to reduce dry weather sewer flows					
Have you required water capture or recycling initiatives for new developments?					
Does your community have combined sewers?					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Are you using green rainwater infrastructure to manage flooding, reduce combined sewer overflows and/or reduce water demand for irrigation?					
Is stormwater used to recharge drinking water sources?					
Is source water protection integrated with sewer/stormwater watershed protection?					
Are you seeking energy-neutral water systems?					
Do you do groundwater replenishment to boost drinking water or manage saltwater intrusion?					
Do you charge a stormwater fee based on impervious area?					
Are you utilizing onsite water systems – source control, water reuse on private property, rainwater capture/storage, non-potable water systems in buildings?					
Does the water supply source(s) provide other users/needs (e.g.: recreational, navigation, energy supply, irrigation, wildlife habitat)					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Organizational Features					
Is there a dedicated team or organizational structure in place to support a One Water approach?					
Do you have One Water champions?					
Are employees cross-trained between water services?					
Have you streamlined permitting for projects with water-efficient innovations?					
Does your community have a formal "One Water Framework/Plan/Initiative"?					
Is there a framework for different divisions to share resources (e.g., water district and sanitation district pool resources for groundwater replenishment)?					
Do you have mechanisms that result in a "dig once" approach?					
Is there coordination of data driven analysis for optimizing renewals and prediction models across water systems?					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Equity Considerations					
Do you consult with First Nations and engage with other interest holders (e.g., business, community, and environmental interest groups) when embarking on major water projects?					
Are water fees based on a conservation-oriented rate design? (water/wastewater billed based on volume used; higher users pay higher rate)					
Have you investigated the possible unintentional disparities that may be created from a policy/service/ program or project?					
If your organization is considering a water project (e.g. new source development, or demand management initiative), are all groups of users equitably represented in the engagement process? (e.g. is participation demographically representative?)					
If your organization is considering a water project, are there multiple opportunities for all local First Nations to provide feedback and input? Is First Nations input consistently incorporated in decision processes?					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
External Collaboration					
Are different governments (or government departments) collaborating closely to manage water systems (e.g., drinking water, stormwater, wastewater)?					
Do you systematically share/receive water data with other organizations (e.g., universities)?					
Have you worked with neighbouring/nearby communities to plan for wet weather sewer management?					
Are you talking about 'One Water' with regional partners?					
Other					

3.2 Reflect

Reflect on themes that have emerged in the above exercise:

3.3 Review

After this activity, go back to your map and list (Step 2) and fill in anything that you noticed is missing.

4. Purpose, Objectives & Vision

This step assembles prior work on strategic planning in your community. In laying the groundwork for a One Water approach, this will help you notice whether One Water thinking has already arisen in previous work.

4.1 List

List out the existing documents in your community and their driving statements:

Document Name & Date:	
Vision:	
Purpose/ Objectives	
Document Name & Date:	
Vision:	
Purpose/ Objectives	

Document Name & Date:	
Vision:	
Purpose/ Objectives	

Document Name & Date:	
Vision:	
Purpose/ Objectives	

Document Name & Date:	
Vision:	
Purpose/ Objectives	

4.2 Reflect

Reflect on themes that have emerged in the above exercise:

5. Motivation for One Water Approach

This section identifies drivers of why a One Water approach could be helpful in risk management for your community. These drivers fall into the categories of "triggers", "catalysts", and "desired outcomes".

5.1 Triggers

What problems are your community facing, which are putting pressures on water systems? Review the "Triggers" section in the Guide.

Trigger Name	Key Trigger	Trigger Present	Not a Major Driver	Unknown
Water Quantity Issues				
Water Quality Issues				
Aging and or/Inadequate Infrastructure				
Climate Change				
Pricing and/or Affordability				
Ecosystem Degradation				
Integrating Inclusion				
Reconciliation				
Notes:				

5.2 Catalysts

Think about the catalyst(s) that are driving the present effort. Review the "Catalysts" section in the Guide.

Catalyst Name	Key Catalyst	Catalyst Present	Not a Major Driver	Unknown
Regulatory				
Financial				
Community Planning				
Organizational Culture				
Staff Capacity				
Notes:				

5.3 Desired Outcomes

This section is intended to help you describe your organization's long-term goals or desired ends, as they relate to adoption of a One Water approach.

Review the section in the Guide called "Desired Outcomes" and think about your community. What are your community goals? E.g. from project charter? Community plan? Council directive? What broad value statements exist?

Which of the following desired outcomes seem to be most aligned with your community's goals? Rank them in order of importance to your community with the rank of 1 being the most important. Other ideas might come out of community plan, etc.

Desired Outcomes	Rank
Reliable and Resilient Water Utilities	
Thriving Cities/ Communities	
Competitive Business and Industry	
Sustainable Agricultural Systems	
Social and Economic Inclusion	
Healthy Waterways	
Notes:	

5.4 Review

After this activity, did you identify any One Water Examples that your community plans to implement or address in the future? If so, go back to your list of One Water Examples (Step 3) and fill in anything that you noticed is missing.

6. Team Development

This section identifies people **who have diverse expertise** related to all One Water systems and risk categories. These can be people from both internal departments and external organizations.

If you proceed with the Screening Assessment, these people are resources to consult as needed and to use as peer reviewers if only one person will be completing the Assessment. If you proceed to a WSRMP, this may form the initial team that supports the WSRMP process.

1. List people's names and/or positions down the left-hand column. Then use the Planning Guide to assess whether they have the expertise in one or more realms to assist with One Water system risk management.

Risk Categories Involved:	Operations					Organization	Finance	Regulatory	Watershed	Communications	Strategic	Resilience
	General	Drinking Water Operations	Wastewater Operations	Stormwater Operations	Non-Potable Water Operations							

7. Previous Risk Management Work

This step assembles prior risk management work which will form important resources when conducting a One Water system risk assessment, either via the Screening Assessment or a WSRMP.

List existing relevant assessments that deal with risks related to the water system:

Water System	Document Name/Title	Year Completed	Is It Current? Y N	Is It Available? Y N

8. Next Steps

The completed form contains key information that will be needed in pursuing One Water system risk management. This will form a helpful resource for:

» sharing with leadership to describe One Water in your context

» guiding the Screening Assessment

» populating the WSRMP (if doing)

» clarifying roles/expectations for WSRMP team members

Now that you have completed the One Water Scoping form, return to the Planning Guide to move on to the screening step.

APPENDIX B: GLOSSARY

Term	Definition
Community	The jurisdiction or settlement being considered in the assessment.
Green Rainwater Infrastructure	Infrastructure that uses or mimics natural processes to manage rainwater runoff quality and/or quantity.
Engineers and Geoscientists BC	The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC.
One Water	An integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs. This governance and management approach considers all water from source to tap and sink to watershed to be one integrated system. A One Water approach requires all drinking water, wastewater, non-potable water, and stormwater system owners serving a community and operating within a watershed to work together to deliver sustainable, resilient, equitable and affordable water services.
One Water Initiative	A project designed to propel your community towards One Water, with the aim to integrate planning, management, or infrastructure systems for drinking water, sanitary sewer, stormwater, and non-potable water systems.
One Water Example	Concrete example of where "One Water" principles are currently practiced or planned in the community, as well as interactions between water systems, organizational features, equity considerations, and external collaborations.
One Water System Risk Management Plan (WSRMP)	An integrated, scalable plan, that is completed by a Qualified Professional(s), for the management of enterprise level risks to watershed, drinking water, wastewater, storm water and non-potable water systems that have the potential to impact public and environmental health.
Qualified Professional	A professional engineer or professional geoscientist registered with Engineers and Geoscientists BC who has the required education, training and experience to carry out the systems-level risk assessment including the appropriate level of analysis described in the Professional Practice Guidelines and to authenticate the One Water System Risk Management Plan.
Risk Analysis	The process of calculating the likelihood of an event and the consequence of the event if it were to occur. The product of these two variables is the quantified risk.
Risk Management	An approach to identify, assess, evaluate, and treat risk.

Term	Definition
Screening Assessment	A tool which helps work through risks to all water systems in smaller or simpler systems. It is also intended to help any organization determine if a WSRMP is needed. A Screening Assessment is not a full risk assessment, and does not replace the need for any organization to follow a rigorous, comprehensive process involving identification, assessment and treatment of risks to the public, the environment and the organization that are associated with the service(s). A WSRMP as described in the EGBC Professional Practice Guideline serves this need.
Water Service Provider	An organization that owns a water system and provides a water service for the community being assessed. As this Planning Guide is primarily written for water service providers, "your organization" refers to the water service provider. In British Columbia, this is typically a First Nation, municipality, regional district, improvement district, water users' community, private company, or strata. These organizations are often the same as "Local Community Governing Bodies" as defined in the Professional Practice Guideline.
Watershed	An area of land that drains all the streams and rainfall to a common outlet, commonly referred to as a catchment or drainage basin. For the purposes of this guide, watershed means water supply lands upstream of a drinking water intake or aquifer.
Water System	For the purposes of this Guide, the term "water system" applies to all built and natural systems used to provide water services to a community. These include watershed, drinking water, stormwater, non-potable water, and wastewater systems.

APPENDIX C: EXAMPLE ONE WATER SCOPING FORM

One Water Scoping Form

This form is intended to be completed with the support of Section 2 of the One Water System Risk Management Planning Guide (Planning Guide). Please refer to the corresponding sections of the Planning Guide for definitions, examples, and other helpful information for completing this Scoping Form.

This form has been completed for fictional town 'Easy Creek' for demonstration purposes. Any resemblance to existing communities is purely coincidential.

2024-05-30
Prepared by: Kerr Wood Leidal Associates Ltd
Prepared for: Engineers and Geoscientists British Columbia

1. GENERAL INFORMATION

This section of the form compiles general information for record-keeping purposes.

1. On what date was this assessment completed?

    [_____] Date completed (yyyy-mm-dd)

2. What is the community undertaking this assessment? (e.g., Fort Saint John, Nanaimo)

    [_____]

3. What is the organization undertaking this assessment? (e.g., North Salt Spring Water Works District)

    [_____]

4. Who is the person filling out this scoping assessment?

[_____]	Name
[_____]	Position or Title
[_____]	Phone Number(s)
[_____]	Email Address

2. WATER SYSTEM SCOPE

This section of the form identifies **what water systems** serve your community, **who operates them** and **where they are located**. Include systems that extend beyond your geographic boundary.

Items 2.1, and 2.2 can be completed simultaneously

2.1 Mapping Maps are attached

Find or create maps of your water systems, in conjunction with the table below. More information on these water systems is provided in the Planning Guide. This may include separate or overlaid maps of:

1. **Community boundary** for jurisdiction served by water service provider which is being assessed

2. **Watershed** extent for each water source including groundwater aquifers

3. **Drinking water source & treatment** intakes and treatment facilities

4. **Drinking water distribution** system extents

5. **Customer side** water management practices

6. **Wastewater collection** system extents

7. **Wastewater treatment** facilities and outfalls and discharge location

8. **Stormwater management** system extents including collection area and points of discharge

9. **Non-potable water** system extents and facilities, where relevant

2.2 List

List the names/identifiers of the infrastructure that serves your community. More information on these water systems is provided in the Planning Guide.

The list is intended to provide additional information about system components that are also shown on the map(s):

	List Major Infrastructure Components & Key Information	Water Service Provider	On Map?
Watershed			
Drinking Water Source & Treatment			
Drinking Water Distribution			
Customer Side			
Wastewater Collection			
Wastewater Treatment			
Stormwater Management			
Non-Potable Water			

3. ONE WATER EXAMPLES

This section of the form provides a list of examples of where "One Water" principles that may be relevant to your community; the aim is to determine what "One Water" means for your community.

Many specific examples of "One Water" are provided, but more can be added to the list.

3.1 Identify

Identify One Water Examples that exist in your community or are planned. Note that "you" is meant to denote "your community" or "your organization", as appropriate.

Identify if One Water practices currently exist or are planned in your community. Look at the Guide for further direction if needed.

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Interactions Between Water Systems					
Is your organization seeking to diversify or stretch the water supply through new strategies such as major reuse projects, rainwater harvesting, or other approaches?					
Do you manage runoff for beneficial use, to reduce drinking water demand?					
Has your community "daylighted" a creek?					
Have you developed or implemented demand management approaches based on benefits to multiple water services? E.g. water metering to reduce dry weather sewer flows					
Have you required water capture or recycling initiatives for new developments?					
Does your community have combined sewers?					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Are you using green rainwater infrastructure to manage flooding, reduce combined sewer overflows and/or reduce water demand for irrigation?					
Is stormwater used to recharge drinking water sources?					
Is source water protection integrated with sewer/stormwater watershed protection?					
Are you seeking energy-neutral water systems?					
Do you do groundwater replenishment to boost drinking water or manage saltwater intrusion?					
Do you charge a stormwater fee based on impervious area?					
Are you utilizing onsite water systems – source control, water reuse on private property, rainwater capture/storage, non-potable water systems in buildings?					
Does the water supply source(s) provide other users/needs (e.g.: recreational, navigation, energy supply, irrigation, wildlife habitat)					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Organizational Features					
Is there a dedicated team or organizational structure in place to support a One Water approach?					
Do you have One Water champions?					
Are employees cross-trained between water services?					
Have you streamlined permitting for projects with water-efficient innovations?					
Does your community have a formal "One Water Framework/Plan/Initiative"?					
Is there a framework for different divisions to share resources (e.g., water district and sanitation district pool resources for groundwater replenishment)?					
Do you have mechanisms that result in a "dig once" approach?					
Is there coordination of data driven analysis for optimizing renewals and prediction models across water systems?					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
Equity Considerations					
Do you consult with First Nations and engage with other interest holders (e.g., business, community, and environmental interest groups) when embarking on major water projects?					
Are water fees based on a conservation-oriented rate design? (water/wastewater billed based on volume used; higher users pay higher rate)					
Have you investigated the possible unintentional disparities that may be created from a policy/service/ program or project?					
If your organization is considering a water project (e.g. new source development, or demand management initiative), are all groups of users equitably represented in the engagement process? (e.g. is participation demographically representative?)					
If your organization is considering a water project, are there multiple opportunities for all local First Nations to provide feedback and input? Is First Nations input consistently incorporated in decision processes?					
Other					

Question or Category	Don't know	Current Practice?		Planned?	
		Y	N	Y	N
External Collaboration					
Are different governments (or government departments) collaborating closely to manage water systems (e.g., drinking water, stormwater, wastewater)?					
Do you systematically share/receive water data with other organizations (e.g., universities)?					
Have you worked with neighbouring/nearby communities to plan for wet weather sewer management?					
Are you talking about 'One Water' with regional partners?					
Other					

3.2 Reflect

Reflect on themes that have emerged in the above exercise:

3.3 Review

After this activity, go back to your map and list (Step 2) and fill in anything that you noticed is missing.

We added the areas with private wells to the map that we missed in the first pass.

4. Purpose, Objectives & Vision

This step assembles prior work on strategic planning in your community. In laying the groundwork for a One Water approach, this will help you notice whether One Water thinking has already arisen in previous work.

4.1 List

List out the existing documents in your community and their driving statements:

Document Name & Date:	Easy Creek Strategic Plan 2022-2026
Vision:	
Purpose/ Objectives	
Document Name & Date:	
Vision:	
Purpose/ Objectives	

Document Name & Date:	
Vision:	
Purpose/ Objectives	
Document Name & Date:	
Vision:	
Purpose/ Objectives	
Document Name & Date:	
Vision:	
Purpose/ Objectives	

4.2 Reflect

Reflect on themes that have emerged in the above exercise:

5. Motivation for One Water Approach

This section identifies drivers of why a One Water approach could be helpful in risk management for your community. These drivers fall into the categories of "triggers", "catalysts", and "desired outcomes".

5.1 Triggers

What problems are your community facing, which are putting pressures on water systems? Review the "Triggers" section in the Guide.

Trigger Name	Key Trigger	Trigger Present	Not a Major Driver	Unknown
Water Quantity Issues				
Water Quality Issues				
Aging and or/Inadequate Infrastructure				
Climate Change				
Pricing and/or Affordability				
Ecosystem Degradation				
Integrating Inclusion				
Reconciliation				
Notes:				

5.2 Catalysts

Think about the catalyst(s) that are driving the present effort. Review the "Catalysts" section in the Guide.

Catalyst Name	Key Catalyst	Catalyst Present	Not a Major Driver	Unknown
Regulatory				
Financial				
Community Planning				
Organizational Culture				
Staff Capacity				
Notes:				

5.3 Desired Outcomes

This section is intended to help you describe your organization's long-term goals or desired ends, as they relate to adoption of a One Water approach.

Review the section in the Guide called "Desired Outcomes" and think about your community. What are your community goals? E.g. from project charter? Community plan? Council directive? What broad value statements exist?

Which of the following desired outcomes seem to be most aligned with your community's goals? Rank them in order of importance to your community with the rank of 1 being the most important. Other ideas might come out of community plan, etc.

Desired Outcomes	Rank
Reliable and Resilient Water Utilities	
Thriving Cities/ Communities	
Competitive Business and Industry	
Sustainable Agricultural Systems	
Social and Economic Inclusion	
Healthy Waterways	
Notes:	

5.4 Review

After this activity, did you identify any One Water Examples that your community plans to implement or address in the future? If so, go back to your list of One Water Examples (Step 3) and fill in anything that you noticed is missing.

6. Team Development

This section identifies people **who have diverse expertise** related to all One Water systems and risk categories. These can be people from both internal departments and external organizations.

If you proceed with the Screening Assessment, these people are resources to consult as needed and to use as peer reviewers if only one person will be completing the Assessment. If you proceed to a WSRMP, this may form the initial team that supports the WSRMP process.

1. List people's names and/or positions down the left-hand column. Then use the Planning Guide to assess whether they have the expertise in one or more realms to assist with One Water system risk management.

Risk Categories Involved:	Operations					Organization	Finance	Regulatory	Watershed	Communications	Strategic	Resilience
	General	Drinking Water Operations	Wastewater Operations	Stormwater Operations	Non-Potable Water Operations							

7. Previous Risk Management Work

This step assembles prior risk management work which will form important resources when conducting a One Water system risk assessment, either via the Screening Assessment or a WSRMP.

List existing relevant assessments that deal with risks related to the water system:

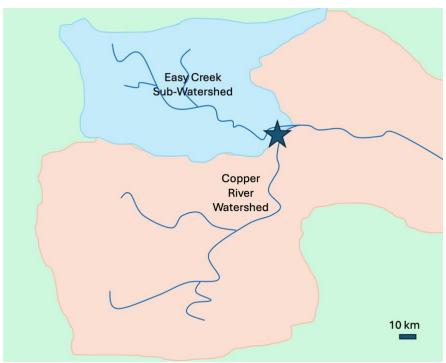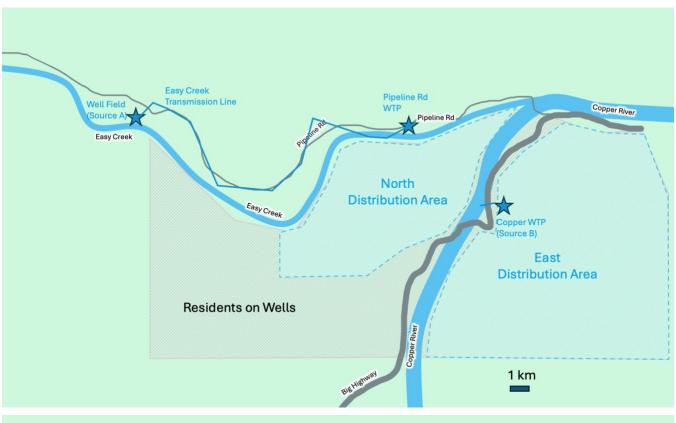| Water System	Document Name/Title	Year Completed	Is It Current?		Is It Available?	
			Y	N	Y	N

8. Next Steps

The completed form contains key information that will be needed in pursuing One Water system risk management. This will form a helpful resource for:
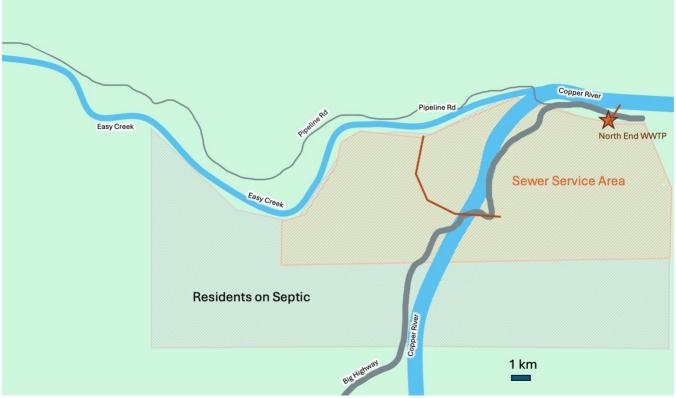
» sharing with leadership to describe One Water in your context

» guiding the Screening Assessment

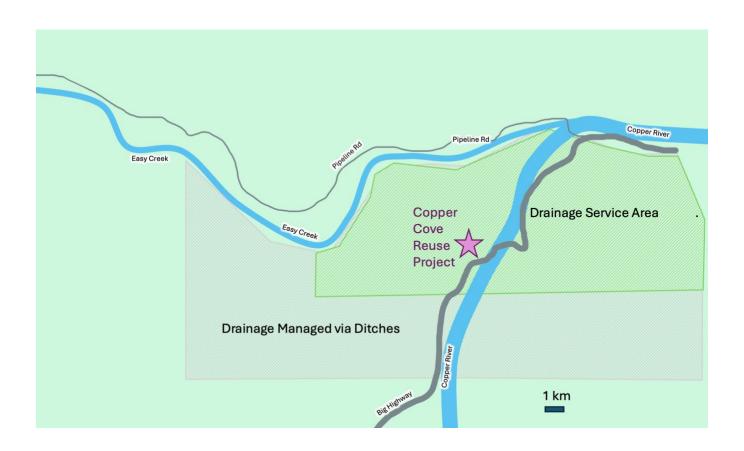» populating the WSRMP (if doing)

» clarifying roles/expectations for WSRMP team members

Now that you have completed the One Water Scoping form, return to the Planning Guide to move on to the screening step.

Easy Creek

Pipeline Rd

Pipeline Rd

Copper River

Copper River

Easy Creek

Town Limits

Big Highway

Copper River

1 km

Easy Creek
Sub-Watershed

Copper
River
Watershed

10 km

Top map:

Well Field (Source A)

Easy Creek Transmission Line

Pipeline Rd WTP

Pipeline Rd

Copper River

Easy Creek

Easy Creek

Pipeline Rd

North Distribution Area

Copper WTP (Source B)

East Distribution Area

Residents on Wells

Copper River

Big Highway

1 km

Bottom map:

Easy Creek

Pipeline Rd

Pipeline Rd

Copper River

Easy Creek

North End WWTP

Sewer Service Area

Residents on Septic

Copper River

Big Highway

1 km

Easy Creek

Pipeline Rd

Pipeline Rd

Copper River

Copper
Cove
Reuse
Project

Drainage Service Area

Easy Creek

Drainage Managed via Ditches

Copper River

Big Highway

1 km