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Policy Implementation in Collaborative Watershed Management: A Multi-Case  
Study of Collaborative Efforts under Washington's Watershed Planning Act

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**Abstract**

Policy Implementation in Collaborative Watershed Management:  
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In many parts of the world, collaborative watershed management has become a common approach for place-based water resource governance. This study examined four local-scale collaborative watershed planning efforts that developed Watershed Management Plans under Washington State's Watershed Planning Act of 1998. These efforts are ongoing, with an emphasis on plan implementation, but prospects for continued funding are uncertain. I used qualitative interview data supported by document analysis to explore topics related to plan implementation in collaborative regimes, plan use, and strategies for improving the sustainability of collaborative efforts. Results demonstrate how the broader-scale policy context, resources, program choices, and participant interactions can influence plan implementation. The plans themselves have largely fulfilled their intended roles as statements of participants' shared

theories of change, though funding, competing planning frameworks, and elapsed time have in some cases diminished the usefulness of these documents. Strategies to improve collaborative partnership sustainability include increased community outreach and consolidation of governance and resources. My findings suggest that a watershed's geographic location and population are not good predictors for these types of issues. Instead, the most crucial factors for implementation may vary according to the types of actions being taken and the types of stakeholders that are affected. Resources, capacities, and stakeholders from outside the watershed's biophysical boundaries can also benefit implementation and sustainability.

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## CHAPTER I. INTRODUCTION

Over the past three decades, collaborative approaches to environmental management have become increasingly common in the United States. Practitioners have applied collaboration to a variety of topic areas, including forestry, habitat restoration, and nonpoint source pollution control. Government and non-government actors began implementing collaborative management strategies in the 1980s, in response to escalating environmental litigation and increasing skepticism toward civic institutions and top-down agency decision-making (Wondolleck & Yaffee 2000; Koontz et al. 2004). Scholars also often trace the emergence of collaborative environmental management to devolution, privatization, and other trends in the larger “movement away from government and toward governance” (Koontz et al. 2004).

Collaborative watershed management has become a common governance strategy, with numerous examples in the United States and elsewhere in the world. Collaborative watershed management consists of multiple entities working across the boundaries of organizations, sectors, and/or levels of government in order to address place-based issues of water supply, water quality, and/or aquatic habitat. These collaborative efforts can exhibit a variety of functions, membership structures, and geographic scales, ranging from multi-state intergovernmental policymaking efforts to community groups implementing on-the-ground restoration projects within a single sub-basin.

In Washington State, a pair of late-1990s laws laid the groundwork for (and signaled the state’s interest in) a collaborative and locally-driven approach to water resource management. In 1998, the state legislature passed the *Watershed Planning Act* (RCW 90.82) and the *Salmon Recovery Planning Act* (RCW 77.85) in response to “a long history of conflict and litigation over water supply and water rights...combined with the impending listings of several salmon stocks

under the Endangered Species Act (ESA)” (Ryan & Klug 2005). A handful of multi-party, local-scale natural resource management efforts were already underway throughout the state, but these two pieces of legislation led to the development of dozens of collaborative initiatives under a consistent set of guidelines and processes. The latter law specifically addressed salmon recovery, while the former encompassed a wider array of water resource topics.

In particular, the Watershed Planning Act created a top-down framework that encouraged local governments to engage with non-government entities in place-based water resource planning. To encourage participation, the Act instructed the state to provide funding and technical assistance to help local actors carry out their work. Activities under the Watershed Planning Act occurred at the Water Resource Inventory Area (WRIA) scale. The exact membership and suite of activities varies from WRIA to WRIA, but most efforts have featured participation from a mixture of public and private actors who are collaboratively working to address issues related to water supply, water quality, instream flows and/or aquatic habitat. The Act consists of four planning steps or “phases:” (1) organizing and convening local participants, (2) conducting resource assessments, (3) developing a Watershed Management Plan (WMP), and (4) implementing management actions. Funding and technical assistance are available for each phase (RCW 90.82.040).

In the nearly two decades since the Act became law, local participants have produced 31 Watershed Management Plans (WMPs) covering 39 of the state’s 65 WRIsAs. The extent to which the WMPs have been implemented has varied throughout the state, but some efforts persist into the present day. State funding provided by the Act has largely been exhausted, though planning efforts remain eligible for grants from a variety of public and private sources.

My research examines several of the local planning efforts that have occurred under the Watershed Planning Act, at a fairly late stage of the statewide program's lifespan. This project focuses specifically on two aspects of collaborative watershed management (and collaborative environmental policy as a whole): (1) implementation of collaboratively-developed resource management plans and (2) the organizational sustainability of these governance efforts over time.

For the first topic, a critical output of a collaborative governance effort (including those under the Watershed Planning Act) is often an agreement or plan that sets forth actions to address a policy problem or dispute. In these situations, it is important for researchers and practitioners to consider the extent to which the plan has been implemented, the factors that have caused this level of implementation, and the outcomes of the effort. Despite the high volume of scholarship on collaborative environmental management, the literature on the intersection of collaborative governance and policy implementation has been comparatively underdeveloped (Koontz & Newig 2014). My project adds to our understanding of how collaborative watershed management plans are implemented and what types of issues can influence these efforts.

For the second topic, practitioners and scholars should also consider the sustainability of these collaborative governance efforts over time. Prior studies have described how collaborative efforts may have difficulty sustaining themselves over time due to losses of funding and turnover or attrition of participants (Bonnell & Koontz 2007; Margerum 2011; Koontz & Sen 2013). In turn, these sustainability issues can have implications for implementation and continued coordination across policy actors. My project explores the persistence strategies of different groups operating within the same collaborative governance framework but in different environmental and socioeconomic settings.

These two topic areas are important for policymakers, practitioners, and scholars, particularly given the ongoing nature of water resource management challenges including salmon recovery, nonpoint source pollution, and climate change adaptation. Moreover, understanding implementation and sustainability of collaborative efforts is important given the continuing popularity of collaborative governance, and the trends of shrinking public sector budgets. The current funding situation and the time elapsed since the passage of the Watershed Planning Act combine to create an excellent opportunity to examine these research topics. Using a multi-case study and qualitative research methods, I explore watershed plan implementation and organizational sustainability in four watersheds that have participated in the Watershed Planning Act for nearly two decades. I purposively selected these watersheds based on geography and population, in order to observe whether these attributes affect implementation and sustainability. My four specific research questions are:

1. What factors have helped and hindered the implementation of the planning areas' WMPs?
2. How have the participants in each area used the WMPs in their implementation work?
3. How has the collaborative effort's Planning Unit (or equivalent) contributed to implementation?
4. How have the collaborative efforts responded to reduction in state funding, and what are the prospects for the future of their work?

Following this introduction, I provide a review of the relevant literature and a more detailed description of the Watershed Planning Act. I then describe my research methods, introduce my four cases, and present the results for each research question. I conclude with a discussion of my findings in the context of the literature, suggested opportunities for further study, and practical implications for resource managers.

## CHAPTER II. LITERATURE REVIEW & BACKGROUND ON WATERSHED PLANNING

### II.A Collaborative Governance: Definitions, Frameworks, and Implementation

Collaboration is not confined to environmental and natural resource issues. Collaborative governance approaches have proliferated across numerous public policy areas, and this proliferation has attracted a great deal of attention from academics in a variety of disciplines. Over the past several decades, scholars have conducted empirical investigations and meta-analyses across a wide range of policy topics, leading to the development of various theories and analytic frameworks. In turn, the resulting body of scholarly work offers many definitions of “cross-boundary collaboration,” “collaborative partnerships,” “collaborative governance,” and related terms (Ansell & Gash 2008; Emerson & Nabatchi 2015).

For the purposes of this project, I use Emerson & Nabatchi’s (2015) definition of *collaborative governance*, which is “the processes and structures of public policy decision making and management that engage people across the boundaries of public agencies, levels of government, and/or the public, private, and civic spheres to carry out a public purpose that could not otherwise be accomplished” (p. 18). I chose this definition due to its broad and comprehensive characterization of both the cross-boundary linkages and the overall purpose of the effort. I also draw on Emerson & Nabatchi’s (2015) definition of a *collaborative governance regime*, which is “a particular mode, or system for, public decision making in which cross-boundary collaboration represents the prevailing pattern of behavior and activity” (p. 18).

Building on case studies and meta-analyses, scholars have proposed a number of analytic frameworks to conceptualize the key variables, processes, linkages, and outputs associated with collaborative governance. Prominent examples of these analytic frameworks include those by Wood & Gray (1991), Thomson & Perry (2006), and Ansell & Gash (2008). The aforementioned

frameworks are intended to be applicable to collaboration in a variety of settings, though other scholars have developed frameworks for specific issue areas.

Integrating and building on this scholarship, Emerson & Nabatchi (2015) offer another framework that can “speak to different research traditions and be generalizable cross variations in collaborative arrangements” (p. 24). This framework conceptualizes a collaborative governance regime as consisting of three cyclical and interrelated processes (called *collaboration dynamics*) nested within a *system context* (see Table 1). Other key factors in the framework include *drivers* (elements arising from the system context that provide an impetus for collaboration), *actions*, *outcomes*, and *adaptation* (where outcomes cause changes to the system context). Due to its recent and integrative nature, my analysis draws heavily from the concepts in this framework.

Table 1: Components and key variables in Emerson & Nabatchi’s (2015) integrative framework for collaborative governance

	<b>System Context</b>	<b>Collaboration Dynamics</b>	<b>Other inputs to process</b>
Key variable or process (and secondary components)	Public service or resource conditions	Principled Engagement ( <i>Discovery, Definition, Deliberation, Determinations</i> )	Drivers resulting from system context ( <i>uncertainty, interdependence, consequential incentives, initiating leadership</i> )
	Policy & legal frameworks	Shared Motivation ( <i>Trust, Mutual Understanding, Internal Legitimacy, Commitment</i> )	
	Socioeconomic & cultural characteristics	Capacity for Joint Action ( <i>Procedural/Institutional Arrangements, Leadership, Knowledge, Resources</i> )	Actions yield outcomes, which feed back into the system context via adaptation
	Network characteristics		
	Political dynamics & power relations		
History of conflict			

Emerson & Nabatchi's framework draws on many common themes from the literature on collaboration, including the importance of resource conditions, the history of conflict (or cooperation), interdependencies, and interactions or relationships among participants. Elements of these interactions or relationships include trust, dialogue, and shared motivation or understanding of the situation (Ansell & Gash 2008).

Emerson & Nabatchi (2015) also argue that that "effective engagement typically requires balanced representation from all 'relevant and significant different interests'" (p. 59). This echoes a common theme from the literature on collaboration and consensus building, which stresses the importance of who is "at the table" (see Innes & Booher 1999 and Carlson 1999, among many others). These scholars argue for the importance of building broadly inclusive collaborative efforts, with membership from all of the interest groups with a stake in the policy issue. Inclusiveness and representation have also been offered as two evaluation metrics for "assessing the democratic merits of collaborative public management" (Leach 2006, p. 100). Leach (2006) also points to the importance of resources and capacities when evaluating stakeholder representation, noting that some stakeholder groups may lack sufficient resources, knowledge, skill, or time to fully and effectively participate in a collaborative process.

The literature at the intersection of collaboration and policy implementation is comparatively underdeveloped. Though there is often a link between collaborative processes and outcomes, many frameworks tend to devote limited attention to the implementation of plans or agreements in collaborative governance regimes (Koontz & Newig 2014). Regarding implementation, Emerson & Nabatchi (2015) describe collaborative actions as "outputs" or "products" of the collaboration dynamics. These actions may take many forms and be carried out by a variety of actors. They also suggest that success begets success, stating that "when

collaborative actions are effective, they are more likely to reinforce a collaborative governance regime’s shared theory of change and propel subsequent actions in line with this theory” (p. 83). Once the actions occur, they note that the outcomes of these actions eventually feed back into the antecedents or system context. However, it is less clear how the inputs and process variables influence the implementation of a plan or agreement in a collaborative setting. It is also unclear if (and how) any additional factors influence this implementation of collaborative actions.

Elsewhere, several authors have integrated the scholarship on collaboration with prominent frameworks from the policy implementation literature, in order identify the variables that influence the implementation of plans or agreements in collaborative settings. These synthesis efforts call attention to stakeholder participation, the design of the agreement and/or recommendations, and the structure or process for implementation (Margerum 2002; Koontz & Newig 2014). Koontz & Newig (2014) integrate previous studies and identify attributes in four key variable sets. They then contrast the attributes for collaborative settings with attributes of more “traditional” and “interorganizational” policy implementation situations. Table 2 shows the variable sets and attributes for collaborative settings, highlighting the important considerations within policy design, implementation process, context, and participation.

Table 2: Implementation variable sets and specific attributes for collaborative settings from Koontz & Newig (2014)

<b>Variable set/category</b>	<b>Specific attributes</b>
Design of the policy recommendations	Clear criteria for resolving goal conflicts
Process of implementation	Resources Shared causal theory of action Network interactions post-agreement Knowledge & learning Skillful leadership

Socioeconomic & political context	Conducive conditions Integration with other planning processes
Target group	Target groups participate in agreement development Diverse stakeholder representation

Implementation in collaborative settings also relates to cross-boundary networks, and different types of networks may confer different types of benefits. Drawing from a variety of scholarly fields, Margerum (2011) describes how collaborative partnerships in the land use and environmental management fields can achieve implementation results through three different kinds of networks. Margerum describes these three types of networks as:

- *Social*: interpersonal connections in the tradition of Robert Putnam’s social capital.
- *Interorganizational*: “formal and informal linkages between organizations that coordinate a set of activities” (p. 212).
- *Political*: interconnected groups of individuals who “occupy political and policy positions along with their sustained relationships with other position holders” (p. 235).

Margerum suggests that collaborative partnerships can employ network-based implementation strategies, with the choice of strategy based on the partnership’s characteristics, goals, and desired actions. He also provides a series of key characteristics and associated evaluation criteria for assessing each type of network with regard to its likely contributions to implementation.

Reflecting on the state of the literature, Koontz & Newig (2014, p. 424) note that “it is likely that the variables most affecting collaborative implementation vary in different situations” due to the complex and disparate settings of natural resource management. Therefore, they call attention to the desire for “middle range theories” that “seek to identify the bounds of relationships among variables in their applicability in different contexts” (p. 424). This need for

“middle range theories” suggests that we can gain insights from comparative case studies of collaborative implementation in various socioeconomic and environmental settings.

## **II.B Collaborative Watershed Management**

As noted in the introduction, collaborative watershed planning and management is a common topic in the environmental policy literature. This sub-field mirrors the collaboration literature as a whole, with scholars using empirical case studies to examine a wide variety of topics. Here I briefly describe literature that is particularly relevant to (1) the Watershed Planning Act, (2) analytic frameworks specific to collaborative water management, or (3) implementation in collaborative water resource governance regimes.

Specific to the Watershed Planning Act, Ryan & Klug (2005) found that the early stages of the planning process had conferred several early benefits to the participants, such as building trust and relationships and improving local knowledge of water resource issues. However, participants also faced a number of challenges to their implementation of the Act’s planning framework, including a lack of adequate funding, deficiencies in technical expertise, and unrealistic timelines for the process.

More broadly, several studies propose analytic frameworks specific to collaborative watershed management. These frameworks are similar to the models for generalized collaborative governance, with attention to antecedents or context, the collaborative process, and outputs or outcomes. Bentrup (2001) proposed a framework (based on an earlier design from Selin & Chavez 1995) for conceptualizing the considerations that were “important for the establishment and operation of collaboration in watershed planning from the perspective of the planning coordinator” (p. 740). The framework includes five linked, linearly sequential stages: *Antecedents, Problem Setting, Direction Setting, Implementation, and Monitoring & Evaluation*,

all of which are also connected to an additional *Acquiring or Redirecting Resources* consideration. Within *Implementation*, Bentrup lists “dealing with constituencies,” “roles assigned,” and “tasks elaborated” as key considerations or variables.

Meanwhile, Lubell, et al. (2005) propose a model for relating *context, process, legitimacy,* and *civic community* (including human/social capital and trust) to *policy outputs* and *watershed outcomes*. Based on results from a series of empirical studies, Lubell and his coauthors argued that the process (or the “institutions for collaborative watershed management”) and the civic community influence policy outputs, which consist of both plan formulation and project implementation. In turn, they argue that policy outputs lead to watershed outcomes and reinforce the legitimacy of the collaborative effort. These outcomes then feed back into the watershed context and influence the survivability of the collaborative process.

Beyond these frameworks, scholars have identified a number of key factors that influence collaborative decision-making processes, participation incentives, network interactions, and plan implementation. For example, funding and capacity constraints can impact collaborative watershed management and other types of collaboration at all stages of a program’s lifespan (Wondolleck & Yaffee 2000; Ryan & Klug 2005; Lurie & Hibbard 2008; and Margerum 2011). In particular, funding is a critical element when implementing the recommendations in a collaborative plan or agreement (Leach & Sabatier 2005; Koontz & Newig 2014). Access to adequate technical information is another enabling factor for helping collaborative watershed partnerships reach their goals, with government agencies as important information sources (Chaffin et al. 2015). Network interactions have also been identified as important factors for implementation (Lejano & Ingram 2009; Margerum 2011; Koontz & Newig 2014).

Collaborative watershed groups can attract participation from a wide variety of government and non-government stakeholders, depending on the setting and context. In general, “people participate in collaborative partnerships for two primary reasons: (1) to improve ecological and/or socioeconomic conditions in the watershed...and/or (2) to protect themselves by making sure the partnership does not do something to harm their basic interests” (Lubell, et al. 2005, p. 277). Drawing from his framework’s *Antecedents*, Bentrup (2001) also notes that financial incentives or the perception of a resource crisis can motivate stakeholders to join a collaborative effort. In some cases, agencies may also be compelled to participate in a collaborative partnership due to statutory or regulatory requirements.

In turn, these participants can influence (and contribute to) the collaborative effort’s processes and actions. Agencies in particular play a variety of roles and can influence the group’s scope, activities, or overall success (Koontz et al. 2004; Bidwell & Ryan 2006; Chaffin et al. 2015). Group structure, composition, and affiliation can also affect the types of decisions and actions that are pursued (Moore & Koontz 2003; Bidwell & Ryan 2006). Finally, continued participation from the stakeholders who helped develop a plan or agreement can also be helpful for implementation efforts (Gray 1989). For all of these reasons, the participation and ongoing support from stakeholders continues to be an important consideration during the implementation phase of a collaborative effort (Margerum 2002; Koontz & Newig 2014).

In addition to the abovementioned factors, the local environmental and socioeconomic context can influence collaborative watershed management in a variety of ways. For example, land use patterns, perception of environmental problems, and the pre-existing network of policies, institutions and actors can be interrelated and can influence the types of actions pursued and the extent to which collaborative efforts impact policy (Koontz 2005; Hardy & Koontz

2010). When comparing the role of contextual factors in urban and rural watersheds, Hardy and Koontz (2010) note that “different sets of variables are critical for success across the two types of settings” (p. 79).

## **II.C Sustaining Collaborative Partnerships**

Margerum (2011) describes the literature on sustaining collaboratives as “incredibly vast while at the same time sparse” (p. 149). This strain of scholarship draws from the literature on organizational management and leadership, but there is limited work directly examining collaborative sustainability. I briefly summarize collaborative sustainability issues regarding five key themes: (1) commitment and participation, (2) organizational structure, (3) organizational goals, (4) funding, and (5) adaptability.

Two key sustainability factors from the literature are ongoing stakeholder commitment and ongoing participation (Curtis et al. 2002; Lubell et al. 2005; Margerum 2011). Commitment describes stakeholders’ levels of buy-in, support for, or interest in contributing to the effort. Participation is closely related to this level of commitment; depending on the scenario, participation may include attending meetings, contributing resources or capacity, and/or implementing policies or programs. Collaborative initiatives (and associated plans, agreements, or programs) cannot survive if key stakeholders are no longer participating or are no longer supportive of the effort. Stakeholder participation and commitment may be related to perceptions of the group’s legitimacy and effectiveness (Lubell et al. 2005), interpersonal or interorganizational dynamics, and the transaction costs of contributing to the effort (Margerum 2011). Occurrences of planning fatigue, burnout, and turnover of key individuals can also represent threats to commitment and ongoing participation (Curtis et al. 2002; Margerum 2011).

Elements of the collaborative effort's organizational structure may also contribute to sustainability. Important elements include clear organizational responsibilities at appropriate scales (Curtis et al. 2002), stable staffing, effective leadership (Margerum 2011), and measures that build the capacity of the organization and its participants (Curtis et al. 2002; Margerum 2011).

Collaborative efforts can also influence their own sustainability through their choice of goals, issue areas, or programming. For example, a collaborative partnership can choose to make organizational development and sustainability a major priority, though this can run the risk of neglecting tangible management actions and outcomes (Bonnell & Koontz 2007). Groups can also emphasize programming with community benefits or connections to citizens' livelihoods, as a way of building commitment and increasing participation in the effort (Koontz & Sen 2013).

Numerous studies have identified funding as a key factor for all stages of the collaborative process, and the importance of funding extends to matters of sustainability (Curtis et al. 2002; Margerum 2011; Koontz & Sen 2013). In many situations, collaborative and community-based watershed management groups are heavily reliant on government funding, making these groups vulnerable to reductions in this source of financial support. In recognition of potential funding constraints, collaborative groups can choose to develop *ex-ante* strategies that seek to proactively avoid funding shortages (Koontz & Sen 2013). Examples of these *ex-ante* strategies focus on building community support through media coverage, reaching out to elected officials, ensuring broad representation, and connecting the groups' work to community members' livelihoods. On the other hand, collaborative efforts may also be forced to deploy *ex-post* strategies to cope with funding shortages as they occur. Examples of *ex-post* strategies include seeking new funding

sources (and adjusting the group's mission accordingly), changing the scale of the group's work, and merging with a partner organization (Koontz & Sen 2013).

A final element of sustainability is adaptation, or the group's ability to identify and manage changes in its environment or its own internal structure. Many of the aforementioned *ex-ante* or *ex-post* strategies could be viewed as adaptation measures, in recognition of pending (or current) funding problems. In presenting their framework for collaborative governance, Emerson & Nabatchi (2015) argue that "over time, collaborative governance regimes must face and respond to the consequences of the outcomes they have created" and must "adapt to both ongoing changes in the external system context and to internal changes within itself" (p. 85).

## **II.D Overview of the Watershed Planning Act**

In Washington State, the Watershed Planning Act encourages local governments to engage in cooperative water resource planning at the watershed scale. The stated purpose of the Act is "to develop a more thorough and cooperative method of determining what the current water resource situation is in each [WRIA] of the state and to provide citizens with the maximum possible input concerning their goals and objectives" (RCW 90.82.005). The Act is also based on a legislative finding that "the local development of watershed plans for managing water resources and for protecting existing water rights is vital to both state and local interests" (RCW 90.82.010). See Appendix A for an extended description of this law.

The Act specifies broad requirements for the structure and scope of these local planning efforts, but program participation is voluntary. As an incentive, the Act creates a four-stage, state-supported funding mechanism as illustrated in Table 3 (RCW 90.82.040). Activities can occur at the single- or multi-WRIA scale. At minimum, all participating planning efforts must address *water quantity* topics; the Act also identifies *water quality*, *habitat*, and *instream flows* as

optional planning elements. In practice, several efforts have also examined *storage* as a sub-topic within water quantity.

Table 3: Description, duration, and funding for each phase of the Watershed Planning Act

Phase #	Name	Brief description	Duration	Funding Amount
1	Organizational	Set up local program framework, establish Planning Unit	One time	\$50,000 for one WRIA  \$75,000 if multiple WRIAs
2	Assessment	Conduct water resource assessments or studies	One time	\$200,000 per WRIA  Additional grants of \$100,000 available for assessments of optional elements
3	Planning	Prepare a watershed management plan (WMP)	One time	\$250,000 per WRIA
4	Implementation <sup>1</sup>	Prepare a detailed implementation plan (DIP) and implement WMP recommendations	Up to five years	\$100,000 per year (yrs. 1-3) and \$50,000 per year (yrs. 4-5) for one WRIA.  \$25,000 per year (yrs. 1-3) and \$12,5000 (yrs. 4-5) for each additional WRIA

1: Phase 4 added in a 2003 amendment

At the watershed level, local governments play the role of initiators. The Act identifies all counties, the largest city, and the largest water supply utility as the *Initiating Governments* that must all give their consent prior to beginning the planning process (RCW 90.82.060). Any Native American tribes in the watershed must also be at least invited to participate as Initiating Governments. Each planning area must also have a *Lead Agency* that receives state grants and provides staff support for the process. At the state level, the Washington Department of Ecology (Ecology) is agency in charge of program and grant administration. The Act instructs the state to

provide technical support to the local planning efforts if requested, and a dozen state agencies are party to a Memorandum of Agreement for coordinating their local involvement.

A planning area's *Planning Unit* serves as another key component of the local program structure. Planning Units often serve as venues for participating entities to exchange information, coordinate work, and develop the WMP and DIP. Most Planning Units have taken the form of committees made up of representatives from various government agencies and non-government interests. These Planning Units are originally convened by the Initiating Governments and supported by the Lead Agency. The Act requires Initiating Governments to provide an opportunity for local non-government interests to give "input and direction" into watershed management activities (RCW 90.82.030), and this engagement typically occurs within the Planning Unit.

The Watershed Management Plan (WMP) describes the Planning Unit's recommendations and strategies for addressing local water issues in the watershed, based on information gathered by the Phase 2 assessments or studies. The Planning Unit officially adopts the WMP through consensus or voting. Additionally, each county legislature in the planning area must approve the WMP before the document can take effect (RCW 90.82.130). The Act also instructs the state to use the approved WMP to inform future water resource management decisions for the watershed.

As part of Phase 4, Planning Units develop a companion document known as the Detailed Implementation Plan (DIP). This DIP builds on the WMP by providing additional details on how recommendations and strategies will be implemented, including timelines, assigned tasks, and funding sources (RCW 90.82.043). Once the DIP is finished, local participating entities can use Phase 4 funding to implement the items in their planning documents. Entities can also supplement Phase 4 funding with additional grants or their own money and resources.

Since 1998, program participants have produced 31 WMPs (covering 39 WRIAs). Most of these WMPs were adopted between 2004 and 2008. The extent of plan implementation has varied across with state, with some planning areas carrying out numerous actions under their WMPs and DIPs. Current Planning Unit status is also variable; some Planning Units played a role in Phase 4 implementation and continue to meet, while others are no longer active. Almost all participating planning areas have exhausted their allocation of Phase 4 funding, though the state (through Ecology) continues to offer grant money through the *Watershed Planning Implementation & Flow Achievement Capital Grant Program* (Ecology 2015; Ecology 2016b). Planning efforts are also eligible to receive funds from other public or private sources.

## **CHAPTER III. METHODS**

### **III.A Case Study Design**

This project uses a multi-case study approach; I chose four watersheds for in-depth study, with each watershed representing a single “case.” A case study methodology was appropriate for this project because it allowed for a rich and thorough analysis of my research questions, while providing an opportunity to compare findings across several settings (Gerring 2006; Yin 2013). My design holds constant the general collaborative planning framework (the Watershed Planning Act) across all cases, while varying several important geographic and socioeconomic attributes. Within each case, I used consistent methods to collect qualitative data from documents and semi-structured interviews. Gathering data from multiple sources was important for triangulation and for gaining additional insights on the research topics. For example, the analysis of planning documents or project reports helped me “ground truth” interviewees’ statements, while the interviews themselves helped me understand the context and drivers that had influenced the information in the documents.

### **III.B Case Selection**

I used a stratified and purposive strategy to select four planning areas for in-depth study: The Nooksack (WRIA 1), San Juan (WRIA 2), Entiat (WRIA 46), and Spokane River (WRIs 54, 55, 56 and 57) (Figure 1). I chose these planning areas based on variations in two attributes, both of which had two possible values: geography (values are WEST and EAST) and population (values are HIGH and LOW). Each case represents a unique combination of these attributes and values, as shown in Table 4. I also used several criteria to narrow the pool of WRIs that were eligible for selection.

Figure 1: Case identification &amp; selection process

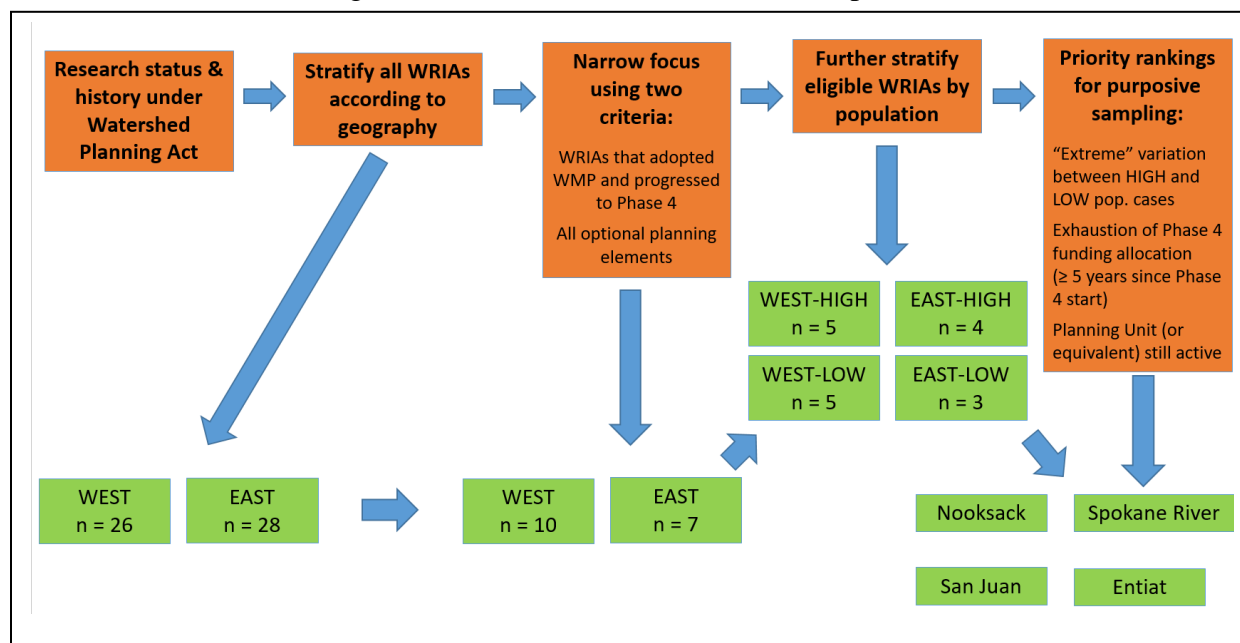


Table 4: Cases displayed according to attributes and values

	<b>HIGH Population</b>	<b>LOW Population</b>
<b>WESTERN Washington</b>	Nooksack (WRIA 1)	San Juan (WRIA 2)
<b>EASTERN Washington</b>	Spokane River (WRIAs 54, 55, 56, & 57)	Entiat (WRIA 46)

Prior research suggests that contextual factors (including social, environmental, or resource characteristics) can affect the processes and activities of collaborative initiatives (Koontz 2005; Koontz 2010; Emerson & Nabatchi 2015). Therefore, this stratification scheme allowed me to explore how some of these contextual factors might affect plan implementation and organizational sustainability. I specifically chose to stratify by geography and population because (1) these attributes influence many other regional characteristics and (2) it was relatively clear where the state's WRIAs lie according to these attributes.

In terms of geography, there are substantial environmental and socioeconomic differences between western and eastern Washington, including climate, water regimes, economy, land use, and political ideology. Referencing the frameworks for collaborative governance, these

differences could lead to distinctions in other drivers, antecedents, planning priorities, or recommended actions. Similarly, variations in population could lead to meaningful differences in funding, “institutional thickness” (Koontz 2005), or water resource conditions.

For the geography variable, I assigned WRIsAs to the WEST or EAST group depending on their position relative to the crest of the Cascade Mountains. For the population variable, I calculated a coarse estimate of each eligible WRIA’s population and then divided the WRIsAs into equal-sized HIGH population and LOW population groups. I counted multi-WRIA planning efforts (such as those occurring in the Spokane or Lewis/Salmon-Washougal areas) as one single unit for the purposes of this sorting. This process created four stratification groups.

In addition to these stratification attributes, I used several selection criteria to control for other characteristics that might influence my findings. First, I chose to limit the study to only those areas that had adopted a WMP and had at least made an attempt to implement actions under Phase 4. Second, I limited the project scope to planning areas that were addressing all three optional planning elements (water quality, habitat, and instream flow). The former criterion relates to the purpose of this project; my goal is to examine the implementation of WMPs, therefore it made sense to exclude areas that did not reach Phase 4. I used the latter criterion to control for variations in planning or implementation that might have resulted from a focus on certain topics over others.

When it came time to select my cases, I also used three additional criteria to prioritize eligible planning areas. First, since I was interested in exploring cases with different population, I tried to select cases that were close to the high and low ends of the population size range (purposive “extreme variation” per Gerring 2006). Second, I had a preference for planning areas that had exhausted their initial allocation of Phase 4 funding from the state under the Watershed

Planning Act; this exhaustion point is based on an elapsed time of at least five years since the start of Phase 4. Since one of my questions dealt with sustainability and long-term funding, I wanted to focus on planning areas that could no longer rely on state funding from the Act. Third, I also had a preference for planning areas that were continuing to implement management actions or to at least convene Planning Unit meetings. This third criterion was an attempt to focus on areas where implementation issues would be “fresher” in peoples’ minds, and where participants were more likely to be actively grappling with long-term sustainability. My use of these criteria ultimately helped me identify my “most-preferred” planning areas in each stratification group.

In order to identify eligible planning areas and assign attribute values, I conducted a preliminary review of all of the state’s WRIAs (results summarized in Appendix B), focusing on location, key Watershed Planning Act milestones, scope of planning, and population. I used Ecology’s statewide WRIA map to assign WEST and EAST to each planning area. WMPs, DIPs, and other planning documents provided information on the other review topics. For population, WMP statistics were often out of date. I supplemented this material with more recent census data where possible, but fortunately the out-of-date WMP numbers were still sufficient for a coarse stratification. I also had initial conversations with Lead Agency officials in each prospective planning area prior to contacting interviewees or beginning document analysis.

### **III.C Interview Methodology**

I chose to use a qualitative research approach because participants in local watershed management can provide information that is relevant to the topic but unavailable through other means. Per Weiss (1995), qualitative interviewing is an effective way to gain insight into an individual’s knowledge and perspectives on a topic. I specifically chose to use a free-response, semi-structured interview format to collect data from a pool of individuals in each planning area.

Prior to the start of data collection, I developed a semi-structured interview guide (see Appendix C) and received approval from the University of Washington's Institutional Review Board.

My semi-structured interview protocol followed a standard methodology for interviewing in social science research (Weiss 1995; Robson 2002). This approach allowed me to ask every interviewee a consistent set of core questions in a consistent order, but with opportunities to ask customized and specific follow-up questions on particular responses (Robson 2002). This format provided a good mixture of flexibility and consistency, as it allowed me to gather in-depth insight on interesting or unclear topics while still providing for comparisons across all the interviews.

I conducted a total of 24 interviews (five to seven per planning area). One interview involved two individuals from the same organization, and all other conversations were one-on-one. I strove to speak with a diverse array of individuals, and each planning area's interviewee pool consisted of representatives from a variety of government agencies and non-governmental groups. Agency officials in my interviewee pool represented various federal, tribal, state, and local governments (including conservation districts and other special-purpose agencies). I interviewed officials from the Lead Agency and at least one other government entity in each planning area. I also spoke with citizens and representatives from a range of interests, including environment/land conservation, agriculture, and private water purveyors.

Overall, I endeavored to speak with people who had at least a few years of experience working with the area's watershed management activities. I was particularly interested in hearing from individuals who had knowledge of both planning and implementation processes. Therefore, my interview data primarily conveys the knowledgeable insider's perspective on these watershed planning efforts. I might have heard different perspectives from people who had not participated

in planning activities, but I judged that my research questions could be best answered by those who had worked within watershed planning.

I identified interviewees through conversations with staff at each planning area's Lead Agency. During these exchanges I explained the purpose of the project and requested the names of prospective interviewees who met the previously described criteria. I also supplemented this input with information from my own review of planning documents and meeting minutes. In one case the Lead Agency made initial contact with prospective interviewees to secure permission to release their names, but in all cases I retained final discretion on interviewee selection. I initially contacted all interviewees and Lead Agency staff via email (with an attached project briefing paper), with follow-up phone calls as needed.

Interviews lasted between 40 minutes and two hours each. I supplied all interviewees with the question list ahead of time. All interviews occurred via telephone, and I was the only researcher to participate in the conversations. I audio-recorded all interviews with participants' knowledge and permission, and then transcribed all audio recordings in full. I continued conducting interviews until I had either (1) exhausted the number of prospective and interviewees or (2) reached a saturation point where additional interviews did not yield substantial new information or offer the chance to speak with additional distinct perspectives.

### **III.D Document Review**

Prior to conducting the interviews, I reviewed a variety of documents related to each case's planning efforts. These documents included the WMP, DIP, individual project reports, progress reports for the overall planning effort, meeting minutes, and newsletters or other publicity materials. For most documents, I created brief summary sheets with concise notes on key pieces of information:

- Names of organizations or individuals who sponsored, contributed to, or gave permission for projects, programs, or other implementation actions
- Names of individuals participating on each effort's Planning Unit
- Key dates and general descriptions of projects, policies, or other actions that have been completed
- References to funding sources

The information from these documents was helpful during the process of identifying prospective interviewees. This review also helped me understand the history and context of watershed planning in each case. In turn, this familiarity helped me with the analysis and interpretation of the interview data, particularly with respect to ground-truthing interviewees' statements and getting a better handle on some of the events or factors that they were describing.

### **III.E Data Analysis**

My qualitative analysis approach involved data reduction, data display, and conclusion drawing (Miles & Huberman 1994; Robson 2002). Written text (in large quantities) was the primary format for raw project data; as noted by Robson (2002), this large amount of text created a number of analytical challenges, necessitating the use of a consistent reduction, display, and analysis strategy. As stated above, I produced summary sheets (or short entries on a consolidated summary sheet) for most of the documents that I reviewed in order to concisely capture and manage key information relevant to my research questions. These summary sheets were particularly useful when working with the WMPs, DIPs, and other lengthy documents.

I used Nvivo Pro 11 software to assist with the analysis, display, and management of the interview data. Prior to beginning data analysis, I conducted a brief comparison between the trial versions of Nvivo Pro 11 and ATLAS.ti 7, using a test document as a data source. For each program, I tested the functionalities for basic coding, queries, concept mapping, and management

of data and source documents. I concluded that both software packages would provide adequate and equivalent services (at least for my purposes), but I elected to use Nvivo due to its simpler and more intuitive user interface.

For the interview data, my primary methods of data reduction and display were coding, memoing, and data mapping (Robson 2002). With software assistance, I coded all interview transcripts for qualitative concepts, themes, and patterns (Miles & Huberman 1994; Robson 2002). I used Nvivo's query function to assist with this task. Nvivo's memo function was a useful method of tracking my early thoughts about connections across interviews, documents, themes, or cases. The ideas recorded in these memos were useful during the process of analyzing results and drawing conclusions.

For my coding work, I initially developed a separate list of coding categories for each interview question, though I also kept track of similar codes that cut across multiple questions. I built these coding categories based on themes emerging from the data, rather than trying to fit the data into a set of premade codes. My coding strategy followed a constant comparison approach (Robson 2002) that consisted of multiple read-throughs of each question accompanied by continual refinement, consolidation, and interpretation of coding categories and text classifications. The final coding lists for each question ultimately consisted of first-order themes and (where appropriate) a number of descriptive, second-order categories in a hierarchical arrangement (see Appendices D, E, and F). These second-order categories helped convey and organize the finer-grained variation in interviewees' comments within larger themes. I then used Nvivo's data mapping capabilities to display many of the connections between codes and cases. These codes and data maps formed the basis of my data analysis, results reporting, and eventual conclusions.

### **III.F Limitations**

My case selection strategy means that the study results are narrowly focused on planning areas that (1) participated in the Watershed Planning Act, (2) created and implemented a WMP and (3) continue to work on watershed management in at least a limited capacity. WRIs in other planning situations (such as those that stopped short of WMP adoption or those that did not participate at all) would certainly yield interesting information, but they are beyond the scope of this study. However, my narrow focus is intentional and important, since I am trying to specifically learn about issues of plan implementation and organizational longevity in long-term watershed management.

While my interviews were important sources of qualitative data, this sort of interview methodology can be vulnerable to the “halo effect” where respondents’ perceptions of accomplishments or environmental outcomes can be positively skewed by a favorable opinion of the process (Leach & Sabatier 2005; Koontz & Newig 2014). However, the consequences for my study are likely to be minor because most of the interview questions addressed perceptions of implementation and decision-making processes rather than perceptions of accomplishments or environmental outcomes.

In terms of the perspectives represented in my results, interviewees had been involved with their planning efforts for a range of time periods. Some had been more involved early on but had scaled back their recent direct involvement, others had arrived within the last few years, and still others had been involved throughout the duration of the effort. Nevertheless, all of the interviewees were highly knowledgeable “insiders” within the collaborative planning effort. I did not actively seek the perspectives of outsiders or non-participants, and this set of individuals could have offered different perspectives on my research questions. However, I deliberately

chose to focus on knowledgeable insiders because my research questions focused on (mostly internal) implementation issues and sustainability concerns.

## CHAPTER IV. CASE DESCRIPTIONS

As described in the *Methods* section, I selected the Nooksack, San Juan, Entiat, and Spokane River WRIsAs for in-depth study. The former three planning areas each consist of one designated WRIA, while the Spokane River watershed consists of four WRIsAs where implementation is being coordinated through a single joint group. Figure 2 displays geographic locations, and Table 5 summarizes a number of key characteristics for each planning area. Appendix G contains extended case descriptions.

As Table 5 shows, the case planning areas took an average of 5 ¾ years to complete Phases 1-3, beginning Phase 1 activities between 1998 and 2003 and formally adopting their WMPs (at the County legislature level) between 2004 and 2009. The planning areas' WMPs and DIPs include recommendations for a variety of policy changes, programs, studies, and on-the-ground projects; these recommendations are intended to address local issues relating to water quantity, quality, habitat, and instream flow. Actors in each planning area have carried out a variety of recommended projects and other actions. As of early 2017, implementation efforts in these watersheds are ongoing in some capacity. At minimum, each watershed's Planning Unit (or equivalent) is continuing to meet several times per year.

Figure 2: Map of designated Water Resource Inventory Areas (WRIAs) in Washington State, along with status under the Watershed Planning Act. Case planning areas for this study are highlighted in black.

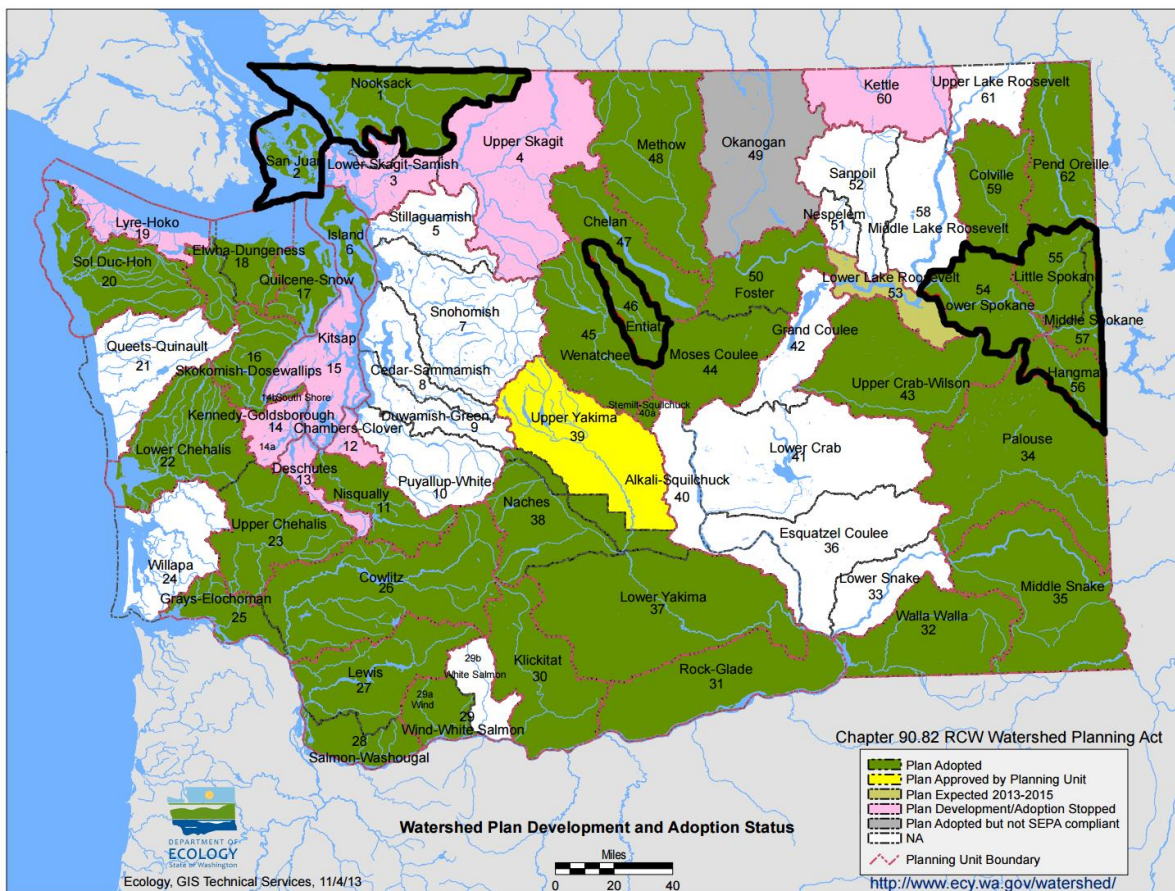


Image source: Washington State Department of Ecology. (November 2013). *Watershed Plan Development and Adoption Status*. Retrieved June 15, 2016 from <http://www.ecy.wa.gov/watershed/>.

Table 5: Characteristics of case planning areas

WRIA	Name	Location and geography details	Administrative units and boundaries	Population (2015 estimate)	Area (mi <sup>2</sup> )	Initiating Governments (Lead Agency in <i>italics</i> )	Optional planning elements	Planning Start Date (Approx.) <sup>1</sup>	WMP Approved by County(ies)	DIP Complete
1	Nooksack	NW corner of WA, spanning from Mt. Baker to the Georgia Strait. Physical watershed stretches into British Columbia. Flat, low-lying western area contains farmland & urban areas, eastern area consists of forested Cascade Mountain Foothills.	Primarily located in Whatcom County. Largest city is Bellingham; others include Ferndale, Lynden, & Blaine. Also Includes Nooksack and Lummi reservations.	212,284 <sup>2</sup>	1,410 <sup>3</sup>	City of Bellingham, Lummi Nation, Nooksack Tribe, Public Utility District #1 of Whatcom County, <i>Whatcom County</i>	Water quality, habitat, instream flow	October 1998	June 2005	July 2007
2	San Juan	Group of islands in NW WA. Located at south end of Georgia Strait, east of Vancouver Island (within rain shadow). Islands feature steep topography and 408 miles of coastline.	Largest islands are Orcas, San Juan, and Lopez. Located entirely within San Juan County. Largest municipality is Friday Harbor (San Juan Island)	16,252	177 <sup>4</sup>	<i>San Juan County Dept. of Health, City of Friday Harbor</i>	Water quality, habitat, instream flow	Late 2000	October 2004	January 2006
46	Entiat	North-central WA, within Upper Columbia Basin (Entiat R. empties into Columbia). Within eastern Cascade foothills.	Located entirely within Chelan County. Largest municipality is Entiat. 83% of watershed is multi-use USFS land.	1,154	478	Chelan County, City of Entiat, Entiat Irrigation District <i>*Cascadia Conservation District</i> is the Lead Agency. but not an Initiating Gov't	Water quality, habitat, instream flow	1998	May 2004	February 2006

54	Spokane-Lower	Eastern edge of WA within Columbia Basin. NW section of Spokane River region. Lower Spokane R. drains into the Columbia. Inland plateau, transition zone between desert and forested mountains.	Located within three counties (largest portion in Lincoln Co.), encompasses entire Spokane reservation. Includes Airway Heights and portions of Medical Lake and City of Spokane	89,426	883	City of Spokane, Ecology, Lincoln County, <i>Spokane County</i> , Spokane Tribe, Stevens County, Stevens County PUD #1	Water quality, instream	2003	October 2009	December 2010
55/57	Spokane-Little/Middle	Eastern edge of WA within Columbia Basin. East-central section of Spokane River region. Physical watersheds stretch into Idaho. Inland plateau, transition zone between desert and forested mountains.	Located within three counties (largest portion in Spokane Co.). Includes Deer Park, Liberty Lake, Spokane Valley, and portion of City of Spokane	275,000		City of Spokane, Pend Oreille County, <i>Spokane County</i> , Stevens County, Vera Water & Power, Whitworth Water District	Instream flow	June 1998	January 2006	February 2008
56	Spokane-Hangman	Eastern edge of WA within Columbia Basin. S section of Spokane River region. Physical watershed stretches into Idaho. Inland plateau, transition zone between desert and forested mountains.	Primarily located in Spokane County. Includes Cheney, Takoa, Rockford, and portions of Spokane (City)	46,403	689 <sup>3</sup>	City of Spokane, Hangman Hills Water District #15, Spokane County, <i>Spokane County Conservation District</i> , Whitman County	Water quality, instream flow, habitat	September 2000	September 2005	February 2008

## Table 5 Notes:

1. “Planning Start Date (Approx.)” refers to the beginning of Phase 1 work under the Watershed Planning Act; the San Juan and Entiat had already begun collaborative water resource planning under a different framework prior to these listed start dates.
2. Following Peterson et al. (2011), I use the total Whatcom County population as a proxy for the WRIA 1 population. The boundaries of WRIA 1 and Whatcom County do not align; however, over 90% of WRIA 1 occurs in Whatcom County, and the remaining portion in Skagit County is rural and sparsely populated. The portions of Whatcom County not in WRIA 1 are predominantly public land with limited human habitation.
3. Estimate does not include area outside of Washington.
4. Estimate includes total island land area (all islands) only

Each watershed contains a variety of interested entities, as well as a patchwork of landownership and land uses (including agriculture, urban development, forestry, and recreation). Structurally, planning in each watershed continues to involve a variety of government and non-government actors networking through at least one multi-party committee. The organizational structures of the larger watersheds (Nooksack and Spokane) are relatively more complicated than those of the Entiat and San Juan. The following four subsections briefly summarize the layout and key actors in each area's organizational structure. I conclude Part IV by briefly describing how Watershed Planning Act efforts at the watershed-scale can interact with other policies and resource management efforts.

#### **IV.A Entiat**

In the Entiat watershed, the Entiat Watershed Planning Unit features officials from a variety of agencies, landowners, and representatives from a small number of non-government groups. The Planning Unit holds quarterly meetings, with the Cascadia Conservation District continuing to coordinate and facilitate the group's gatherings. In addition to the full plenary Planning Unit, subsets of participants also form a habitat/technical subcommittee and a landowner subcommittee.

#### **IV.B San Juan**

San Juan County's Water Resources Management Committee (WRMC) is made up of state and local agency officials, citizens, and representatives from private water purveyors and an environmental group. Members also nominally represent one of the San Juans' three largest islands. The WRMC meets monthly, with the San Juan County Department of Health acting as the Lead Agency. At various times, the WRIA 2 effort has also formed temporary subcommittees

to address specific issues on specific islands. The WRMC is a county-level committee and closely interacts with the San Juan County Commission.

#### **IV.C Nooksack**

In the Nooksack area, the *WRIA 1 Project* consists of a Joint Board, a Planning Unit, and several staff-level teams (WRIA 1 Watershed Management Project 1999). The Joint Board is responsible for making high-level policy and budget decisions, while also facilitating a government-to-government relationship among the Initiating Governments. Executive officials from each Initiating Government form the Joint Board's membership. Agency officials from the Initiating Governments form a Management Team and a Staff Team; both teams contribute to program implementation and interagency coordination. Several other technical teams provided expertise to the Planning Unit during WMP development.

The WRIA 1 Planning Unit initially played a key role in the development of the WMP and DIP. The group includes members from a number of local government agencies (including but not limited to several of the Initiating Governments) and non-governmental interests. Many of the non-initiating Government members are representing "caucuses" made up of individuals or organizations with similar interests (such as agriculture, environment, or small cities) (WRIA 1 Watershed Management Project 1999). Regular Planning Unit meetings ceased in 2009, but the group was reconvened (with a number of new members) 2013 after a citizen request to Whatcom County.

Since 2009, the WRIA 1 Joint Board has been holding combined meetings with the WRIA 1 Salmon Recovery Board (Whatcom County 2017). These combined meetings are part of an ongoing effort to achieve greater levels of integration between the various natural resource management efforts operating the Nooksack watershed (Geneva Consulting 2009; Whatcom

County 2016). In late 2016, the WRIA 1 Joint Board and the Salmon Recovery Board formally merged into a single WRIA 1 Watershed Management Board (Whatcom County 2016).

#### **IV.D Spokane**

The Spokane River WRIAs initially formed three separate Planning Units and created three separate sets of WMPs and DIPs. Each of these initial Planning Units included representation from a number of agencies, non-government groups, and citizens (Sound Resolutions & Cascadia Consulting Group 2005; Tetra Tech et al. 2009). Many entities participated in multiple Planning Units, and Spokane County acted as the Lead Agency for WRIAs 54 and 55/57 (though these efforts began three years apart). Each respective Planning Unit reorganized itself into a *Watershed Implementation Team* (WIT) when it reached Phase 4. These WITs developed their WRIAs' DIPs and then continued to meet for Phase 4; despite the name change, the WITs' memberships and decision-making processes were fairly similar to the Planning Units they had replaced (WRIA 55/57 WIT et al. 2008; WRIA 56 WIT et al. 2008; Tetra Tech 2010).

Watershed management activities in all four Spokane WRIAs are now coordinated through a single *Joint Implementation Team*. This Joint Team's functions are similar to the functions of the individual WITs, but with a regional focus. An early version of the Joint Team emerged in 2010 when members of the WRIA 56 and 55/57 WIT began meeting together, and the current iteration of the Joint Team formed in 2014 when the WRIA 54 WIT joined the group. The Joint Team continues to meet on a regular basis with a core group of agency and non-government representatives.

#### **IV.E Overlap with other efforts**

In most cases, these planning efforts overlap (or at least coexist) with other natural resource management frameworks. For example, the Entiat falls within the work areas of the Upper

Columbia Salmon Recovery Board (UCSRB), the Yakama Nation's Fish Accord, and the Federal Columbia River Power System Biological Opinion (FCRPS BiOp). The boundaries of WRIA 1 also closely align with the Nooksack Salmon Recovery Board's work area, which has prompted the governance integration efforts described in the previous subsection. Plans, projects, and other implementation actions also interact with a range of federal, state, and local laws (such as the Clean Water Act or Endangered Species Act). As noted in the introduction, WMPs cannot be inconsistent with existing laws or policies, and the Planning Units themselves do not have the authority to change ordinances that are already in place.

Additionally, the Entiat and San Juan watersheds had undertaken collaborative natural resource planning prior to beginning work under the Watershed Planning Act. Starting in 1993, a group of landowners and agency officials began planning and data collection on a variety of resource topics under the Natural Resource Conservation Service's Coordinated Resource Management Plan (CRMP) model (CCCD 2004). This work culminated in the 1999 release of a *Draft Coordinated Resource Management Plan*, which contained a number of recommendations for riparian and channel restoration. The EWPU's draft *WRIA 46 Management Plan* (2002) served as a final version of the CREP Plan (CCCD 2004).

In the San Juan watershed, the WRMC created a *San Juan County Watershed Action Plan* (2000) prior to formally beginning activity under the Watershed Planning Act framework. This plan contained recommendations for habitat and water quality, some of which were implemented prior to the completion of the San Juan WMP in 2004. The WMP characterizes itself and the earlier Action Plan as "basically volume 1 and 2 of a management strategy for water resources in the County" (San Juan County WRMC 2004, p. vi).

## CHAPTER V. RESULTS

### V.A Research Question 1: Factors that Have Helped or Hindered the Implementation of Plan Recommendations or Other Projects

Interviewees indicated that implementation can be affected by a variety of factors both inside and outside the boundaries of the collaborative planning effort. Through my coding and analysis, I identified a set of *broader-scale context* factors that largely occurred beyond organizational boundaries. This category included geographic or hydrologic factors, characteristics of the wider political landscape, and outside events. I also identified two categories or “levels” of influential factors within the collaborative planning effort: The *programmatic or project level* and the *participant level*. I define the *programmatic or project level* as “factors related to the resources, policies, organizational structure or actions taken by the planning effort.” In turn, I define the *participant level* as factors “relating to participants’ (or other interested parties’) involvement, interests, behaviors, and interactions, applied to both individuals and organizations.” These three top-level categories emerged in connection to both “helpful” and “hindering” factors.

Interviewees also suggested a number of opportunities for improvement, and these suggestions provide additional insights into the important considerations for WMP implementation. The most prominent areas for improvement involved increasing citizen awareness or engagement, improving the structure or coordination of the planning effort, and addressing funding constraints.

I drew these results from responses to the following three interview questions:

1. What factors have been helpful during the process of implementing plan recommendations or related projects? For any factors you identify, could you provide an example of how each item affected actions or decisions? (Table 6)
2. Conversely, can think of any factors that have hindered this implementation work? As with the previous question, examples are very helpful. (Table 7)

3. Can you describe any opportunities for the Planning Unit to improve its practices related to plan recommendations or other projects? (Table 8)

Table 6: Factors that have been helpful during Plan implementation

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
<i>Broader-scale context</i>	33%	60%	0	0	20%
• Key motivators or focusing events	33%	40%	0	0	17%
• Regional water resource policy landscape	0	20%	0	0	4%
<i>Programmatic or project level</i>	83%	80%	33%	86%	70%
• Project or policy tool choice	50%	40%	0	57%	38%
• Funding	33%	40%	17%	14%	25%
• Planning or early organizational work	33%	0	33%	29%	25%
<i>Participant level</i>	50%	80%	100%	100%	83%
• Participant interactions	33%	60%	83%	29%	50%
• Who is involved	33%	20%	50%	71%	46%
• Support or commitment from participants or other entities	33%	0	33%	43%	29%

#### V.A.1 1: Broader-scale context

One-fifth of interviewees brought up a helpful aspect of the broader-scale context. As Table 6 shows, Nooksack and San Juan interviewees were the only respondents to reference this theme.

#### i: Presence of a key motivator or focusing event

The dominant characteristic was the presence of a key motivator or focusing event. I defined these items as “events or issues (related to the broader context) that provided an impetus for action or encouraged participants to work on project implementation.” The two Nooksack interviewees in this sub-theme identified the *threat of legal or regulatory action* as an impetus for making progress on WMP implementation. These two interviewees described concerns that

the WRIA 1 Project would experience increased regulatory or legal involvement from the federal government if certain local water rights and water supply issues were not resolved internally; this concern created a motivation for participants to take additional actions and find locally-based solutions.

Additionally, both Nooksack interviewees and two out of three San Juan respondents stated that participants' *recognition of an urgent or important water resource issue* had motivated implementation of management actions. All of these issues related to the hydrologic, political, and/or socioeconomic characteristics of the broader-scale context. However, none of these issues directly pertained to an impending regulatory legal threat from outside the planning effort. One San Juan interviewee described a desire to "take away the fear of the unknown" as a motivation to conduct data collection activities that would improve participants' understanding of local groundwater. A second San Juan interviewee described the desire to respond to pressing seawater intrusion problems, stating:

*"One of the factors that probably has been helpful is some sense of urgency to address some of the seawater intrusion issues. I think just knowing that there is a concern, that led to the County taking pretty quick action to implement some of those surveys and those studies."*

One other specific issue within this sub-theme was the reaction to a recent state Supreme Court decision (*Whatcom County v. Hirst, Futurewise, et al.*, also known simply as *Hirst*). The *Hirst* decision related to a lawsuit over Whatcom County's management of water resources under the state's Growth Management Act. The main consequence of *Hirst* is that counties are now required to make their own determinations about the physical and legal availability of water (in basins with instream flow rules) prior to authorizing permit exempt wells and issuing building permits for new developments (Ecology 2017). Prior to *Hirst*, counties could use Ecology's determinations about water availability as a basis for these authorizations (Ecology 2017).

When talking about helpful factors, an interviewee from the Nooksack described how the decision “could also be a help because it’s got everyone’s attention and now everyone’s focused on finding a solution.” Though only one interviewee referenced *Hirst* in response to this question, one third of all interviewees (Nooksack and Spokane only) made reference to *Hirst* at some point in their interview. Interviewees tended to describe *Hirst* as a major case with significant implications for water management. Spokane interviewees described how it was “a huge topic of discussion” and something that would “make watershed management more real.” Likewise, interviewees from the Nooksack described how *Hirst* “wraps itself around all this [watershed management] stuff” and was an opportunity to “reinvigorate” the WRIA 1 Project. These responses demonstrate that *Hirst* is a major element of the broader-scale context going forward, even though only one interviewee directly identified it as a helpful factor for implementation.

## **ii: Regional water resource policy landscape**

The third and final San Juan interviewee spoke positively of their regional water resource policy landscape. This interviewee specifically identified the Islands’ geography and flexible attitudes toward water resource policies, and also noted a particularly prominent link between environmental characteristics and implementation of data-related activities. With regard to the implementation of aquifer modelling, the interviewee described how:

*“One of the things that makes some of that study easier here is the uniqueness of San Juan County...we have these small, regional aquifers, we have a small annual cycle of recharge from precipitation but we are completely dependent on that...so the modelling of these things is simpler than in many other places.”*

### V.A.2 Programmatic or project level

Seventy percent of all interviewees identified helpful factors relating to: (1) project or policy tool choices, (2) funding, and (3) work that occurred at the earlier phases of the effort (pre-implementation).

#### **i: Project or policy tool choices**

First, almost forty percent of interviewees described how project or policy choices had positively affected subsequent implementation actions. At least two interviewees from the Nooksack, San Juan, and Entiat discussed this topic, though it did not come up in any Spokane interviews. The following project or policy tool types came up in multiple interviews across multiple case areas:

- Outreach or education actions (25% of all interviewees)
- Information-related (modelling, monitoring, or other data collection) (16% of all interviewees)

For outreach or education actions, two Entiat interviewees emphasized that community knowledge-building or outreach is the “biggest thing” for the planning effort’s success, describing the importance of keeping the community informed about what the planning effort is doing and why. A third Entiat interviewee spoke about the importance of sharing information with all stakeholders and getting their input in return. Two Nooksack interviewees and one San Juan respondent also spoke about the importance and prominence of educational efforts in their watersheds. One Nooksack interviewee stated that “we’ve always leaned heavily in this basin on educational efforts,” while the other described how “education has been important, I don’t have a better way of doing it.”

In terms of information-related activities, most responses focused on information regarding water quantity; all four interviewees spoke about groundwater or aquifers in some

capacity, with two also discussing an overall water budget. This subtheme was confined to the Nooksack and San Juan. Both Nooksack interviewees discussed the importance of their groundwater model. One San Juan interviewee praised the Islands' water budget modelling (with an emphasis on the aquifer component) while the other spoke about field data collection for aquifer levels.

Interviewees also mentioned three other one-off policy tool choices. One Entiat interviewee described the value of doing projects with benefits for the wider community, explaining that this approach increased the level of community support or buy-in for the overall planning effort. One Nooksack interviewee spoke to the importance of using voluntary policy tools (such as voluntary self-inspections for septic systems or incentives to reduce impervious surfaces on private property). A second Nooksack interviewee praised the WRIA 1 Project's experimentation with a variety of tools and strategies, stating:

*“We’ve done a bunch of different things...we’re poking around, saying ‘what tools can we use that make sense?’”*

## **ii: Funding**

A quarter of interviewees (including at least one person from every case area) described how sufficient funding was important for successful WMP implementation. While all of these interviewees spoke in general terms about the importance of funding, a few specifically noted the benefits of financial contributions from Joint Implementation Team members (Spokane), local agricultural Watershed Improvement Districts (WIDs) (Nooksack) and Ecology (San Juan). Interviewees described how collaborative watershed management relies on two important types of funding: “operational” funding to support the convening and facilitation of the Planning Unit, and “implementation” funding to actually pay for project or program work. Both types are important, and a deficiency of either funding category can create challenges for plan

implementation. A larger percentage (41%) would go on to identify funding shortages as an implementation hindrance. I provide a more extensive discussion of funding types and funding issues in the description of Table 7 results.

### **iii: Planning or early organizational work**

A quarter of interviewees traced implementation successes back to actions or decisions occurring during the earlier phases of the planning effort. This subtheme consisted of multiple interviewees from the Nooksack, Spokane, and Entiat, but no respondents from San Juan.

The majority of these interviewees commented on project identification protocols or the contents of the Plans themselves. In particular, two interviewees from Spokane and one from the Nooksack described how the planning effort's methods of prioritizing projects had made it easier to identify, agree on, and obtain funding for implementation actions; based on the responses, these protocols appear to have been put in place prior to Phase 4. One Spokane interviewee described how:

*“Most of the groups were really good at coming up with criteria for prioritizing their projects...we have different ways of going about it, but definitely developing criteria for prioritization was really good.”*

An interviewee from the Nooksack made a similar point, stating “coming up with priorities together was very positive, and trying to work on those priorities first, if possible.”

Similarly, an Entiat interviewee described how it was helpful to simply have projects laid out in the planning documents. This interviewee drew an explicit connection between obtaining funding and having projects listed in the planning documents, stating:

*“It’s always easier to get grant funds if you’re implementing a project that’s identified in some sort of planning document; it just gives it a higher level of justification, funding institutions have greater certainty that ‘yeah, this is the right thing to do in the right place.’”*

Two other early decisions (not related to project identification or Plan contents) were (1) deciding to integrate a variety of water issues into a single management framework and (2) conducting a preliminary training session for Planning Unit participants to prepare them for collaborative decision making. These decisions, despite being made very early in the process, conferred long-term benefits that continued to aid in implementation work. For the latter item, the Entiat interviewee in question connected this front-end training to subsequent improvements in participant interactions (discussed below), saying:

*“...that was a time when everybody sort of got on board with the idea of working towards each other’s interests...once you adopt that attitude, then it starts to work.”*

### *V.A.3 Participant Level*

83% of interviewees across all cases described helpful factors related to participants. All Entiat and Spokane interviewees discussed this theme, along with 80% of San Juan interviewees and half of Nooksack respondents. The three major topics within the Participant Level are: (1) interactions between participants, (2) which participants are involved, and (3) support or commitment from participants or other entities.

#### **i: Participant interactions**

The benefits of participant interactions came up in half of all interviews, with interviewees describing how positive interactions between Planning Unit members and other partners can improve the implementation of the WMPs. Interviewees stated that these cooperative relationships were helpful for agreeing on which actions to implement, appropriating needed resources, assigning tasks, and maintaining effective working relationships.

Close coordination with partner organizations (including those who might not directly sit on the Planning Unit) was the most commonly mentioned type of participant interaction. These

partner interactions came up in every case except the Entiat. Interviewees commented on a variety of implementation benefits resulting from this coordination, including better access to partners' funding and expertise, having an easier time getting projects approved, and easier communication among multiple entities. The latter point was especially helpful when working on complex projects with multiple sponsors or contributors (which was often the case).

Interviewees also identified other types of participant interaction involving interpersonal connections among Planning Unit members. Several interviewees (mostly from Spokane) discussed the value of listening to and respecting each other. One Spokane interviewee said that:

*"I think that respect for one and other and everybody's opinion was the biggest factor in being able to move forward and accomplish what we did."*

Another Spokane interviewee made a similar point, stating that:

*"I think people did a really good job of listening to other people with whom they would normally disagree. And I think that was key."*

Similarly, two Entiat interviewees described the value of participants being receptive to each other's goals, with one interviewee noting that "once you adopt this attitude, then it starts to work." One interviewee each from the Nooksack, San Juan, and Spokane also discussed long-term interconnections or relationships, describing the value of getting people from different interests into a room together and then building long-term relationships among those individuals. In particular, the Nooksack interviewee linked this to a "strong level of trust" that was developed between the members, while the Spokane interviewee spoke positively of the face-to-face interactions and institutional knowledge that was shared between members.

A small number of interviewees also described how Planning Unit rules governing participation or interaction have been beneficial. An Entiat interviewee spoke positively of the state agencies' protocol to be "represented by one voice" during Planning Unit meetings, while a San Juan interviewee described the benefits of having a defined structure so the Committee

didn't "come up out of thin air." Additionally, one Spokane interviewee said that it was helpful for Planning Unit participants to reach early agreement on these rules and process; this interviewee said early agreement was important because:

*"Then at least people know how they can participate and how decisions get made. Because if they don't have that...you can talk until you're blue in the face, but in the end you won't get anywhere if you can't get this basic stuff done upfront."*

## **ii: Who is involved**

Interviewees described the benefits of having participation from certain groups or individuals during implementation. 45% of total interviewees commented on this theme. Within this subgroup, 72% were from the Entiat and Spokane, and these individuals frequently made similar statements about the value of facilitation, leadership, and having the "right people" in the room. Interviewees suggested that the proper facilitator was important for keeping the Planning Units running smoothly, while agencies or individuals acting as leaders were important for bringing stakeholders into the effort and guiding the process.

More broadly, a handful of interviewees described how "having the right people in the room" had been essential for reaching agreement and carrying out subsequent actions. Said one Entiat interviewee:

*"Any time you're trying to undertake any sort of large-scale endeavor like a watershed plan...you've got to have the right group...bringing in everyone's strengths to the right place at the right time."*

Another Entiat interviewee described it as "serendipity," stating "having the right people representing the right parties in the right place, doing the right things." Additionally, a pair of Entiat interviewees described how ongoing involvement from landowners has created a sense of ownership over the process. In turn, this ownership has fostered higher levels of landowner support and commitment to the planning effort.

### iii: Support or commitment

The final participant level factor was support or commitment from participants or other entities. Almost thirty percent of all interviewees (representing the Nooksack, Spokane, and Entiat) described how support or commitment had been an important enabling factor for the actions achieved to date. The three Entiat interviewees in this category emphasized support from community members, especially local landowners. According to one Entiat interviewee: “if you get the landowners on board, it makes it a lot easier to get these projects going.” Interviewees from the Nooksack and Spokane tended to speak about “commitment” or “support” from a broad range of stakeholders, or from the watershed planning group as a whole. A Spokane interviewee spoke to this point, describing the importance of “a certain willingness or interest in doing watershed planning and implementation...first you have to get buy-in from all the major players, all the major stakeholders.”

Two interviewees from the Nooksack and one from Spokane linked this stakeholder commitment or support to the longevity of their groups. These three respondents suggested that high levels of commitment or enthusiasm for the process had motivated people to keep working even in the face of funding or political constraints. Several other interviewees (primarily from the Entiat) suggested that the planning effort could increase this level of commitment or support through communication and outreach (especially to non-government groups). Another commitment-building strategy centered on encouraging or recruiting stakeholders to participate in planning or decision-making processes.

Table 7 displays interview data for factors that have hindered plan implementation. I grouped responses into the same three top-level themes as helpful factors (broad-scale context, programmatic or project level, and participant level), with many similar subthemes.

Table 7: Factors that have hindered Plan implementation

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
<i>Broader-scale context</i>	67%	0	17%	14%	25%
• Political landscape	50%	0	17%	0	17%
• Water resource policy landscape	17%	0	0	14%	8%
• Court cases	17%	0	0	0	4%
<i>Programmatic or project-level</i>	67%	40%	83%	43%	58%
• Funding	67%	20%	83%	0	42%
• Information	17%	20%	0	42%	21%
• Implementation actions or strategies	17%	0	0	14%	8%
<i>Related to participants</i>	100%	80%	100%	86%	92%
• Characteristics, behaviors, or capacities of those involved	100%	60%	67%	86%	79%
• How participants interact	33%	20%	83%	57%	50%
• Who is (or is not) involved	33%	0	50%	71%	42%

#### V.A.4 Broader-scale context

A quarter of all interviewees (including four from the Nooksack and one each from the Entiat and Spokane) described how broader-scale context factors had been a hindrance to implementation.

#### i: Political constraints

Within the broader-scale context, the most common factor was political constraints occurring at either the local or state level. At the *state level*, interviewees referenced (1) controversy related to the state's water law and (2) state legislative decisions (resulting from statewide political dynamics relating to water resources) that had constrained Ecology's budget or authorities. Regarding the latter, an interviewee from the Nooksack remarked that:

*“Ecology has backed away, and maybe not on their own volition. Part of that I think was led by legislators that were very conservative and basically said ‘we’re not going to support the Department of Ecology.’”*

At the *local level*, two Nooksack interviewees described how disagreements over local political issues had interfered with or “waylaid” the WRIA 1 Project’s implementation efforts. One of these interviewees specifically referenced disagreements over land use under the County’s comprehensive planning process, suggesting that this issue had contributed to property-rights tensions that subsequently bled into watershed planning.

## **ii: Water resource policy landscape and court cases**

The broader-scale context also included two other sub-topics. First, two interviewees spoke about challenges related to the water resource policy setting. A Nooksack interviewee discussed challenges related to state water law, noting “you cannot solve your existing issues under existing state law.” An Entiat interviewee also highlighted the challenges of conducting local watershed planning while working within a larger-scale, regional water management effort. This interviewee suggested that working within a broader-scale management effort created challenges due to the presence of multiple planning documents, overlapping priorities or criteria, and numerous actors with distinct goals and project interests. In a related subtheme, a Nooksack interviewee suggested that the aforementioned *Hirst* decision was a hindrance rather than an impetus for action.

### *V.A.5 Programmatic or project level*

58% of all interviewees identified a hindrance at the programmatic or project level of the planning effort. The main subthemes in this section are similar to those in the corresponding “helpful programmatic or project level” discussion, and include: (1) lack of funding, (2) lack of information, and (3) implementation actions or strategies.

## **i: Lack of funding**

41% of total interviewees described how a lack of funding was a major barrier to WMP implementation. Over half of Nooksack and Spokane interviewees referenced this constraint, along with one San Juan respondent, but there no mentions from Entiat interviewees. Spokane interviewees spoke to constraints in both implementation and operational funding. Three noted that more funding for the planning effort would have led to more project implementation, with one wishing there was:

*“More money to do more implementation, because the groups were hot to trot and ready to just go full bore.” Another stated that “there were a tremendous amount of studies done, all of which is good, but now is the time to actually do something with it, and the funding has evaporated.”*

Several Spokane interviewees also highlighted the importance of operational funding to support the Joint Team’s logistics and convening. One interviewee who had worked in several watersheds offered a broader perspective on this operational funding issue, by describing how groups in some watersheds had “basically stopped doing any work” due to a lack of operations money.

The Nooksack interviewees tended to speak in more general terms; all four in this subcategory stated that a lack of funding was a hindrance, but they did not specify a deficiency with implementation or operational money. The sole San Juan interviewee to speak of funding constraints described that “the only difficulties were the economic ones, when Ecology wasn’t sure if they’d have the money they were committing to our work, and we weren’t sure if we could follow through with the contracts that we had.”

Several of the funding comments had a temporal component, with interviewees describing how money from state or local sources had declined in recent years, creating major constraints. The Watershed Planning Act provides a finite amount of implementation funding over a five

year period, in addition to the organizational, assessment, and planning grants that were available at earlier phases. Ecology is the agency responsible for administering these grants, and several interviewees (including two of those quoted in the previous paragraphs) specifically identified Ecology as one of the sources that had scaled back its financial support. These comments highlight the salience of strategies for long-term sustainability in the face of funding shortages (see Research Question #4).

Several interviewees also described how different organizations faced different kinds of funding situations. First, government entities and non-government organizations can pay for their staff to attend Planning Unit meetings. On the other hand, citizen participants have other jobs and typically participate on a purely volunteer basis, which can limit their ability to attend meetings and contribute to the planning effort. Second, resource disparities also exist with regard to project implementation: Larger jurisdictions in particular often have higher budgets to carry out projects, while smaller agencies may have a harder time allocating sufficient funds. Third, a few interviewees in Spokane also noted that non-government entities or citizen-driven projects may not be able to obtain certain types of grants (those that are only available to government agencies).

## **ii: Lack of information**

Elsewhere, 20% of all interviewees attributed implementation challenges to a lack of information. This subtheme came up at least once in all cases except the Spokane. Three out of five of these interviewees were from the Entiat but there was no consistency in their responses. This lack of information had several dimensions, the most common of which (three out of five interviewees) was a lack of sufficient guidance or current environmental information in the WMPs themselves. Each of the three interviewees spoke about different specific issues with

these documents. The other two interviewees described challenges regarding collection of up-to-date environmental information; one spoke about a lack of outcome data for restoration projects, the other described the time it takes to collect environmental information and how decisions sometimes have to be made with insufficient monitoring data in hand. In all of these cases, information or guidance deficiencies made it difficult for participants to properly implement projects that would have the appropriate environmental outcomes.

### **iii: Implementation of prior actions or strategies**

The final programmatic or project-level subtheme was the hindrance from implementation actions or strategies, though this was much smaller than its counterpart in the helpful responses. Within this sub-theme, one Entiat interviewee spoke of the challenges associated with implementing multiple monitoring programs over a short time span. One Nooksack interviewee discussed difficulties arising from an agency's failure to adequately enforce regulatory policies.

#### *V.A.6 Participant level*

91% of all interviewees (including all interviewees from the Nooksack and Entiat) described hindrances at the participant level. The subthemes in this section consist of: (1) characteristics, behaviors, or attitudes of participants, (2) participant interactions, (3) missing organizations or individuals, and (4) over-representation of certain groups.

### **i: Characteristics, behaviors, or capacities of participants**

The largest sub-theme was characteristics, behaviors, or capacities of participants, which included 79% of all interviewees (representing all four cases). In general, these characteristics or behaviors made it difficult to secure certain stakeholders' full participation or support for implementation actions (or for the planning effort overall). There were several subthemes here, with the most significant problem being certain groups' lack of commitment, lack of interest, or

general unwillingness to engage with the planning effort (38% of all interviewees). This type of mindset created barriers to implementation of individual projects and over-arching strategy, and also threatened the sustainability of the planning effort's activities. In the Entiat (and for one Nooksack respondent), this problem was landowner-focused, with some landowners either not wanting projects on their land or not caring about environmental issues. Nooksack and Spokane interviewees focused on two other dimensions of this problem: (1) agencies or organizations (and their leaders) not having the motivation or will to commit to action and (2) organizations or stakeholder groups not wanting watershed planning or resource management to happen at all. A Spokane interviewee captured this idea by stating "there were some groups and some people who did not want watershed planning to happen, but they engaged in it anyway so they could control it and make it fail."

Another major subtheme (33% of all interviewees) involved organizations' internal policies or procedures not meshing well with the Planning Unit's own processes (examples in all cases). An example from Spokane was an agency causing delays because its own review and decision-making process was slower than the decision process on Joint Implementation Team. Meanwhile, multiple Entiat interviewees highlighted how several agencies' land management and decision-making processes had caused frustration on the part of other participants. Again, these attitudes made it difficult for the planning effort to agree on and implement WMP recommendations or other actions.

Interviewees from the Entiat and Nooksack (constituting 21% of all interviewees) discussed how some individuals or groups were fearful or distrustful of government regulations or resource management. One interviewee brought up how certain groups were "very wary of any kind of government regulation on their property" while another described fears that watershed

management would “shut us down.” These fears made it difficult to secure support and buy-in for individual projects or the planning effort overall. 17% of interviewees made similar observations about certain groups who were not cooperatively engaging with the effort. One interviewee from each planning area also commented on challenges related to planning fatigue. All four interviewees had similar commentary: participants have been working on watershed planning for a long time, having spent enormous time and energy on the effort, and it can be challenging to keep people on board and invested in the work.

## **ii: Participant interactions**

50% of interviewees described how poor participant interactions (both within and beyond the Planning Unit) can be detrimental to implementation. This theme had two main sub-categories: dynamics or relationships among Planning Unit members, and communication failures to non-government stakeholders. In regards to the former, interviewees from the Nooksack, San Juan, and Spokane (including 50% of Spokane interviewees), described how poor relationships and low trust within the Planning Unit can create difficulties. Elements of poor relationships included difficulties reaching consensus or addressing long-standing areas of disagreement (Spokane), loss of trust between Planning Unit members and other government entities (Nooksack), and distrust of newer participants (San Juan).

The second main sub-category was hindrances due to poor communication to non-governmental stakeholders, with Spokane and Entiat interviewees discussing this issue. The Spokane interviewees spoke in general terms, describing how poor information dissemination to the public leads to low community awareness, participation, and commitment to watershed planning. Additionally, 57% of all Entiat interviewees discussed poor communication, which

resulted in (1) low community support for the effort and (2) strained relationships between agencies and landowners.

In the Entiat, this communication issue had two dimensions: communication from agencies to non-government Planning Unit members (regarding water-related administrative decisions) and from agencies to the broader landowner community (regarding project updates). Regarding the former, two Entiat interviewees noted challenges when agencies do not adequately communicate the how and why of their administrative decisions to the rest of the Planning Unit. This was especially salient in connection to fishery closures, with one interviewee stating that:

*“I guess the rub is not having participation with [Washington Department of Fish & Wildlife] at the table, and them not putting out to the public why there are closures and how long they are going to last.”*

Regarding the latter, one Entiat interviewee said that “with the logs going up the road [for installation for a restoration project] and no one knew what was going on, that’s a real hindrance...it created a real public relations problem, and that’s a bad thing.” Another interviewee made similar comments in regards to landowners not having sufficient advance notice about on-site monitoring activities.

### **iii: Who’s involved**

In addition to the characteristics, behaviors, and interactions of participants, 42% of interviewees attributed challenges to which parties were (or were not) involved with the planning effort. First, 21% all interviewees identified challenges related to turnover of participants or other stakeholders. Discussions of turnover primarily occurred in the Entiat, and were mostly related to the arrival of new residents (with less knowledge or commitment to the planning effort) paired with the attrition longer-term landowner participants.

Additionally, 21% of all interviewees described how missing organizations or individuals was itself a hindrance, due to resulting communication problems and lack of implementation capacities. A pair of Entiat interviewees mentioned low participation by agencies, connecting this low participation to the communication failures described in the previous paragraph. Two interviewees (one from the Nooksack and one from the Spokane) identified the absence of municipal governments, and one additional Spokane interviewee mentioned missing environmental groups. On the other hand, two interviewees from Spokane suggested that overrepresentation of certain groups had actually hindered planning and implementation, attributing this obstruction to those overrepresented groups' interests or behaviors.

Having established a wide range of helpful and hindering factors relating to implementation, Table 8 presents the main themes relating to opportunities for improvement.

Table 8: Opportunities for improvement

<b>Themes from interviews</b>	<b>Percentage of interviewees from each case planning area</b>				<b>TOTAL % ALL CASES n = 24</b>
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
Enhance citizen engagement or awareness	17%	20%	17%	71%	33%
Improvements to scope, coordination, or structure	100%	20%	17%	0	33%
Address funding issues	17%	20%	67%	0	25%
Improvements to projects or policies	17%	0	17%	29%	17%
Evaluation and feedback into future work	0	0	0	42%	13%
Unsure about improvement opportunities	0	20%	33%	0	13%

### V.A.7 *Enhance citizen engagement or awareness*

Interviewees identified several areas for improvement, many of which closely relate to the aforementioned helpful and hindering factors. One-third of interviewees (including 71% of those from the Entiat) described a need to enhance citizen engagement and/or awareness of the planning effort. For the Entiat in particular, interviewees described engagement or awareness-building as a way to foster citizen (specifically landowner) participation and support for the process. Interviewees saw this type of action as an important response to the influx of new landowners into the watershed. One Entiat interviewee noted that:

*“We’re sort of seeing a number of people coming into the Entiat who don’t have long-term knowledge or experience with the Planning Unit, so there is a need for continuous education and engagement...there needs to be a mindset of ‘we need to continuously make sure the community is engaged.’”*

Another mentioned that “it would be good if they [the EWPU] were more visible. I think a lot of people here don’t realize the importance of what they’ve done, it’s kind of an Entiat secret.”

Additionally, three non-Entiat interviewees (one each from other the other three cases) spoke in more general terms about the need for citizens and non-government Planning Unit participants to be more knowledgeable and involved in the planning effort. The Spokane interviewee noted that “I have a great team...but we need to coordinate with the rest of the community to ensure that we create solutions that will be widely acceptable.” The San Juan interviewee made a slightly different point, suggesting that the WRMC should provide more front-end information to new citizen Committee members to ensure that they are familiar with the setting and context.

*V.A.8 Improvements to scope, coordination, or structure; improvements to project or policy implementation*

Another prominent theme was the need to improve the planning effort's scope, structure, or coordination mechanisms. All Nooksack interviewees spoke to this theme, three of whom discussed the importance of better cooperation, coordination, or relationships between participants. One interviewee expressed a desire to:

*"...see the entire WRIA 1 watershed management process reconstituted. And get rid of the acrimony between the Joint Board and the Planning Unit, and have meaningful involvement from all parties."*

Another captured a parallel concern, explaining that:

*"The one thing we're trying to do is create a setup where you can go to one place and figure out what everybody is doing, because nobody in the County...can you go to them and say 'OK, for all the entities that are working on the watershed, what projects have they done and what are they doing now?'"*

Despite these concerns, three interviewees identified the Joint Board merger and the success of an interagency "Water Supply Working Group" as steps in the right direction and opportunities for further improvement.

Several Nooksack interviewees also expressed interest in seeing improvements to the use of the Plans, or to the identification of projects more generally. One indicated that:

*"There's just got to be continued improvement where the Detailed Implementation Plan dovetails with other federal or state government mandates, then there's going to be progress on things."*

However, several other interviewees suggested that the new members of the reconstituted Planning Unit had been steadily improving in their understanding of the Plans and local watershed management context, to the point that new work plans and increased "momentum" for the effort are forthcoming.

Similarly, 16% of all interviewees (including two from the Entiat and one each from Spokane and Nooksack) discussed the opportunity to improve the implementation of existing projects or broader-scale management policies. Within this theme, the two Entiat interviewees described ways to improve specific projects that had been recommended in the Plans but never satisfactorily implemented. On the other hand, the Spokane and Nooksack interviewees focused on higher-level resource management, with the Spokane interviewee stating that:

*“Spokane County and I believe other counties in the state are going to be pressed to develop additional water resource management policies to incorporate into their Comprehensive Plans. And that one-size fits all approach to water resource management, I just don’t think that’s going to work anymore.”*

#### *V.A.9 III: Funding*

A quarter of interviewees discussed funding constraints. Several responses echoed previous comments about diminished funding (especially from state government sources) and the challenges of finding new sources for operational and implementation support. This theme was particularly prominent in the Spokane, and completely absent from the Entiat. One Spokane interviewee noted that “if somebody can figure out how to fund this stuff, that’s the \$64,000 question” and the single Nooksack interviewee in this category stated that “there needs to be some funding mechanism...something that’s really come through is that we would need broad political support to get some sort of levy passed to be able to fund the water work that needs to be done to solve this.” Concrete ideas for new funding mechanisms included direct contributions from Planning Unit members and creating a new levy or taxing district.

#### *V.A.10 IV: Evaluating the WMP*

A final theme (specific to the Entiat) was an interest in revisiting or re-evaluating the WMP and then using those evaluation results to inform subsequent actions. I isolated four evaluation

topics from interviewees' responses about this process: (1) what goals/recommendations from the WMP have been completed? (2) What were the outcomes of this work? (3) What should the planning effort do next? and (4) Should the planning effort change any of the information or recommendations in the WMP? One interviewee characterized this process as a "gut check," while another interviewee described it as:

*"Getting the management plan back out again, taking a look at actions that have been done and things that were identified in the Plan but have not been done yet, and seeing if those actions are still viable."*

## **V.B Research Question 2: Use of the WMPs and Other Factors Influencing Decisions**

The majority of interviewees across all case indicated that the WMPs and DIPs were primarily fulfilling a *guidance or reference role*, though there quite a bit of nuance within this broad category. On the other hand, a third of interviewees indicated that the Plans had seen *low or declining use*, though there appeared to be some interest in increasing the relevance of these documents. Finally, a small number of interviewees described how *funding intersected with Plan use*.

In addition to the use of the Plans, I also heard about several other drivers of implementation decision-making, including *funding availability*, the *influence of participants*, and *joint priority-setting*. Results for this research question are based on two interview questions:

1. How has the Planning Unit used the Watershed Management Plan and the Detailed Implementation Plan in the time since those documents were created? (Table 9)
2. How has the Planning Unit decided which actions or strategies to implement? (Table 10)

Table 9: How participants and the Planning Unit have used the Plans

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
Guidance for projects or strategy	33%	80%	67%	100%	71%
<ul style="list-style-type: none"> <li>• Selection or identification of projects</li> </ul>	17%	60%	50%	42%	42%
<ul style="list-style-type: none"> <li>• Strategic guidance or priority-setting</li> </ul>	33%	20%	33%	42%	33%
<ul style="list-style-type: none"> <li>• Guidance for a specific activity</li> </ul>	17%	20%	0	29%	17%
<ul style="list-style-type: none"> <li>• Creating funding requests</li> </ul>	0	0	17%	0	4%
Low or declining use/importance	67%	20%	17%	29%	33%
Relationship between funding and Plan use	17%	0	67%	0	21%
Describes current interests or efforts to increase use	50%	0	17%	0	17%
Justifying projects to funders	17%	0	33%	0	13%

### *V.B.1 Plan use-Guidance for projects or strategy*

Across all cases, seventy percent of interviewees stated that the planning documents had served as references or guidance materials during the implementation stage. These reference functions applied to three levels of implementation decision-making: strategic guidance or priority-setting, selection or identification of projects, and guidance to help carry out a specific activity. Multiple interviewees from all cases identified this theme, ranging from one hundred percent of Entiat interviewees to one-third of those from the Nooksack.

Selection or identification of projects was the most prominent guidance-related use (41% of all interviewees, with representation from every case). Respondents in this subtheme described how their plans contained lists of goals and agreed-upon implementation actions for different topics or geographic areas. In turn, these stated recommendations had informed the planning effort's choice of implementation actions. When funding became available or when it was

otherwise appropriate to make a decision on implementation, interviewees talked about referring to these listed items. They also described using the WMP as a “guideline” or “basis” when identifying or selecting projects. An Entiat interviewee described “pursuing the actions stated” in the WMP and DIP, and a Spokane interviewee talked about how their group “immediately went to this document [the WMP] and found all those areas that would tie back” to a funding opportunity.

A third of all interviewees (with representation from every case) connected their Plans to higher level strategizing, direction setting, or identification of priority areas. Statements in this sub-category likened the Plans to “roadmaps,” “foundational documents,” or “macro-level” references that helped lay out an overall approach to watershed management. One Spokane interviewee repeatedly referred to their WMP as their “bible,” while an Entiat interviewee explained how the WMP provided “general priorities” and “an overall framework for the general types of projects you would do” in different parts of the watershed. In particular, several Entiat interviewees in this sub-category described how their WMPs had helped clarify high-priority management topics or geographic areas that needed attention in their overarching strategy.

Guidance at the individual project scale was the least-common application within this broad theme, though it included at least one interviewee from the Nooksack, San Juan, and Entiat watersheds. When asked about plan usage, these interviewees described how the documents had guided the execution of a project or policy. In other words, this type of guidance applied directly to the implementation of an action, rather than decisions about strategy or project selection. One Entiat interviewee stated that the WMP and DIP had helped guide the implementation of irrigation efficiency improvements, while a Nooksack interviewee described how the WRIA 1 WMP and DIP had informed the developed a subsequent “Lower Nooksack Strategy” document.

### V.B.2 Plan Use: low or declining

One-third of interviewees, representing all four cases, either discussed how participants had made limited use of the planning documents or stated that usage had been declining in recent years. Some of the interviewees in this group stated that the plans had been used for project or strategy guidance (see above), but characterized the level of usage as “limited” or “decreasing.”

Reasons for low use included lack of funding and the greater prominence of individual participants’ own priorities. In terms of the former, interviewees stated that funding availability determines which projects in the Plans get done, and that it is hard to implement recommended actions when there is no money to do so. In terms of the latter, interviewees suggested that participants were more interested in accomplishing their own objectives or priorities regardless of what was in the plans. Each type of statement came up in the Nooksack and Spokane cases, with one interviewee speaking to both points by saying:

*“My perception is that it [the WMP] isn’t necessarily followed...organizations do the projects they would like to do, or the projects where there is funding available. So they are helpful documents, but they’re not always referenced.”*

A handful of interviewees (primarily from the Nooksack) also spoke in more general terms, stating that the Plans had been “parked” on a shelf or otherwise used rarely.

“Declining usage” was exclusive to the Entiat, and it was attributed to the age of the WMP and increasing reliance on other complementary planning frameworks such as the Intensively Monitored Watershed (IMW) project. As its name suggests, the IMW effort “establish[es] a schedule of habitat restoration, project location, and timing, coordinated with intensive monitoring efforts” (CCD n.d.), with annual field monitoring activities to track the impacts of the habitat restoration projects (Desgroseillier et al. 2010; Potter et al. 2014). The IMW primarily relates to salmon habitat restoration; the framework features the involvement of several state and

local agencies, along with landowners hosting projects and monitoring efforts on their property. One Entiat interviewee stated that the DIP in particular “kind of fell to the wayside” when the IMW project began, and that the “foundation [in the WMP and DIP] is still there but I don’t think we’ve been relying on it very heavily.”

Four interviewees (three from the Nooksack and one from Spokane) went on to describe current efforts to increase the use of their Plans. These efforts originated with participants’ beliefs that the Plans needed to be more extensively implemented and/or more carefully followed. One Nooksack interviewee stated that:

*“We have gotten fairly broad agreement amongst Joint Members...agreement that implementing the 2005 Watershed Management Plan is needed.”*

Meanwhile, the one Spokane interviewee in this subcategory described how:

*“There was a lull in referring back to those [plans] for a couple of years. And so that’s why we as a group decided that one of the priorities was to tighten those Plans up.”*

Interestingly, while 42% of Entiat interviewees suggested “evaluate the WMP” as an improvement measure, none of these individuals described any current efforts to increase use of their Plan.

### *V.B.3 Funding and Plan use*

The *justifying projects to funders* and *relationship between funding and Plan use* themes show a variety of ways in which funding can intersect with WMP and DIP use. A total of seven unique interviewees across all cases (30%) addressed these topics; five of these interviewees were from Spokane and constituted 83% of the Spokane interviewee pool.

As described in the previous section, four interviewees noted that it is difficult to operationalize Plan recommendations if there is insufficient money to carry out the identified projects. A pair of Spokane interviewees further illustrated how funding availability intersected

with Plans, noting how certain grants could only be used for certain types of projects. One interviewee described how “if we knew of funding that came up, the first place we went to was ‘OK, this is the funding can be used for, these types of projects,’ then we immediately went to this document [the WMP] and found all those areas that would tie back to what the grant money said it could be used for.” This occurrence is an example of how the conditions attached to funding can guide how the Plans are used.

These examples show how finances impact plan use, but the interviews also revealed how the WMPs can also be used to influence project funding. Three interviewees from Spokane and Nooksack described how they had used their WMPs to justify a project proposal to a funding entity. In these cases, participants were able to point to a recommended action in their WMP as evidence that a proposal met an important resource need and had support from stakeholders. As an example, one interviewee described how:

*“They [the WMP and DIP] helped make the argument for some of these processes to be implemented. They were often used as a sort of background for indicating that the community was supportive of these processes and grant applications.”*

In addition to asking about usage of the Plans, I also asked interviewees to describe how implementation decisions had been made. This line of questioning led me to identify a number of factors that have affected implementation decision-making (Table 10).

Table 10: How implementation decisions are made

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
Funding availability as a key driver	67%	0	67%	57%	50%
Influence or roles of participants	33%	60%	33%	43%	42%
Jointly setting priorities or identifying projects	17%	80%	50%	0	33%
Use of Plans	33%	20%	67%	14%	33%
Relevancy, urgency, or potential impacts of projects	0	40%	33%	14%	21%
Challenge of using, or low use of, Plans	0	20%	0	14%	8%
Consider existing laws, conditions, or context	0	0	0	14%	4%
Decisions driven by data-related goals	0	20%	0	0	4%
Drawing on data or assessment results	0	20%	0	0	4%

One third of interviewees across all cases highlighted the importance of their WMPs. However, this was not the largest response category, and it is instructive to consider the other factors that influenced implementation decision-making.

Notably, half of all interviewees described how funding was a key driver of implementation decisions. Several of these interviewees mentioned project selection was “opportunistic” or heavily influenced by the types of grants that were available. As an Entiat respondent explained: “What determines what gets implemented? I would define it as things that attract funding get carried out.” A Spokane interviewee made a similar observation, saying “if you want funding, you have to do this type of project.” More generally, interviewees noted that funding constraints were a limiting factor to the planning effort’s on-the-ground work: “it’s all a matter of how much

money is available.” The former point closely relates to the intersection between funding and Plan (use as described in the previous subsection), while the latter point reaffirms that constrained funding is a key factor that hinders implementation.

In the second-largest subtheme, 41% of interviewees also talked about how individual participants can influence implementation decisions. Within this topic, interviewees highlighted the influential roles of the Lead Agency, County legislatures, other agency or technical staff, and landowners (with most respondents discussing the roles of government entities). Regarding the Lead Agency, a San Juan interviewee said that the decision-making process is “led and informed pretty heavily by the staff member from San Juan County,” while a Spokane interviewee observed that “I’d say 80/20 it was the Lead Agency or the supporting agencies taking the lead.” Two San Juan interviewees also talked about the San Juan County Commission’s role in shaping the WRMC’s work. Echoing the responses in the “Low Plan Use” subtheme, a pair of interviewees brought up how participants’ own goals and priorities can drive implementation decision-making, with a Nooksack interviewee stating that “they [the Initiating Governments] just picked what was important to them.”

One third of interviewees described how participants have been working together to jointly identify projects or priority issues, with the resulting decisions having a large influence on the effort’s activities. Interviewees appeared to be referring to interactions that have occurred on a regular basis in the time since the WMP and DIP were completed, involving input from a number of stakeholders. Spokane interviewees described “still working as a team” and holding discussions to prioritize projects for the “annual implementation dollars.” San Juan interviewees likewise described ongoing dialogues between WRMC Committee members and annual consultations with the San Juan County Council regarding work plans and progress to date.

One fifth of interviewees also described how project relevance was an important determinant when making decisions, with several (again) drawing links to funding. These interviewees explained how project selection was responsive to water resource conditions, or that projects related to high-priority areas were more likely to get carried out. One interviewee described it as “it’s sort of like what we call the low-hanging fruit: things that have enough importance in salmon survival that there is money available for them.” Another noted how:

*“The reality is that things happen when they become relevant...there’s a lot of good ideas out there but not all of them are funded and are necessary. So yeah, lots of times it’s just when situations become critical, then they become addressed.”*

### V.C Research Question 3: Contributions of the Planning Unit or Implementation Team

For my exploration of Planning Unit contributions to implementation, I asked interviewees to discuss three topics:

1. How has the Planning Unit contributed to the implementation process? (Table 11)
2. In addition to creating the WMP and DIP as outputs, did Phases 1 through 3 lead to any other beneficial effects or outcomes that have contributed to implementation? (Table 12)

Table 11: Planning Unit contributions to implementation

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
Decision-making	50%	20%	83%	71%	58%
<ul style="list-style-type: none"> <li>• Giving input on projects or strategy</li> </ul>	33%	20%	17%	43%	29%
<ul style="list-style-type: none"> <li>• Endorsing or approving projects</li> </ul>	0	0	50%	43%	25%
<ul style="list-style-type: none"> <li>• Project or strategy ID or selection</li> </ul>	17%	20%	33%	14%	21%
<ul style="list-style-type: none"> <li>• Adaptation and refinement of planning approach</li> </ul>	0	0	17%	0	4%
Directly carrying out or supporting actions	67%	60%	83%	0	50%

• Attributed to individual members	17%	60%	50%	0	29%
• Attributed to the Unit or Team as whole	50%	0	50%	0	25%
Continued collaboration, communication, or convening	50%	60%	0	14%	29%
Limited or no contributions	83%	0	0	0	21%

As described in Part II, the Watershed Planning Act specifies a four-phase process for participating planning efforts: organization, assessment, planning, and implementation. For this research question, I asked interviewees to discuss their Planning Unit's role or contribution specifically during the implementation phase. Interviewees identified three major ways in which the Planning Units contributed to implementation: *Decision-making, providing a space for continuing collaboration or communication, and directly carrying out or supporting project work.*

#### *V.C.1 Implementation decision-making*

Fifty-eight percent of interviewees across all four cases described how their Planning Unit had provided a venue for decision-making in regards to implementation. This includes at least fifty percent of interviewees from the Nooksack, Spokane, and Entiat watersheds. My analysis of these responses revealed three major subcategories of decision-making: giving input on projects or strategy, endorsing or approving projects, and project or strategy identification/selection. The former two subcategories involve Planning Unit members reacting to projects proposed by individual participants or other partners. On the other hand, the latter subcategory involves the Planning Unit as the original source of project identification or selection ideas. These subcategories are distinguished by subtle differences in interviewees' word choice; though the differences are small, I judged that it was important to capture these variations. All three subcategories appeared with similar frequency in the interview data.

Thirty percent of responses across all cases characterized this role as giving input on proposed projects or strategies; interviewees described this as “feedback” or “review” to inform decisions, with one Entiat interviewee calling their Planning Unit a “check in” and “litmus test.” Meanwhile, a Spokane interviewee described how this input was helpful to organizations that were carrying out projects, noting that:

*“The Joint Implementation Team...has helped us focus some of our efforts...we’re kind of a driver in the system, but they [the JIT] do help steer us from time to time.”*

Similarly, a quarter of interviewees (consisting of multiple respondents from the Spokane and Entiat) described how Planning Unit participants were giving their endorsement or approval of implementation actions. On this point, several Entiat interviewees described how projects were “vetted through” or “had the approval” of the Planning Unit. Interviewees from Spokane talked about this slightly differently, giving examples of organizations asking the JIT for a “letter of support” or asking if the Team was “OK with” certain projects being carried out. The key difference between “endorsing or approving” and “giving input” is that the former involves Planning Unit members vetting, approving, or expressing their support for a proposal, while the latter involves the Planning Unit reviewing a proposal and giving its feedback without an explicit “approval” function.

On the other hand, twenty percent of interviewees across all cases described how the Planning Unit was identifying or selecting projects for implementation. In these cases, the Planning Units were selecting actions based on information in assessments, planning documents, or internal conversations. One Entiat interviewee described this process as:

*“...well the Planning Unit, once it set up guidelines for what to get done...again it goes to the Tech Committee and the working groups to figure out what’s a good project for this particular stretch...and they’ll list ‘this is the plan, for these reasons.’”*

Meanwhile, a Nooksack respondent described how “we’ve [the Planning Unit] prioritized some of the pilot projects that we started and pushed for more monitoring of the stream.” A San Juan interviewee made a similar point, suggesting that:

*“I would not be surprised if, going forward, the Committee members themselves bring a lot of the proposals together and then we sit down and have a conversation.”*

#### *V.C.2 Directly carrying out or supporting actions*

One half of interviewees also stated the Planning Unit and/or its participants had contributed by helping to carry out a program, project, or other action. Half of the interviewees in the category (one quarter of all interviewees) attributed this work to the Planning Unit as a whole, while slightly more attributed these actions to individual participants (one Spokane interviewee made statements in both categories). This was an interesting result, and at least some of the variation in responses could be related to interviewees interpreting the question differently.

Within the subtheme “attributed to individual members,” interviewees from the Nooksack and Spokane watersheds gave examples of projects that participating organizations had carried out, including outreach efforts and data management. Two interviewees took this a step further, strongly emphasizing that implementation (generally) is done by members rather than the Planning Unit as a single entity.

In the San Juan, interviewees in this subcategory described how many WRMC members had contributed their time and efforts to carrying out projects, with interviewees stating that members have “literally been the ones who’ve gone out and done stream gauging or water levels” or have been “directly involved in everything we’ve done.” Another San Juan respondent stated that “there are multiple Committee members who are really willing to give significant parts of their time” to the WRMC’s implementation activities. Meanwhile, when attributing this work to the

Planning Unit as a whole, interviewees in all cases discussed how the Unit had carried out communication or data management tasks, or had served a role by advocating for projects.

#### *V.C.3 Continued collaboration or convening*

Twenty percent of all interviewees (including at least half of those from the Nooksack and San Juan, and one from the Entiat) linked the Planning Unit's contributions to ongoing collaboration and communication between participants, or simply continuing to convene participants. One San Juan interviewee also complemented the WRMC's contributions to the institutional memory of the management effort. This set of functions appears to be a continuation of the convening, coordinating, and information-sharing roles that occurred in Phases 1-3. Responses in this category highlighted the importance of the Planning Unit's continued function as a place to bring participants to together and facilitate various interactions.

#### *V.C.4 Limited contributions or no contributions*

83% of interviewees from the Nooksack stated that the Planning Unit had minimally contributed to implementation work, or had not contributed at all. Most of these interviewees stated that implementation was not the Planning Unit's responsibility, or that a dispute over the Planning Unit's responsibilities had led to implementation delays. This finding is related to the WRIA 1 Project's complex organizational structure (featuring a Joint Board and a Planning Unit), with the Planning Unit primarily made up of non-government representatives or officials from smaller government agencies. Interviewees tended to attribute more implementation responsibility to the government agencies on the Joint Board (though a few suggested that the Joint Board had not contributed to implementation either).

In the second subtopic within “Planning Unit contributions,” I wanted to explore whether the activities during Phase 1 through Phase 3 had resulted in any outcomes or long-term effects, other than the creation of the WMP as an output of that process. To that end, I asked interviewees if they could think of any long-term effects associated with the collaborative development of their WMP, beyond the WMP itself. In their responses, interviewees identified three major results: *interactions between participants*, *supporting implementation actions*, and *fostering commitment or buy-in*.

Table 12: Additional effects of collaborative plan development

Themes from interviews	Percentage of interviewees from each case planning area				TOTAL % ALL CASES n = 24
	Nooksack n = 6	San Juan n = 5	Spokane n = 6	Entiat n = 7	
Interactions between participants	67%	20%	50%	43%	46%
<ul style="list-style-type: none"> <li>Bringing groups together &amp; fostering cooperation or trust</li> </ul>	67%	20%	0	14%	25%
<ul style="list-style-type: none"> <li>Learning from or about others</li> </ul>	17%	0	17%	29%	17%
<ul style="list-style-type: none"> <li>Helping to reach consensus on what to implement</li> </ul>	0	0	33%	0	8%
Supporting implementation actions	17%	60%	67%	14%	38%
<ul style="list-style-type: none"> <li>Helping participants focus on issues, or ID projects</li> </ul>	0	60%	33%	0	21%
<ul style="list-style-type: none"> <li>Justifying or informing grant requests</li> </ul>	0	0	50%	0	13%
<ul style="list-style-type: none"> <li>Pulling together science or technical data</li> </ul>	17%	0	0	14%	8%
Process fosters commitment or buy in	17%	0	0	43%	17%
Adaptive management approach	0	0	0	14%	4%

### V.C.5 Interactions between participants

The largest theme in the interview data related to ongoing interactions between participants, with three closely related subthemes and representation from every case. Within this theme, a quarter of all interviewees credited the plan development process with bringing participants together and fostering ongoing cooperation. This included two-thirds of Nooksack interviewees, with the overall message from those individuals being fairly consistent; one interviewee stated that the process had “built a sense of collaboration and inclusiveness,” a second said that it had “brought together a cooperative for water management,” and a third noted that it the process had fostered the “development of some level of trust and understanding.” An Entiat interviewee also stated that the process “got everyone working off a common base, while a San Juan interviewee noted that:

*“The process goes over time, so it enables some more depth to be developed among this group, versus ‘oh, let’s bring this group together for a one-time meeting’ ...instead, it’s a different environment that takes time to develop. That’s the benefit of having a process, there’s a structure there.”*

A smaller number of interviewees described how their Phase 1-3 activities had helped them learn about other stakeholders or about watershed planning as a whole. This subtheme was very similar to the concept in the previous paragraph, but with an explicit emphasis on sharing and learning from each other. An Entiat interviewee described this as:

*“One of the real benefits of it is people putting hours into it and going through the whole interaction of what’s important to different people...wrestling over these issues together and sharing history.”*

A Nooksack interviewee made a similar statement, saying that:

*“We all learned about each other’s needs...a lot of that is simply building understanding about each other’s needs and desires.”*

Two Spokane interviewees mentioned a third and final subtheme, noting that the process of collaborative plan development had built consensus on the path forward. One noted that “the consensus I guess, that’d be the biggest thing, helping us implement our decisions.”

#### *V.C.6 Supporting implementation decision-making*

Slightly less than forty percent of all interviewees suggested ways that the plan development process had supported subsequent implementation decision-making. The WMP itself set forth recommendations, strategies, and priority work areas to guide implementation, but interviewees suggested three other linkages between Phases 1-3 and project selection (or related decisions). First, half of the Spokane interviewees described how the collaborative planning process was useful for justifying projects to funders, because it allowed them to show that their proposed projects had been collectively developed by a representative group of stakeholders. One interviewee captured this idea by stating:

*“For any funding opportunity, it’s so helpful to be able to reference this Plan that’s been developed through huge collaboration.”*

Similarly, a pair of interviewees described the long-term utility of bringing together science or technical data as part of the planning process. This subtheme echoed the importance of having current and accurate monitoring data to support implementation (Research Question 1). One interviewee noted how the process “gathered a fair amount of technical data to base those decisions on,” while the other noted that “it was very useful to have everything [data] in one place.”

The largest subtheme in this category is very similar to the *Guidance or Reference* theme in the responses to Research Question 2. One fifth of interviewees explained how the planning process had helped participants focus on important issues or select projects for implementation.

A Spokane interviewee described how the planning process had helped members “focus their interests in this group environment to try and accomplish projects that met with the Plan guidelines,” while a San Juan interviewee described how the planning process had “informed the viewpoints of Committee members.” Several responses also veered into a discussion of the benefits of the Plan itself as a “structure or tool,” suggesting that this outcome is difficult to separate from the role of the WMPs themselves.

#### *V.C.7 Process fosters commitment or buy-in*

Finally, forty percent of Entiat interviewees, along with one Nooksack respondent, stated that the planning process had helped develop a sense of commitment or buy-in among the participants. One Entiat interviewee described how “kind of coming together and doing the work creates a buy-in from the community that they’ve pretty much been able to keep intact.” Two other Entiat respondents spoke to the idea of ownership or “skin in the game,” noting that community involvement in planning led to people being “more willing to say, decommission one irrigation ditch and combine it with another.” The one non-Entiat interviewee made a similar point, stating “if people feel like they’re meaningfully participating, then you’re likely going to get meaningful participation.” This subtheme relates to the importance of commitment or buy-in as a factor enabling implementation (Research Question 1), and suggests a strategy for building stakeholder support or buy-in for watershed management actions.

#### **V.D Research Question 4: Strategies for Managing the Reduction in State Funding, or Otherwise Improving Sustainability**

I identified and classified coping strategies for managing the reduction in funding based on Koontz and Sen’s (2013) *ex-ante/ex-post* framework. These findings were generated by an

analysis of my interview questions on *opportunities for improvement* and *expectations for the future of watershed planning* in each case area.

These questions revealed a variety of ex-ante and ex-post coping strategies across the four case WRIAs. Following Koontz & Sen (2013), *ex-ante* strategies are activities or structural features that were put in place before a source of government funding was exhausted. *Ex-post* strategies are responses to the funding loss (again, including activities or structural features) that participants implemented after financial support had ceased. Ex-ante strategies included increasing involvement from key participant groups and reviewing or revising the planning documents. Ex-post strategies included creating a new revenue source through a taxing district and increasing reliance on government participants to contribute operational funds. A strategy of consolidating planning efforts and pooling resources emerged across two cases; this strategy can represent an ex-ante or ex-post approach depending on the timing of the consolidation.

The following subsection describes each planning effort's strategies. These strategies vary in regards to the extent of implementation: some have been fully executed, some are in preliminary stages, and some are currently under consideration.

#### *V.D.1 Entiat*

In the Entiat, funding for Planning operations or project implementation does not appear to be a major problem right now. None of the interviewees brought up funding constraints as a hindrance or identified funding as an area of improvement. Unlike the other case watersheds, the reduction in implementation funds under the Watershed Planning Act does not appear to be a salient issue. There is at least one large agency-sponsored habitat project in the works; more generally, there appears to be multiple organizations that are either interested in directly doing projects (Yakama Nation, UCSRB) or interested in providing funding to support the Planning

Units efforts (Bonneville Environmental Foundation). This institutional thickness has meant that the Entiat planning effort has moved beyond the constraints of the state's watershed planning program. This networking with other organizations is itself an ex-ante strategy.

Increasing outreach and education is another ex-ante coping strategy on display in the Entiat. Specifically, these outreach and education efforts are aimed at landowners, with the specific goal of bringing more recently-arrived residents into the Planning Unit and increasing overall community awareness of watershed management. It appears that this strategy is in an initial planning stage, or is at least on some participants' radar.

This strategy is a response to the aging out of older residents, the influx of new residents (and the low awareness, interest, or willingness of these new arrivals), and the recognition that the planning effort's work requires buy-in from those landowners. By bringing more landowners on board, interviewees hope to avoid a loss of effectiveness and sustainability due to low landowner engagement. Interviewees discussed this effort in their statements on hindrances and improvements. Two of the interviewees discussing an analysis or evaluation of the WMP appeared to connect this WMP work to outreach and education, as a way of showing new landowners what the group has achieved and what it wants to do in the future.

#### *V.D.2 San Juan*

In the San Juan, funding is a salient issue, though not as frequently referenced as it is in the Spokane or Nooksack watersheds. Nevertheless, interviewees mentioned that state funding was in short supply, and indicated that this lack of money would affect both operations and implementation. Several interviewees identified the creation of a Clean Water Taxing District as a potential ex-post coping mechanism, though they stressed that this idea was still under consideration by some of the WRMC members and County officials. These interviewees

suggested that a San Juan County Clean Water Taxing District might resemble an arrangement recently implemented in Island County. If created, this Taxing District would provide stable, locally-sourced funding for water resource management activities.

The basic features of Island County's Taxing District merit a brief description. Island County is located a short distance south of San Juan County, encompassing Whidbey and Camano Islands, with a population of approximately 80,000. The County's Board of Commissioners adopted the "Clean Water Utility" in December 2010 "to address concerns related to water quantity and quality in Island County" (Island County Public Works 2017) The Utility program collects fees from property owners with a handful of exemptions and credits. Urban areas and publicly-owned properties are not included in the Utility District. Revenues collected under the utility fund nine water resource programs, the largest of which (by share of the revenues) are stormwater drainage projects, on-site sewage, and surface water quality monitoring (Island County Public Works 2017). The Utility (and most of the programs it funds) are administered by the County's Public Health Department.

### *V.D.3 Spokane*

Funding constraints are highly-salient in the Spokane River region, with 83% of interviewees identifying the funding situation as a hindrance and 66% of interviewees describing it as an opportunity for improvement. In addition to providing enhanced efficiencies and improved coordination, the Spokane region's Joint Implementation Team represents a coping strategy with both ex-ante and ex-post components. The initial decision to create the Joint Team was an ex-ante action motivated by (1) participants' interests in lowering transaction costs and improving coordination and (2) participants' recognition of the imminent decrease in state funding. In terms of the latter issue, interviewees stated that one of the motivations for creating

the Joint Team was the ability for participants to pool their resources toward continued operations in the absence of additional state money.

The ex-post component of the Spokane strategy involves each government participant contributing a few thousand dollars annually to cover the operational costs of convening the Joint Team. A shortage of funding for implementation continues to pose a problem for Spokane participants (as evidenced by the interview responses), but the Joint Team structure represents a strategy to strengthen the planning effort from an operational perspective.

#### *V.D.4 Nooksack*

There is less clarity about coping strategies for the Nooksack watershed, though interviewees frequently referenced funding constraints. Nooksack participants' coping strategies appear to be similar to those in the Spokane watershed. Much like the Spokane Joint Implementation Team, the recent merger between the WRIA 1 Joint Board and the Nooksack Salmon Recovery Board displays both ex-ante and ex-post strategizing. The two Boards had already been meeting together since 2009, and the formal merger is an outgrowth of an ex-ante interest in integrating and consolidating resource governance efforts in the WRIA (Geneva Consulting 2007; Geneva Consulting 2009). This merger also has ex-post strategy components, as participants have used (or will use) this combined format to increase planning efficiencies, pool resources for operations, and potentially improve access to implementation funds.

Several interviewees also discussed the need for government participants (particularly the County) to increase their financial contributions to the WRIA 1 Project. If this potential strategy is ever implemented, it would also constitute an ex-post approach.

#### *V.D.5 Sustainability strategies aligned with local conditions*

Many of these strategies are well suited to their specific planning areas, but may not be easily applicable to other cases. For example, a county-level Clean Water Taxing District is appropriate in San Juan because the WRIA boundaries are identical to the County's jurisdiction. However, in other areas this approach would be more difficult due to the involvement of multiple counties. The same is true for the merger of the WRIA 1 Joint Board and the Nooksack Salmon Recovery Board; consolidation makes sense because the work areas of both groups are closely aligned and many of the same entities participate on both boards. This approach would be less sensible in areas where the watershed planning effort only occupies a subarea of the Salmon Recovery Board's territory. The emphasis on community outreach in the Entiat is also a reaction to the importance of certain key stakeholder groups (landowners) and to specific social factors (turnover of those landowners).

## CHAPTER VI. DISCUSSION

### VI.A Review of Results & Cross-Case Comparison

Due to the volume of data that I collected, a brief recap of my results is in order before launching into discussion. For my findings regarding influential factors for WMP implementation, I identified three overarching categories: *broader-scale context*, *programmatic or project level*, and *participant level*. Within the broader-scale context, major subthemes included key motivators or focusing events, the resource policy landscape, and political dynamics. Responses at the programmatic or project level highlighted the importance of resources (particularly funding and information) and demonstrated how implementation efforts can build on previous actions and decisions. Within the participant level, I heard about the importance of participants' characteristics, behaviors, and interactions with each other. Areas of improvement arose from constraints and hindering factors, and include enhanced outreach, improvements to coordination, and expanded funding.

Across all cases, I found that the WMPs primarily served a guidance and reference function in support of implementation. Within this theme, interviewees described how the WMPs were useful for selecting projects, identifying high-level strategy, or guiding work on specific recommendations. In cases where usage was low, interviewees identified funding, document age, and other goals or planning frameworks as culprits. In addition to the Plans, funding availability, participants, and joint priority-setting activities all helped drive implementation decisions. The Planning Units themselves fulfilled a number of decision-making and program capacity roles to support implementation, both as individual participants and single units. In addition to creating the Plans themselves, the collaborative interactions on the Planning Units also led to improved interactions, fostered buy-in, and helped with project identification or goal setting.

Due to the age of the Watershed Planning Act's program, I expected continuing funding to be a pressing issue for participating watersheds. I heard about several ex-ante and ex-post strategies to improve sustainability, including efforts to increase community awareness and participation via outreach (ex-ante), consolidating and combining resources (ex-post), and exploring new sources of revenue on a local scale (ex-post). My results also reinforce the importance of commitment and participation as a component of sustainability.

My research design selected cases based on variations in geographic location and population, in order to see if there were different results in different settings. I found that many of the themes for Research Questions 1 through 3 (WMP implementation factors, WMP use, and Planning Unit contributions) occurred in multiple cases, and it appeared that geographic location (west versus east) and population (high versus low) did not meaningfully influence these results.

However, highlights from my cross-case comparison suggest variables that may be more important for the implementation and sustainability of collaborative watershed groups. Contrasting the Entiat with the Nooksack and the Spokane is particularly useful. First, commitment, outreach, and communication came up in several cases, but there were notable differences in who needed to receive communication and whose commitment was especially salient. In the Entiat, responses highlighted the importance of keeping residential landowners well-informed, engaged, and supportive of the planning process. Nooksack and Spokane responses tended to be more general; comments about commitment identified "all major stakeholders" or the "planning group" as a whole, and comments about education or outreach were likewise less targeted at specific segments of the public.

This finding could simply be the result of scale; the Entiat has much smaller land area than the Nooksack and Spokane. Whereas work in the Entiat is concentrated in a smaller, rural

area with fewer concerned publics, the Nooksack and Spokane are large watersheds with numerous entities present, hence communication to (and support from) a wider array of stakeholders is necessary. This suggests that the array of stakeholders present in a watershed (and the networks between them) has implications for implementation and sustainability issues, particularly for communication and commitment. The importance of stakeholders is certainly reinforced by the frequent references to participant characteristics and interactions in all watersheds. Within the *participant level*, it is notable that the responses from the Nooksack and Spokane discussed a wide variety of watershed entities, whereas Entiat responses focused on either landowners or a small number of agencies.

However, the relevance of residential landowners in the Entiat is likely a function of the types of projects and local landownership patterns. The Entiat has a major focus on “on-the-ground” habitat restoration projects for salmon recovery, including riparian plantings, surface-to-well conversions for water supply, and installation of large woody debris (WA RCO & USFWS 2017; CCD 2012; CCD 2013). Additionally, the implementation of the Intensively Monitored Watershed framework requires annual collection of field data for monitoring and evaluation (Desgroseillier et al. 2010; Potter et al. 2014). Due to the pattern of landownership in the area (particularly in the lower reaches of the watershed), many of these projects are dependent on private landowners giving permission to locate projects on their property, or to access their property for installation or monitoring. Several interviewees also noted how the staging and installation of these projects can be disruptive to other residents, with references to “big trucks going up the Entiat River Road.” These project dynamics, combined with the ongoing arrival of new landowners, could explain Entiat interviewees’ particular interest in keeping landowners well informed and supportive of individual projects and the planning effort as whole.

Responses regarding information in the San Juan and Nooksack could represent a similar link between project type and crucial implementation factors. Many of the projects in both watersheds have been oriented around improving the understanding and management of local water supplies (Bandaragoda et al. 2012; Associated Earth Sciences 2016; Kamin 2017), and the importance of information might arise from the emphasis on these types of projects. However, similar types of work have also happened in the Spokane, but interview data did not identify information as an important implementation factor in that watershed. Clearly this analysis is imperfect, and I did not attempt to attribute specific helpful or hindering factors to specific types of actions. However, this finding suggests that program or policy choice may be a better predictor variable than geographic location or population, and further (more focused) research should be done on this topic.

Comparing the Entiat to the Nooksack and Spokane also highlights a stark contrast relating to funding. In total, 54% of all interviewees made at least one reference to funding as a helpful factor, funding constraints as a hindrance, and/or funding as an area of improvement. The majority of funding comments came from the Nooksack and Spokane, where it was discussed in terms of constrained or inadequate finances. Several interviewees in these cases noted how funding had become much more scarce in recent years, and several identified Ecology as a key funding source that had scaled back, though local agencies are continuing to contribute funds (especially for Planning Unit operations). In contrast, no one in the Entiat (and only one person from San Juan) referenced funding constraints as a hindrance or identified funding as an area of improvement.

This variation in funding is interesting when compared to the institutional thickness of the various planning areas (Hardy & Koontz 2010). Funding constraints appear to be more pressing

in the Nooksack and Spokane, despite these areas appearing to have greater institutional thickness within their watershed boundaries. Both planning areas contain a high population and a large land area with a mixture of urban and rural land uses. More meaningfully, the Nooksack and Spokane planning efforts feature involvement from a range of agencies (including cities, one or more counties, tribes, and large water utilities or other special purpose governments) and non-governmental actors that located in their watersheds. Interview and document analysis show that a variety of actors in both watersheds have carried out programs and projects in the past, but there are current concerns about access to funds to continue working. Particularly in Spokane, the agency participants on the JIT have agreed to fund the operations and convening of the group, but money for additional implementation appears to be uncertain and in short supply.

On the other hand, the Entiat watershed at first glance has the characteristics of an area with low institutional thickness (rural, low population in a small land area, and fewer agencies or non-governmental organizations present). However, the Entiat's location in the Upper Columbia Basin and its status as an important salmon habitat means that a variety of agencies from outside the watershed have interests in doing work in the area. Interview and document analysis identified the Bonneville Power Administration, Bureau of Reclamation, Yakama Nation, and Salmon Recovery Funding Board as reoccurring funders for the projects in the Entiat (WA RCO & USFWS 2017; CCD 2012; CCD 2013).

The availability of funding and capacity from these agencies is related to several broader-scale management efforts encompassing the Entiat, including the Yakama Fish Accords, the Upper Columbia Salmon Recovery Plan, and the FCRPS BiOp. Another round of restoration projects (through the IMW effort) is currently in development for the Middle Entiat, with the Bureau of Reclamation identified as a major funder and several agencies playing a role in

implementation. The presence of these overlapping management plans and large agencies working to address salmon habitat may explain why funding is a less salient concern for Entiat interviewees.

More broadly, this finding suggests several important reminders when considering the institutional setting for watershed management. First, the network of concerned agencies, availability of resources, and the overall institutional thickness for watershed management may extend beyond the biophysical boundaries of the watershed. Second, the nature of the local water resource issues and the geographic location of the watershed may influence those networks and resources, particularly if there is overlap with a regional-scale resource management effort. Third, these results show how combination of issues and participants can influence the funding (and potentially the sustainability) of a collaborative watershed effort. Building on this, my results show that simple measures of institutional complexity, rules, or thickness might be too crude; it may be important to identify the specific resources or capacities of individual participants, along with their goals relative to the environmental issues at hand.

Results from the San Juan also give insight into watershed planning in smaller and more rural area. The institutional setting on the Islands is fairly thin, with only one county and one small City. However, interviewees spoke highly of their planning effort's close relationship with state agencies (especially Ecology) and the San Juan County Commission. The WRMC also appears to draw a great deal of expertise and on-the-ground effort from local residents, particularly those who have a background in water supply and/or are affiliated with a local water purveyor. While there were some concerns about organizational issues, funding constraints were not highly salient in the interviews, at least not to the same degree as those from the Nooksack

and Spokane. It is not clear why this is, but it may show that the goals and strategies being pursued in San Juan are well aligned with local resources, expertise, capacities, and motivations.

With regard to the *broader-scale context* of influential implementation factors, I did not hear about every subtheme in every case. Additionally, interviewees from the Nooksack and San Juan mentioned this context much more frequently than those from the Spokane or Entiat. This finding does not mean that the Spokane and Entiat planning efforts have managed to more thoroughly isolate themselves from the surrounding broader-scale context. Instead, my results may suggest that certain contextual elements will be more or less salient or influential in different areas and at different times. As with the findings described above, this variation might be related to local environmental issues, the array of interested stakeholders, and/or the policies that are being implemented.

For example, the relative prominence of the *Hirst* decision in Spokane and Nooksack could be related to the nature of the local water resource issues, since they are large watersheds with instream flow rules and high interests in rural residential development. This could also be a function of timing, since the decision had recently been released, stakeholders were still scrambling to respond, and subsequent legislative or County-level responses may change how *Hirst* impacts watershed planning. Likewise, the timing, nature of the water resource issues, and stakeholders may have added to the salience of the “key motivators or focusing events.” As an example, those from the Nooksack who mentioned a legal or regulatory threat highlighted issues (water supply and water rights), participants (local tribes and other government entities), and timing (threat is pending due to inability to make progress after several years of effort) as key components of the pending legal action.

Finally, project and strategy choices appear to be closely aligned with local water resource issues (Koontz 2005; Hardy & Koontz 2010). Although each planning effort initially dealt with the same set of broad management topics under the Watershed Planning Act, each case's WMP and subsequent actions have followed different paths based on the local water context. These differences in project choice have made the cross-case comparison more challenging than expected. However, this is further evidence that subsequent work should attempt to match specific implementation influences to specific kinds of activities.

## **VI.B Comparison to Emerson & Nabatchi's Integrative Framework**

My results contain a number of linkages to Emerson & Nabatchi's (2015) framework for collaborative governance. Though it is not specific to watershed management, this framework integrates and builds on many prior efforts, and the authors intend for it to "be generalizable across variations in collaborative arrangements" (p. 24). My findings illustrate how several elements of the integrative framework are applicable to implementation in collaborative settings. Perhaps more importantly, my findings suggest how this framework might be augmented to consider issues that are specific to implementation and organizational sustainability.

### *VI.B.1 The system context*

In Research Question 1, my findings concerning the broader-scale context illustrate how characteristics and events outside the planning effort can affect implementation. This broader-scale context is similar to the *system context* in Emerson & Nabatchi's framework. In the framework, a CGR is "nested" within this system context, and the authors describe how "cross-boundary collaboration does not occur in a vacuum...CGRs emerge and evolve within a complex system context that consists of numerous, layered, and interrelated conditions...." Many prior

frameworks have noted how “antecedents” or “starting conditions” can affect the initiation of collaborative processes (Bentrup 2001; Thomson & Perry 2006; Ansell & Gash 2008). However, Emerson & Nabatchi go on to state that their system context “affects the dynamics and performance of CGRs over time” and “shape[s] their contours as they evolve.” My results reaffirm this ongoing influence, with a specific application to implementation actions and decisions. Even though watershed planning efforts have been in existence for ten to fifteen years, elements of the broader-scale context continue to be important.

The subthemes within my broader-scale context also align with several of the components of Emerson & Nabatchi’s system context. For example, my “political dynamics” subtheme is very similar to their *political dynamics and power relations*, while my “court cases,” “key motivators or focusing events,” and “larger-scale planning or management efforts” all fit within their *policy and legal frameworks*. I also heard one comment about favorable *resource or service conditions* in the San Juan.

In particular, my “key motivators or focusing events” subtheme highlights how certain conditions or events served as encouragement for participants to make tangible progress on watershed management. This subtheme is similar to Emerson & Nabatchi’s *consequential incentives driver*. In their framework, the authors describe four drivers which arise from the system context and “without which, [they] posit, the call for collaboration would likely go unheeded.” I cannot conclude whether any calls for implementation would go “unheeded” without these key motivators or focusing events, but my results do show how the broader-scale context can continue to “drive” implementation, in addition to offering other opportunities or constraints.

Several of my subthemes also illustrate how the broader-scale context can extend far beyond the geographic boundaries of the watershed in question. This concept emerged in the references to state water law and in several “political dynamics” responses. In terms of the latter, several interviewees suggested that statewide water resource political dynamics had influenced state legislative behavior, with regulatory and funding implications for Ecology’s activity in the case planning areas). References to the *Hirst* decision (in this research question and others) also illustrate this point, as *Hirst* is a State Supreme Court decision originating from a water management issue in a single county. The broader-scale context also included elements that were much closer to home, but this finding is an important reminder that watershed-scale management can be influenced by drivers, opportunities, and constraints at larger institutional scales.

#### *VI.B.2 Collaboration Dynamics*

A number of my themes within the *Programmatic or Project Level* and *Participant Level* were relevant to Emerson & Nabatchi’s *Collaboration Dynamics*. In integrative framework, Emerson & Nabatchi identify *resources* (including funding) and *knowledge* (“information combined with understanding and capability”) as two components of the *Capacity for Joint Action* collaboration dynamic. They define this *Capacity for Joint Action* as the “functional dimension of collaboration dynamics that enables CGR participants to accomplish their collective purpose,” suggesting that this capacity is the “link between strategy and performance.” My results echo this concept, as I found that funding and information (particularly funding) were both key elements allowing participants to execute the recommendations in their WMPs. Emerson & Nabatchi go on to describe how this capacity can reinforce the other two collaboration dynamics. This concept also aligns with my findings: I found that funding was necessary for convening the meetings where principled engagement is

taking place, and information served as an input that can inform these collaborative conversations or decisions.

Interviewees attributed a great deal of influence to the participants in their collaborative work. Interpersonal interactions between members of the Planning Unit were particularly important. First, one-third of all interviewees described how their efforts had benefited from Planning Unit members listening to and respecting each other, being receptive to each other's goals, and/or simply developing long-term interconnections. Similar ideas emerged when interviewees identified *interactions between participants* as a major additional effect of collaborative plan development. On the other hand, I also heard about how poor relationships or poor communication between Planning Unit members can be a hindrance. Interviewees attributed these poor interactions to goal disagreements, distrust of others, poor meeting attendance, and frustration with other participants' internal policies or procedures.

These types of interpersonal participant interactions appear in Emerson & Nabatchi's collaboration dynamics. In general, they describe these processes "primarily as interactions between participants 'at the table.'" One of their collaboration dynamics is *Shared Motivation*, which "illustrates the interpersonal or relational elements of collaboration dynamics" and includes *trust*, *mutual understanding*, and *internal legitimacy* as components. The authors also link shared motivation to successful and satisfactory *principled engagement*, which is a process by which participants "collaborate across their respective...boundaries to solve problems, resolve conflicts, or create value together." Overall, their framework identifies interactions between participants (and associated relational effects) as critical for developing a successful collaborative effort. My results add depth to this concept by showing how continuing these

interactions is also important when implementing plan recommendations in a collaborative setting.

More generally, my results demonstrate how broad, representative participation continues to be important when implementing a plan or agreement. In describing their *principled engagement*, Emerson & Nabatchi note that “effective engagement typically requires balanced representation from ‘all relevant and significant interests’” (p. 59). They also point out that “principled” engagement is associated with a number of normative values. However, looking beyond engagement, my results suggest a variety of logistical or practical challenges if relevant stakeholders are missing from the implementation stage. These challenges include barriers to communication or coordination, a lack of important capacity or expertise, or an inability to acquire important data. Turnover of participants can also pose a challenge to implementation momentum and organizational sustainability. When considering this topic, however, it is important to note that the definition of a “relevant” stakeholder may vary between different planning efforts or even between different projects.

### *VI.B.3 Actions, Outcomes, and Adaptation*

The *policy choices* subtheme in my programmatic or project level shows how WMP implementation can build from the outputs and outcomes of previous actions or decisions. I heard about the importance of outreach and education programs that made changes to the system context (strengthening community awareness and commitment) that subsequently makes the collaborative effort stronger (by increasing participation and buy-in on the implementation of WMP recommendations). I also heard about inward-facing actions (data-generating activities, front-end collaboration training, and establishment of decision-making protocols) that improved subsequent relationships and implementation decisions.

This concept relates to the idea of feedback in Emerson & Nabatchi's framework. First, they describe how "the CGR's collaborative actions and the subsequent outcomes of those actions can also affect the system context." They also state that "when collaborative actions are effective, they are likely to reinforce the CGR theory of change and propel subsequent actions in line with this theory." I did not hear about reinforcing the CGR's theory of change, but I certainly heard about "affecting the system context" and "actions propelling subsequent actions." My results build on this theme of feedback by suggesting two ways that collaborative actions or decisions can support subsequent implementation: (1) by making favorable changes to the system context and (2) by making favorable changes to the resources and processes of the collaborative group itself.

#### *VI.B.4 Extensions to the framework*

My results show how many of the components of Emerson & Nabatchi's framework can be meaningful for ongoing collaborative effort that has an emphasis on plan implementation. However, rather than simply using my results to test the integrative framework, I suggest that my findings demonstrate some of the issues that could be layered on top of the framework when looking at the implementation of actions. The framework conceptualizes actions as outputs of the collaboration dynamics within the collaborative governance regime, but my results show how other variables at the *broader-scale context*, *programmatic or project level*, and *participant level* are also in play.

For example, my findings at the *broader-scale context* show how their system context directly influences the implementation of actions, rather than only exerting drivers on the formation of the collaborative arrangement. Key pieces of the broader-scale context (at least in my cases) included political dynamics, motivating events, and elements of the overall policy

landscape. Other pieces may be more important in other settings, depending on timing and the characteristics of the collaborative governance regime.

As described above, my findings also show how the collaboration dynamics continue to be important for decision-making and implementation, specifically those related to participant interactions, commitment, and institutional arrangements. However, it may be appropriate to introduce some additional variables to show how resources such as funding and information can affect implementation independently of the collaboration dynamics' iterative cycling. These variables could be conceptualized within the collaborative governance regime or in the system context, depending on their origin; the point is that they are inputs to the system with consequences for implementation but are separate from the collaboration dynamics.

Finally, my results show how actions can lead to outcomes and adaptations that feed back to implementation. Some of these outcomes and adaptations concern the system context, while others feed back into the collaborative governance regime itself. In my cases, the WMP itself was an output (and an articulation of the planning efforts' shared theory of change) that was an important input to subsequent collaboration dynamics, group decisions and implementation actions. Either way, there are opportunities to show how initial agreements or plans, actions, and subsequent outcomes can cycle back to impact future actions and collaboration dynamics.

### **VI.C Implementation, Plan Use, Sustainability, and Other Topics Specific to Collaborative Environmental Management**

In the following subsection, I discuss my results in the context of key findings from the literature on collaborative environmental management. Key points of comparison and discussion relate to funding, information, use of the WMP, additional benefits of collaborative planning, sustainability, and participation. I conclude with a brief comparison to a pair of studies that explored similar topics relating implementation in collaborative watershed management.

### *VI.C.1 Funding*

My findings about funding align with several prior studies of implementation in collaborative watershed efforts. Leach & Sabatier (2005) found that “once agreement is reached, project implementation primarily depends on basic resources: time and money.” I tried to hold time (relatively) constant in my case selection, but their finding about funding certainly applies to my results. My data do not allow me to say whether or not WMP implementation is “primarily dependent” on money, but my interview data suggest that funding is indeed a key limiting factor.

Additionally, my results illustrate the importance of adequate funding for both project/program implementation and for group operations. Interviewees described how project/program funding is important for actually executing WMP recommendations, while operational funding helps maintain the coordination and networking that is fostered through group meetings and is critical for implementation. Likewise, Koontz & Newig (2014) highlight the importance of two types of funding: funding for “for carrying out specific actions on the ground” and funding to support a watershed coordinator who can “foster implementation through networks.” The authors also note the benefits of linking government funding to plan recommendations, and I heard several comments about the value of the Plans (and their collaborative origins) as tools for justifying project proposals to funding agencies.

The prominence of “constrained funding” in my interview data is also reminiscent of Chaffin et al. (2015), who found that funding shortfalls represented the largest group need among a sample of collaborative watershed partnerships in Washington, Oregon, and Idaho. Similar to both my results and those of Koontz & Newig (2014), Chaffin et al. (2015) also identified several different types of funding: “funding for watershed projects,” “sustained, secure, or consistent base funding,” and “funding for administration, organization, or staff,” with

Washington-based partnerships most likely to identify “sustained, secure, or consistent base funding” as their specific group need. Likewise, my interviewees tended to express concerns about a lack of sustained or consistent funding for ongoing work, though I was not able to identify “base funding” as a separate funding subcategory. Chaffin et al. (2015) also noted that “respondents also articulated a fear that current funding would soon diminish;” my study seemed to confirm that those funds have indeed “diminished” (at least in the Spokane, Nooksack, and San Juan), and interviewees are now concerned about ex-post strategies.

### *VI.C.2 Information*

Information was a second key resource at the programmatic or project level. Interviewees pointed to the benefit of activities that provided information on regional hydrology (and to a lesser extent water quality), including field data collection, water budgets, and water models. Among those who commented on a lack of information, a key subtheme was a lack sufficient (and up-to-date) data on regional hydrology and aquatic habitat outcomes. While the interviewee numbers in these themes were small, these findings highlight the kinds of scientific information that are important for watershed group activities. Prior studies have highlighted the importance of technical information in collaborative watershed management (Chaffin et al. 2015), but there may be an opportunity to conduct additional research on the specific subject matter or information formats that are most important for place-based collaborative natural resource efforts.

The sources of this information were varied. In discussing helpful information-related activities, Nooksack interviewees highlighted water quality monitoring conducted by Whatcom County, along with a surface water budget and groundwater model that had been prepared by technical specialists with close consultation and sponsorship from a number of WRIA 1 Project

participants (Bandaragoda et al. 2012; Associated Earth Sciences, Inc. 2016; Lindsay & Dumas 2016). Meanwhile, the San Juan interviewees discussed field data collection by local participants and a rainwater catchment study sponsored by Ecology and carried out by a technical contractor. The interviews are less clear about the appropriate sources of missing or insufficient information, though one interviewee identified the WMP as a key source of (outdated) hydrologic information. Again, these themes are numerically small, they give some insight into the types of information sources that these planning efforts are turning to.

My results are interesting when compared to another piece of Chaffin et al.'s (2015) study, which found that local agency representatives were the most common source of technical information for watershed partnerships. They also found that "presentation by an unbiased official or scientist" was the most-preferred method of receiving this information. I did not specifically ask about preferred sources of information or methods of receiving this information, but agencies do appear to be key players (though not the only players) in many of the information-related activities that I heard about. However, it is not clear how Chaffin et al. (2015)'s survey instrument would have classified the Nooksack groundwater model or the field data collection in the San Juan, as this information was funded, sponsored, and/or collected by the entities that make up the planning groups themselves. My interviewees also did not attribute information deficiencies to any particular entity.

My results also demonstrate how the completion of an information-generating activity can support subsequent decision making or implementation. This may relate to the "establish baseline data" consideration in the *Direction Setting* phase of Bentrup's (2001) linear framework, where *Direction Setting* subsequently leads into *Implementation*. In Bentrup's framework and elsewhere, the joint establishment of baseline data is an important pre-requisite to

creating shared goals and reaching agreement on a plan of action (Ehrmann & Stinson 1999; Emerson & Nabatchi 2015). In my results, this information and baseline data is certainly informing implementation actions, but interviewees talked about these data-related tasks as actions or projects in and of themselves; in this regard, “establish baseline data” does not strictly happen prior to implementation. Instead, the relationship is cyclical and repetitive; implementation of data-related tasks (including effectiveness monitoring & evaluation, which is the final stage in Bentrup’s framework) helps create or refine a planning effort’s baseline data. As this data pool continues to be refined, it can in turn guide and inform subsequent implementation actions.

### *VI.C.3 Use of Plans*

In my data, I found that WMPs predominately served a *reference or guidance* function, but one third of interviewees noted that the use or importance of the WMPs was low (or declining). Interviewees linked this low use to a lack of funding, greater prominence of participants’ own goals or interests, age of the document, and the influence of other planning frameworks. In general, these barriers were external, rather than being related to structural or content-related deficiencies within the Plans themselves.

In their study, Koontz & Newig (2014) found cases where the WMPs did not drive implementation; they attributed this finding to problems with the Plans themselves (contents were too generalized and the plans did not unlock funding) and issues external to the Plans (state officials did not scrutinize the Plans or incorporate them into decision-making).

I did not hear about the same barriers as Koontz & Newig, but our combined results suggest a variety of barriers to meaningful use of resource management plans. However, these barriers will not be present in all situations; for example, several program elements instituted under the

Watershed Planning Act may have prevented Koontz & Newig's barriers from being present in my cases. The local-scale orientation of the Plans combined with the requirement to prepare an additional DIP may have guarded against "plans being too generalized," while the statutory allocation of funds for a WMP implementation phase helped ensure that WMPs "unlocked funding." Finally, the requirement to have WMPs adopted by County Commissions, combined with the close interactions between state agencies and the Planning Units (as reported in every case), may have helped ensure that the Plans contributed to both local- and state-agency decision-making.

Additionally, interviewees noted that the Plans were not the only factors influencing decision making, with funding levels, the influence of participants, and joint priority-setting as other prominent drivers. This finding is important, as it demonstrates that other processes and influences can enter into decision-making even with the existence (and use) of a WMP.

#### *VI.C.4 Additional effects of plan creation*

My results suggest that the process of collaboratively developing a WMP can confer benefits in addition to the WMP itself as an output. First, I found that the planning process helped foster long-term, improved interactions between participants, including bringing groups to the table, building trust, and fostering learning. I also found that this work built commitment to the watershed planning process, and helped participants develop priorities and grant requests for implementation. This builds on prior studies showing that engaging in collaborative planning can build interorganizational networks, coordination, and buy-in, even if the Plan is not itself useful (Koontz & Newig 2014). My findings suggest a slightly different dimension, by showing how the long-term relational outcomes of collaborative planning can strengthen the implementation of the output planning document. My findings also highlight how collaborative

processes depend on *and* help foster improved trust, commitment, and social capital (Ansell & Gash 2008; Emerson & Nabatchi 2015).

#### *VI.C.5 Sustainability strategies and contributors*

My exploration of *ex-ante* and *ex-post* strategies, combined with some of the results from Research Question 1, illustrate many of the key themes from the literature on sustaining collaborative efforts. Overall, interviewees in several cases described how stakeholder participation and commitment were important both for implementing recommendations and sustaining the effort as a whole. Entiat interviewees stressed the importance of commitment from residential landowners, while Spokane and Nooksack tended to talk about commitment from “all major stakeholders” or from the planning effort as a whole. This nuance might be related to a project choice; landowner commitment is particularly important in the Entiat due to the emphasis on habitat restoration on or near private-owned riparian land. On the other hand, there tends to be more variation in the geographic and topical scope of work in the Nooksack and Spokane, which may require ongoing commitment and support from a much wider array of stakeholders (hence the more generalized responses in the interviews).

In particular, my findings show how outreach and commitment-building can serve as an *ex-ante* response (Koontz & Sen 2013), whether it is deliberate or a byproduct of good collaboration. In the Entiat, my results suggest that outreach, education, and communication can be helpful for fostering participation and commitment when targeting a group that plays a direct role in implementation (landowners). In Spokane, interviewees described their interest in continuing to convene and support the JIT when funding became scarce, due to commitment and enthusiasm about the process; this finding highlights how participants’ perception of both procedural and substantive legitimacy (Lubell et al. 2005) can help improve the sustainability of

the effort. San Juan and Nooksack interviewees also expressed this to a less overt extent, discussing how they believe their planning effort does good work and should continue even in the face of funding uncertainty.

The *ex-post* strategies underway in the Nooksack and Spokane show how organizational structure, funding, and adaptability intersect with sustainability. These two planning efforts have consolidated their governance and combined participants' resources in order to lower transaction costs, improve coordination, and provide a means of funding group operations internally. These *ex-post* actions also serve as examples of adaptation to the changing funding situation. Some groups may deliberately shift their goals or work area in order to qualify for new sources of funding as an *ex-post* strategy (Koontz & Sen 2013), but there is no indication that any of the case planning areas have done this yet.

Finally, my results also show how the nature of the water resource topic can influence funding and sustainability, with the Entiat seeming to owe its funding security to a combination of its location and the importance of salmon recovery in the Upper Columbia Basin. The Entiat planning effort's adoption of the IMW framework for salmonid habitat recovery may have represented an early *ex-ante* strategy to align organizational efforts with an additional funding and implementation framework.

#### *VI.C.6 Stakeholder participation and group composition*

Carlson (1999), Leach (2006), and Emerson & Nabatchi (2015), among others, described the importance of inclusive collaborative processes that represented all relevant stakeholders. Margerum (2002) and Koontz & Newig's (2014) literature synthesis also described how maintaining stakeholder participation was important for plan implementation. My results affirm this importance, pointing to a number of practical challenges that can arise if one or more key

stakeholders is not involved with the case planning efforts and/or does not attend Planning Unit meetings. These issues included poor communication, missing implementation capacities, lack of access to key information, and lack of commitment or engagement from a key group.

More broadly, my results from Research Questions 1 through 3 show the importance of participant interactions and networks for implementation and decision-making (Lejano & Ingram 2009; Margerum 2011). These interactions occurred on an interpersonal level between members of the Planning Units and at an interorganizational level between partner entities. Some of the comments about outreach and education may have also implicitly addressed social network strategies, but it was not clear from the interview responses.

## **CHAPTER VII. CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH OPPORTUNITIES**

In Washington, the Watershed Planning Act created a framework for the convening of collaborative efforts for the development and implementation of place-based watershed management plans. In the nearly twenty years since the passage of that law, several dozen WMPs have been created, and a handful of planning efforts are continuing to implement the recommendations in their planning documents. Each of the watersheds in my study represent examples of mature planning groups that are grappling with issues of implementation and organizational sustainability. They have each implemented a variety of policies, programs, and on-the-ground projects, and plan to continue their work. Funding allocations under the Act have largely been exhausted, and each case is pursuing sustainability strategies according to their unique circumstances.

My findings suggest a useful method of conceptualizing the opportunities and constraints regarding plan implementation in collaborative governance settings. Some factors originate within the effort's organizational structure, relating to participant characteristics, participant interactions, resources, or programmatic choices. Other factors emerge from the broader-scale context that exists outside the effort's boundaries; these issues include political dynamics, broader-scale focusing or motivating events, and characteristics of the wider policy or regulatory landscape.

These categories and subthemes will not all be salient to every planning effort at all times. Instead, the factors that are important to a specific collaborative group might vary depending on the stakeholders who are involved and the types of actions that the group is seeking to implement. For example, the implementation of a riparian habitat restoration project likely requires a different set of considerations than the development of a basin-scale hydrologic model.

Again, the categories listed the previous paragraph can be useful for identifying and contrasting meaningful issues in each case. Further exploration is needed to understand how implementation considerations vary based on activity choice, but this is a useful takeaway for academics and resource managers.

My results also show how stakeholders, resources, and capacities can flow into a watershed from a larger-scale resource management effort, based on the local water resource issues. Meanwhile, a watershed with a larger work area and a seemingly thicker institutional setting might still grapple with issues of funding and sustainability. The takeaway here is that an assessment of the meaningful system context must look beyond the biophysical boundaries of the watershed in question. It also suggests that environmental issues can drive funding, capacity, and sustainability, and that a straightforward institutional analysis may not fully capture the implementation context in a particular area.

Several other cross-cutting themes are apparent. Interviewee responses indicate that ongoing stakeholder commitment and participation is important for both implementation and sustainability of the effort (though key stakeholders may vary based on the type of work that is being done). Additionally, my results suggest that communication, outreach, and/or education efforts can be useful for building this engagement. More broadly, my findings show how the outcomes of earlier actions can enable subsequent implementation and decision-making. Other key findings include the importance of funding (for projects and operations) and the ongoing importance of interactions and networks among participants. These interactions and networks play out within the Planning Units and among the broader array of interests in the watershed.

The WMPs themselves represented articulations of the planning efforts' shared theory of change, including a joint understanding of the water resource setting, statement of goals, and

recommended actions for achieving these goals. Interviewees frequently indicated that the WMPs themselves had served as important guidance or reference documents during the implementation phase, and this would seem to align with the intended purpose of these documents. In some cases the use and relevance of these documents had diminished, largely due to external issues such as funding, greater prominence of participants' other goals, or the adoption of another planning framework. In addition to the usefulness of the WMPs themselves, my results also show that the act of collaboratively developing a WMP can confer long-term benefits to relationships, social capital, and commitment to the watershed management process. These developments had far-reaching benefits for WMP implementation, but this may also show that collaborative work can yield positive outcomes even if the plan or agreement is not ultimately useful.

In addition to the WMPs themselves, the collaborative Planning Units continued to play a decision-making role during the implementation phase. The individual members of the Planning Units (and sometimes the Planning Unit as a single entity) were frequently credited with making valuable implementation contributions. These findings illustrate how collaborative forums can continue to be useful in mature, implementation-oriented planning efforts, with many valuable interactions and decisions taking place in these settings. These findings will likely not be universally applicable to all collaborative arrangements, but my cases can still serve as useful examples of long-term collaborative groups.

In terms of sustainability strategies, my cases highlight several possible strategies based on the unique circumstances in each area. The two larger watersheds with overlapping resource governance efforts (Nooksack and Spokane) have chosen to consolidate these efforts and combine resources, with expected benefits for continuing coordination and sustainability.

Meanwhile in the Entiat, turnover of landowners has prompted interest in increased outreach and communication in order to bolster the involvement of this critical stakeholder group. Several areas are also considering the creation of a new local revenue source, but these efforts are still in the early stages of development. Each of these strategies show promise in certain situations, and could serve as templates for other collaborative efforts. However, sustainability strategies will ultimately need to be tailored to the specific circumstance in a particular watershed.

In closing, though my work has yielded important results for academics and practitioners, there are still opportunities to build on this research. As noted above, subsequent efforts might explore which implementation factors are meaningful for specific types of programs or projects. This work will help us better understand the link between implementation variables and specific outputs, which in turn will help us refine our models for collaborative governance. There is also an opportunity to learn more about how information is used by collaborative watershed efforts, including preferred sources, formats, and key subject matter areas.

Focusing specifically on the Emerson & Nabatchi (2015) framework, the authors view collaboration as “consisting of progressively cyclical or iterative interactions between participants,” and the three collaboration dynamics in their integrative framework are arranged in a cyclical, iterative, and mutually reinforcing setup. My results suggest that these three collaboration dynamics are ongoing within watershed (with important effects on WMP implementation). Future research might explore how these dynamics (and each of their components) unfolded and interacted in the past, how they are unfolding now, and how these iterative, cyclical processes have changed over time.

Lastly, there is an opportunity to learn more about how these watershed planning efforts under RCW 90.82 have interacted with other local, state, or federal environmental management

efforts. My results in the Entiat and Nooksack have shown how watershed planning can overlap with salmon recovery, but it would be interesting to learn about other interactions within each case watershed (either positive or negative). Collaborative natural resource management often exists within a complex policy landscape, and it would be beneficial for academics and resource managers to learn more about the impacts of overlapping resource governance.

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## **APPENDIX A: EXTENDED DESCRIPTION OF THE WATERSHED PLANNING ACT**

In its passage of the Watershed Planning Act, the Washington State legislature found that the “local development of watershed plans for managing water resources and for protecting existing water rights is vital to both state and local interests” (RCW 90.82.010). The stated purpose of the Act (per the text of the legislation) is to “develop a more thorough and cooperative method of determining what the current water resource situation in each WRIA of the state and to provide local citizens with the maximum possible input concerning their goals and objectives for water resource management and development” (RCW 90.82.005). This purpose also acknowledges the necessity of “providing state agencies with more specific guidance to manage the water resources of the state” in a manner that is consistent with both state law and input from local interests.

Drawing on this finding and purpose, the Act creates a voluntary framework that encourages local entities to engage in cooperative, watershed-scale water resource planning. In order to support and incentivize this work, the Act allows local watershed planning efforts to receive funding and technical assistance from state agencies. For funding purposes, the Act divides watershed planning into four phases:

- *Phase 1: Organizational Phase* to set up the local planning framework: Up to \$50,000 per WRIA, or up to \$75,000 if the management area includes multiple WRIAs.
- *Phase 2: Assessment Phase* to conduct watershed assessments: Up to \$200,000 for each WRIA in the management area, with additional funds available for studying instream flow, water quality, or multipurpose water storage opportunities.
- *Phase 3: Planning Phase* to formulate a watershed management plan (WMP): Up to \$250,000 for each WRIA in the management area.
- *Phase 4: Implementation Phase* (added in a 2003 amendment) to carry out the recommendations in the WMP: Up to \$100,000 for the first three years of Phase 4, and then up \$50,000 for the fourth and fifth years. If a management area covers multiple WRIAs, an extra \$25,000 for the first three years and \$12,500 for the fourth and fifth

year are available for each additional WRIA. A 10% match is required for all Phase 4 funds. A Detailed Implementation Plan (DIP) must be developed within one year of accepting Phase 4 funding.

Phase 1 can begin only with the consent of an area's "Initiating Governments;" all counties, the largest city, and the largest water supply utility must all give their consent before the process starts, and any Native American tribes must at least be invited to participate (RCW 90.82.060). A single WRIA may include portions of several counties, cities, utility districts, and Native American reservations. The Act provides county governments with the ability to unilaterally opt out of watershed planning if less than five percent of a county's land area falls within a management area; in cases where a county exceeds the five percent threshold, the Act allows the county to opt out with the consent of the area's other Initiating Governments. Per the Act, any county that opts out of watershed planning "shall not be bound by obligations" in the management area's WMP.

Once all necessary entities have given their consent or opted out, the Initiating Governments can use the Phase 1 grant to organize a *Planning Unit*. The Planning Unit plays a central role in the development of a management area's WMP; per the Act, Planning Units are charged with "develop[ing] a process to assure that water resource user interests and directly involved interest groups at the local level have the opportunity, in a fair and equitable manner, to give input and direction to the process" (RCW 90.82.030). In practice, Planning Units have typically taken the form of committees made up representatives from a number of government agencies and non-government interest groups. As Ryan & Klug (2005) observe, the Act does not mandate participation from any specific non-governmental interests, which has contributed to substantial variation in the size, representation, and structure among Planning Units across the state. These Planning Units have often served as venues for participating entities to exchange information, coordinate work, and develop content for the WMP or DIP.

In addition to the Planning Unit and its constituent members, the Act also specifies critical roles for *Lead Agencies*. In each management area, the Lead Agency is responsible for receiving state grants and providing staff support for the Planning Unit and the overall planning effort. As part of an application for Phase 1 funding, the Act requires the Initiating Governments to designate their Lead Agency and “indicate how the Planning Unit will be staffed” (RCW 90.82.060).

A management area’s WMP is the key output of Phases 1-3, though the watershed assessments conducted during Phase 2 also serve as valuable sources of information. A WMP describes the Planning Unit’s recommendations and strategies for addressing local water issues in the WRIA. At minimum, the Act requires that all WMPs address local water quantity issues “by undertaking an assessment of water supply and use in the management area [as part of Phase 2] and developing strategies for future use [conveyed in the WMP].” In addition to water quantity, Planning Units have the option to include water quality, habitat, and instream flow components in their assessments and WMPs. Several WRIAs have also chosen to pursue water storage as an additional WMP component.

Once a Planning Unit completes its proposed WMP, the Plan must be “approved” through one of two decision-making mechanisms: consensus of *all* Planning Unit members or consensus of the government representatives accompanied by a majority vote of the nongovernmental members. The WMP must also be “adopted” by the legislatures of each participating county (with public notice and at least one public hearing) before the Plan can officially take effect. Planning Units cannot include WMP items that create obligations for a given agency if that agency was not represented on the Planning Unit or did not agree to add the item. WMPs also cannot be inconsistent with or duplicative of laws already in place in the management area; while

Planning Units are empowered to make recommendations through their WMPs, the individual local governments retain authority to enact or adjust local policies and regulations.

While WMPs primarily convey recommendations for action, the text of the Act compels the state (specifically the Department of Ecology) to refer to a management area's WMP when making decisions with local effects. RCW 90.82.130 states that "the department [Ecology] shall use the plan as a framework for making future water resource decisions for the planned watershed or watersheds. Additionally, the department shall rely upon the plan as a primary consideration in determining the public interest related to such decisions."

Once a WMP is completed, a watershed planning effort can progress into Phase 4 implementation. As previously noted, acceptance of Phase 4 funding requires the preparation of a DIP. A DIP is a companion to the WMP, outlining how recommendations and strategies will be implemented, how they will be funded, and which organizations are responsible for carrying out specific actions. The Act stipulates that DIPs must discuss oversight responsibilities, coordination guidelines, necessary permits or authorizations, timelines, and interim milestones to measure progress. In practice, most DIPs and associated WMPs are extensive, highly-detailed technical documents. Following the Planning Unit's completion of the DIP, participating entities can use Phase 4 funding to implement the items in the planning documents.

Along with financial assistance, the Act also instructs the state to provide technical support to local entities engaged in watershed planning. RCW 90.82.060 states that "Each state agency with regulatory or other interests in the WRIA...shall assist the local citizens in the planning efforts to the greatest extent practicable" if the Planning Unit asks for help. As a means of coordinating agency involvement with Planning Units, twelve state agencies signed a Memorandum of Understanding that clarifies agency roles and responsibilities when dealing

with local groups. In particular, Ecology has played a lead role administering state grants, working closely with individual Planning Units, and overseeing the Act's watershed planning program at the state level.

## APPENDIX B: DATA FROM PRELIMINARY WRIA SURVEY



WRIA #	Region Name	East/West	Plan Approved?	Date	Start of Phase 4	DIP Complete?	Date	Optional Elements	Pop.	Population Source & (Date)
1	Nooksack*	West	YES	Jun-05	Jun-06	YES	Jul-07	WQ, H, IF	201140	WMP-C (2010)
2	San Juan	West	YES	Oct-04	2005	YES	Jan-06	WQ, H, IF	15769	C (2010)
3/4	Samish, Lower & Upper Skagit	West	NO							
5	Stillaguamish	West	NO							
6	Island	West	YES	Jun-05	Aug-05	YES	Dec-06	None	78506	C (2010)
7	Snohomish	West	NO							
8	Cedar-Sammamish	West	NO							
9	Duwamish-Green	West	NO							
10	Puyallup-White	West	NO							
11	Nisqually	West	YES	Apr-04	Nov-05	YES	Apr-07	WQ, H, IF, S	U	U
12	Chambers-Clover	West	NO							
13	Deschutes	West	NO							
14a	Kennedy-Goldsborough	West	NO							
15	Kitsap	West	NO							
16/14b	Skokomish-Dosewallips/Hood	West	YES	Jul-06	Jul-07	YES	Jun-08	WQ, H, IF	8000	WMP-C (2000)
17	Quilcene-Snow	West	YES	Jan-05	U	YES	Oct-07	WQ, H, IF	27000	WMP-? (2003)
18	Elwha-Dungeness	West	YES	Jun-05	U	NO		WQ, H, IF	51235	WMP-C (2000)
19	Lyre-Hoko	West	NO							
20	Soleduck-Hoh	West	YES	Nov-08	Su-2009	YES	Feb-10	WQ, H, IF	9300	WMP-C (2000)
21	Queets-Quinalt	West	NO							
22/23	Chehalis Basin	West	YES	May-04	Oct-05	YES	Oct-06	WQ, H, IF	141000	WMP-C (2000)
24	Willapa	West	NO							
25/26	Grays-Elochoman/Cowlitz	West	YES	Jul-06	Sp-2007	YES	Jun-08	WQ, H, IF	114500	WMP-M/C (2006)
27/28	Lewis/Salmon-Washougal	West	YES	Jul-06	Sp-2007	YES	Jun-08	WQ, H, IF	361350	WMP-C (2000)
29a	Wind	West	YES	Nov-06	2014	YES	Jul-15	WQ, H, IF	6000	WMP-C (2000)
29b	White Salmon	West	NO							
30	Klickitat	East	YES	Aug-06	Dec-06	YES	May-08	WQ, H	19300	WMP-OFM (2004)

WRIA #	Region Name	East/West	Plan Approved?	Date	Start of Phase 4	DIP Complete?	Date	Optional Elements	Pop.	Population Source & (Date)
31	Rock Glade*	East	YES	Apr-08	U	YES	U	WQ, S	67600	WMP-C (2000)
32	Walla Walla*	East	YES	Jun-04	Jan-06	YES	Jun-06	WQ, H, IF, S		
33	Lower Snake	East	NO							
34	Palouse*	East	YES	Dec-07	Jan-08	YES	Feb-09	WQ, IF, S	8000	WMP-? (2004)
35	Middle Snake	East	YES	Aug-07	Sep-07	YES	Sep-08	WQ, H, IF	25000	DIP-? (2011)
36	Esquatzel Coulee	East	NO							
37/38/39	Yakima Basin & Naches*	East	YES	Nov-05	Sep-06	YES	Jul-07	WQ, H		
40	Alkali-Squilchuck	East	NO							
40a	Stemilt-Squilchuck	East	YES	Jun-07	Sp-2008	YES	Oct-08	S	3770	WMP-C (2000)
41	Lower Crab	East	NO							
42	Grand Coulee	East	NO							
43	Upper Crab-Wilson*	East	YES	Mar-07	Sp-2008	YES	Nov-08	WQ, H, IF, S	6780	C (2010)
44/50	Moses Coulee/Foster Creek	East	YES	Nov-04	Feb-05	YES	Feb-06	WQ, H, IF	31600	M/C Web (?)
45	Wenatchee	East	YES	Jun-06	Mar-07	YES	Apr-08	WQ, H, IF	23850	WMP-M/C (2005)
46	Entiat*	East	YES	Sep-04	Feb-05	YES	Feb-06	WQ, H, IF	1274	WMP-C (2000)
47	Chelan*	East	YES	Jun-12	U	YES	Nov-14	WQ		
48	Methow*	East	YES	Jun-05	Nov-08	YES	Oct-09	WQ, H	11500	WMP-? (2005)
49	Okanogan	East	YES	Apr-10	U	NO		WQ, IF, S		
51	Nespelem	East	NO							
52	Sanpoil	East	NO							
53	Lower Lake Roosevelt	East	NO	pending						
54	Lower Spokane*	East	YES	Oct-09	Oct-09	YES	Dec-10	WQ, H, IF	89426	WMP-C & OFM (2000)
55/57	Little & Middle Spokane*	East	YES	Jan-06	Oct-06	YES	Feb-08	IF, S	275000	WMP-C (2000)
56	Hangman (Latah)*	East	YES	Sep-05	Oct-06	YES	Feb-08	WQ, H, IF, S	46403	WMP-C & C/M (2000)
58	Middle Lake Roosevelt	East	NO							
59	Colville	East	YES	Nov-04	Sp-2005	YES	Mar-06	WQ	22430	WMP-C (2000)
60	Kettle Falls	East	NO							
61	Upper Lake Roosevelt	East	NO							
62	Pend Oreille*	East	YES	Jun-05	Sep-05	YES	Oct-06	WQ, IF	13001	C (2010)

## Key for Appendix B Table:

Entry-General	Definition
U	Information unknown

Entry-Optional Elements	Definition
WQ	Water Quality
H	Habitat
IF	Instream Flows
S	Storage

	Watershed adopted WMP & DIP under 90.82
	Watershed did not adopt WMP & DIP under 90.82

Entry-Population Source & (Date)	Definition
WMP-C	Data retrieved from WMP; WMP is citing US Census data
WMP-C/M	Data retrieved from WMP; WMP is citing data from county or municipal sources
WMP-OFM	Data retrieved from WMP: WMP is citing data from the WA Office of Financial Management
WMP-?	Data retrieved from WMP: Data source for WMP is unknown/not cited
DIP-?	Data retrieved from the DIP; Data source for DIP is unknown/not cited
C	Data retrieved directly from US Census: ( <a href="http://data.spokesman.com/census/2010/washington/counties/">http://data.spokesman.com/census/2010/washington/counties/</a> or <a href="http://data.spokesman.com/census/2010/washington/cities/">/cities/</a> )
C/M Web	Data retrieved from a municipal or county website

Notes for specific WRIAs (denoted by \* in *Region Name* column)

WRIA # and Name	Comments
1-Nooksack	Whatcom County population only. Due to the alignment of boundaries, Whatcom County population is a suitable proxy for WRIA 1 population
31-Rock Glade	Key Phase 4 dates unknown, but Ecology website shows that it has progressed to Phase 4, agency budget shows a Phase 4, year 5 grant provision of \$50,000 in 2014
32-Walla Walla	Operating under a unique planning framework (see RCW 90.92), NOT appropriate to include in sample

<b>WRIA # and Name</b>	<b>Comments</b>
34-Palouse	Ecology website says WRIA 34 Planning Group is not currently operating with 90.82 grant funding and has not met for several years
37/38/39-Yakima Basin and Naches	No Lead Agency under 90.82, watershed work now coordinated through Yakima River Basin Integrated Plan, NOT appropriate to include in sample
43-Upper Crab-Wilson	Population estimate is based on census data for six towns in the WRIA
46-Entiat	Total population is an estimate based on data for full-time residents only
47-Chelan	The Planning Unit released a final review draft of the DIP in 11/2014
48-Methow	Population figure is an estimate for 2015, dated from 2005
54, 55/57, 56-Spokane River area	Four WRIAs completed WMPs and DIPs separately but now coordinate via a regional Joint Implementation Team
62-Pend Oreille	Population of Pend Oreille County is a proxy for WRIA 62 population

## APPENDIX C: INTERVIEW GUIDE

### Interview Questions

Version: *Generic*

#### Part I: Introductory Questions

1. What is/was your role with the [Watershed Name/WRIA Number] Planning Unit [use group title if something other than *Planning Unit*]
2. How long did you work/have you worked in this capacity?
3. What entities, organizations, or interest groups are you representing (if any)?

#### Part II: Implementation of Plan Recommendations and other actions

1. Can you describe some of the [Planning Unit Name]'s major accomplishments in the time period following the completion of the [Watershed]'s Detailed Implementation Plan? These could be accomplishments related to the recommendations in the Watershed Management Plan or the Detailed Implementation Plan, or other accomplishments beyond the plan recommendations.
2. **A.** How has the [Planning Unit Name] used the Watershed Management Plan and the Detailed Implementation Plan in the time since these documents were created?
2. **B.** How has the [Planning Unit Name] decided which actions or strategies to implement?
2. **C.** What additional effects, if any, did the process of creating the Plans have on these implementation decisions, other than the creation of the Plans themselves? (*clarify meaning of "additional effects" and "other than the creation of..." if needed*)
3. What factors have been helpful during the process of implementing plan recommendations or other projects? For any factors you identify, could you provide an example of how each one aided a particular action or decision? These can apply to the accomplishments you described in the previous question or to other projects.
4. Conversely, can you think of any factors that have hindered your implementation work? As with the previous question, examples are very helpful.
5. How has the [Planning Unit Name] itself contributed to this implementation process?
6. Can you think of any opportunities for the [Planning Unit Name] to improve its practices relating to recommendation or other project implementation?

**Part III:** Collaboration in local watershed management and its connection to program implementation

*The purpose of this section is to explore whether some of the Planning Unit's characteristics have had any effect on the process of implementing plan recommendations or other actions.*

1. Do you think the [Planning Unit Name] includes representatives from all of the relevant interests in the watershed? Do you think the representation/membership on the Planning Unit has had any effect on the implementation of recommendations or other projects?
2. A. Do you (and your organization, if applicable) have the capacity and resources to fully engage in the planning process? What about the capacity and resources of the group as a whole?
2. B. Do you think this has any effect on the group's implementation efforts? Please describe
3. A. Did the group develop a shared mission and a shared understanding of the local water management situation?
3. B. Do you think you've learned about the perspectives of other Planning Unit members?
3. C. (*Ask separately for 3.A. and 3.B.*): How do you think this process has affected the implementation of your Watershed Management Plan?
4. What kinds of information were most important for making planning and implementation decisions? How do you think this information use connects with your implementation approach?
5. Thinking back to the items we've just discussed, is there anything more you'd like to say about the relationship between the characteristics of the [Planning Unit Name] and the process of carrying out plan recommendations or other projects?
6. Considering what's been achieved thus far, do you think the same actions would have occurred if the characteristics we've talked about were different? Why or why not?

**Part IV: Closing questions**

1. What is your expectation for the future of this watershed management process in San Juan County?
2. Is there anything else you'd like to say about watershed management, collaboration, or the *Watershed Planning Act* program in your area?

## APPENDIX D: CODING FRAMEWORK FOR RESEARCH QUESTION 1

Factors that have been helpful during the implementation of WMP recommendations or related projects:

Category Name	Description/Coding Criteria
Broader-scale context	Factors occurring beyond the network/organizational boundaries of the collaborative planning efforts, including environmental or socioeconomic conditions, characteristics of the wider-scale policy context, or notable events
Programmatic or project level	Factors related to the structure of, or actions taken by, the planning effort. Includes resources, policies, project choices, or organizational features
Participant level	Factors related to participants' (or other entities') involvement, interests, or behaviors related to the planning effort. Includes group dynamics and interactions. Applies to individuals or organizations.

*Sub-categories: Broader-scale context*

Sub-Category Name	Description/Coding Criteria
<ul style="list-style-type: none"> <li>• Regional water resource context</li> </ul>	Characteristics of the watershed's water resource context, including policy landscape and geographic or hydrologic factors.
<ul style="list-style-type: none"> <li>• Key motivators or focusing events</li> </ul>	Events or issues that provided an impetus for action, or encouraged participants to work on project implementation
<ul style="list-style-type: none"> <li>○ <i>Regulatory/legal threat</i></li> </ul>	Perceived risk of increased regulatory or legal action coming into the planning area
<ul style="list-style-type: none"> <li>○ <i>Recognition of important resource issue (non-regulatory)</i></li> </ul>	Recognition of an urgent or otherwise notable water resource-related challenge or opportunity (environmental, socioeconomic, or political)

*Sub-categories: Programmatic or project-level*

Sub-Category Name	Description/Coding Criteria
<ul style="list-style-type: none"> <li>• Funding</li> </ul>	Financial resources to support Planning Unit operations, project implementation, or other functions

<ul style="list-style-type: none"> <li>• Planning or early organizational work</li> </ul>	Non-financial resources, policies, or organizational features relevant to the pre-implementation phases of watershed planning
<ul style="list-style-type: none"> <li>○ Front-end training for participants</li> </ul>	During the organizing phase, carrying out training program(s) targeted at participants in the planning effort.
<ul style="list-style-type: none"> <li>○ Integrative management approach</li> </ul>	During the development of WMPs, DIPs, or specific projects, using a mindset/strategy where aspects of water resource management are closely linked to each other and closely linked to the management of other environment or natural resource issues
<ul style="list-style-type: none"> <li>○ Prioritizing projects for implementation</li> </ul>	The Planning Unit, WMP, and/or DIP develop a method of rating, scoring, or ranking potential/recommended projects
<ul style="list-style-type: none"> <li>○ Projects listed in Plans</li> </ul>	The WMP and/or DIP display the effort's recommended projects, strategies, or other actions.
<ul style="list-style-type: none"> <li>• Project or policy tool choices</li> </ul>	Individual projects, overarching strategies, or other actions implemented by the planning effort or its individual participants
<ul style="list-style-type: none"> <li>○ Emphasize work that has community benefits</li> </ul>	Selecting projects or other actions that reflect community concerns and/or confer benefits beyond direct water resource outcomes
<ul style="list-style-type: none"> <li>○ Experimentation on tools or strategies</li> </ul>	Using a broad array of policy tools or overarching strategies with an adaptive or experimental mindset
<ul style="list-style-type: none"> <li>○ Information/data collection, monitoring, or modelling</li> </ul>	Implementing projects that generate water resource data, either through collection of data from the field or modeling of environmental systems
<ul style="list-style-type: none"> <li>○ Outreach or education</li> </ul>	Carrying out educational or information-disseminating actions, with non-governmental entities and the general public as the primary audience.
<ul style="list-style-type: none"> <li>○ Voluntary policy tools</li> </ul>	Implementing policies where participation or compliance is not mandatory.

*Sub-categories: Participant level*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
<ul style="list-style-type: none"> <li>• Support or commitment from participants or other entities</li> </ul>	Participants in the planning effort, and other entities as appropriate, are supportive, interested in, and/or

	committed to the planning effort and/or individual projects. Participants have bought into the planning effort
<ul style="list-style-type: none"> <li>• Participant interactions</li> </ul>	Factors related to the interactions or relationships among the participants in the planning effort
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Cooperative relationships</li> </ul> </li> </ul>	Respectful, open-minded, and/or well-coordinated interactions among Planning Unit members or other participants in the planning effort
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Early agreement on rules or procedures</li> </ul> </li> </ul>	The Planning Unit achieving consensus on its own norms, ground rules, and/or procedures at an early time in the watershed planning process
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Structures/rules for participation</li> </ul> </li> </ul>	Rules or procedures for how individuals/organizations participate on the Planning Unit
<ul style="list-style-type: none"> <li>• Who is involved</li> </ul>	Specific references to the value of participation from a certain individual or organization, or the value of an individual/organization fulfilling a role within the effort
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Citizens or community members (during Plan development)</li> </ul> </li> </ul>	Citizens, property owners, and/or community groups are able to contribute to the development and approval of the WMP or DIP
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Facilitation</li> </ul> </li> </ul>	Value of the Planning Unit’s facilitator(s)
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Leadership</li> </ul> </li> </ul>	Value of individuals or organizations with leadership roles in the planning effort
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Non-regulatory agencies</li> </ul> </li> </ul>	Value of participation from a government agency whose primary purpose is non-regulatory
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Organized interest-based sub-groups</li> </ul> </li> </ul>	Value of participants with similar interests forming sub-groups and participating through that mechanism
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ “Right people” in the room</li> </ul> </li> </ul>	Value of having the “right people” or “right organizations” involved with the Planning Unit
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Technically-knowledgeable people</li> </ul> </li> </ul>	Value of having technical experts or people with extensive local knowledge on the Planning Unit

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## Factors that have hindered the implementation of Plan recommendations or other projects

### *Top-Level categories:*

<b>Category Name</b>	<b>Description/Coding Criteria</b>
Broader-scale context	Factors occurring beyond the network/organizational boundaries of the collaborative planning efforts, including environmental or socioeconomic conditions, characteristics of the wider-scale policy context, or notable events
Programmatic or project level	Factors related to the structure of, or actions taken by, the planning effort. Includes resources, policies, project choices, or organizational features
Participant level	Factors related to participants' (or other entities') involvement, interests, or behaviors related to the planning effort. Includes group dynamics and interactions. Applies to individuals or organizations.

### *Sub-categories: Broader context*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
<ul style="list-style-type: none"> <li>• Court cases</li> </ul>	Judicial decisions (at any level) that have hindered the planning effort's implementation work
<ul style="list-style-type: none"> <li>• Larger-scale planning/mgmt. efforts</li> </ul>	Environmental planning or resource management efforts that encompass a larger geographic region, including the planning area
<ul style="list-style-type: none"> <li>• Political landscape</li> </ul>	Political controversies or constraints involving agencies, legislatures, or other entities, primarily occurring outside boundaries of the planning effort in question
<ul style="list-style-type: none"> <li>○ Local level</li> </ul>	Primarily occurring within the planning area, affecting local legislatures, agencies, or laws, but relating to issues beyond the scope of the planning effort in question
<ul style="list-style-type: none"> <li>○ State level</li> </ul>	Primarily occurring at the state level (but with local implications), involving the state legislature, state agencies, and/or state laws

*Sub-categories: Programmatic or project level*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
<ul style="list-style-type: none"> <li>• Funding</li> </ul>	Financial resources to support Planning Unit operations, project implementation, or other functions
<ul style="list-style-type: none"> <li>• Implementation actions or strategies</li> </ul>	Individual projects, overarching strategies, or other actions implemented (or not implemented) by the planning effort or its individual participants
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Lack of regulatory enforcement</li> </ul> </li> </ul>	Regulatory programs related to the planning effort are not adequately enforced by responsible agencies
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Monitoring approach</li> </ul> </li> </ul>	The strategy for collecting environmental or project performance data is problematic
<ul style="list-style-type: none"> <li>• Information</li> </ul>	Relating to availability or quality of environmental data or other information
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Guidance from Plans</li> </ul> </li> </ul>	Guidance given by the WMP and/or DIP, in regards to implementation actions or strategies, is insufficient or confusing
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Lack of evidence for outcomes</li> </ul> </li> </ul>	The Planning Unit or individual participants do not have sufficient evidence showing the outcomes of previously-implemented projects
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Needing to make decisions without data availability</li> </ul> </li> </ul>	The Planning Unit or individual participants are required to make implementation decisions without access to adequate data, with implications for project effectiveness
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ Reliance on old/outdated information</li> </ul> </li> </ul>	Implementation decisions or actions are informed by data that are no longer current, with implications for project effectiveness

*Sub-categories: Participant level*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
<ul style="list-style-type: none"> <li>• Missing organizations or individuals</li> </ul>	Problems related to the nonparticipation of one or more organizations or individuals
<ul style="list-style-type: none"> <li>• Over-representation of certain groups</li> </ul>	Problems related to the over-representation of one or more organizations or interest groups on the Planning Unit
<ul style="list-style-type: none"> <li>• How participants interact</li> </ul>	Factors related to the interactions or relationships among the entities involved with the planning effort

○ Communication to public	Failures or lapses in sharing information with the public, including publicity related to the planning effort and information on individual projects
○ Dynamics or relationships among participants	Conversations, ongoing relationships, group decision-making, or other interactions among participants
● Who's involved	Problems with individuals' or organizations' characteristics, interests, or actions, independent of interactions with other participants
○ Capacity to carry out a program or action	An organization lacking the capacities or resources to carry out an action assigned to it by the WMP, DIP, or by statute
○ Disruptive late arrivals	Problems created by involvement of organizations or individuals who arrived after the planning effort had been well-established
○ Participants' interests or behaviors	Problems created by individuals' or organizations' interests, priorities, or procedures relating to the planning effort.
○ Planning fatigue	Participating individuals or organizations losing interest or getting "burned out" due to long periods of involvement with the planning effort
○ Turnover	Changes to the composition of the Planning Unit or the network of involved organizations; older members leaving the effort and being replaced by new members (or not)

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### **Opportunities for the Planning Unit or participants to improve their practices, particularly related to implementation**

*Top-level categories:*

<b>Category Name</b>	<b>Description/Coding Criteria</b>
Address funding issues	Find new sources of funding, reduce funding uncertainty, or otherwise improve the planning effort's financial situation
Enhance citizen engagement or awareness	Increase citizens' or non-governmental entities' knowledge or excitement about the planning effort; increase the level of citizen or non-gov't entity involvement in the planning effort

Evaluation of Plan & feedback into future work	Revisit and potentially revise Plan recommendations; compare activity to date with goals and recommendations; integrate these evaluation findings into subsequent planning and implementation
Improvements to policy, management tools, or projects	Improve planning area's policies or procedures related to water resource management; improve the planning efforts implementation strategies or specific projects
Improvements to scope, coordination, or structure	Improve the planning effort's goals or organizational structure (including use of the Plans and coordination among participants)
Unsure	Interviewee could not think of any opportunities for improvement

## APPENDIX E: CODING FRAMEWORK FOR RESEARCH QUESTION 2

### How the Planning Unit & participants have used the Watershed Management Plan and/or Detailed Implementation Plan

*Top-level categories:*

Category Name	Description/Coding Criteria
Guidance for projects or strategy	The Planning Unit participants use the WMP and/or DIP to provide guidance or direction for projects or overarching strategy
Justifying projects to funders	The Planning Unit participants use the WMP and/or DIP to support funding requests, or otherwise convince funders to engage with a project
Low or declining use/importance	The Planning Unit participants have not used the WMP and/or DIP extensively, or use of those documents has declined over time
Describes current interests or efforts to increase use	The Planning Unit participants have engaged in, or at least expressed interest in, increasing the use or relevance of the Plans
Relationship between	Interviewee describes how funding availability influences the use of the WMP and/or DIP, or how WMP/DIP use otherwise intersects with funding considerations

*Sub-theme: Guidance for projects or strategy*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
<ul style="list-style-type: none"> <li>Guidance for a specific activity</li> </ul>	Interviewee describes how the WMP and/or DIP provide guidance or direction on the implementation of a specific project or other action
<ul style="list-style-type: none"> <li>Strategic guidance or priority-setting</li> </ul>	The Planning Unit or participants use the WMP and/or DIP to inform decisions on over-arching management strategy, including identification of areas/issues that should be the focus of management
<ul style="list-style-type: none"> <li>Selection or identification of projects</li> </ul>	The Planning Unit or participants use the WMP and/or DIP to identify or select projects or other actions to be implemented

**How implementation decisions have been made***Top-level categories:*

<b>Category Name</b>	<b>Description/Coding Criteria</b>
Challenge of using, or low use of, Plans	Interviewee explicitly states that WMP/DIP has not been extensively used in implementation decisions, or describes challenges in using the Plans in this capacity
Consider existing laws, conditions, or context	The Planning Unit participants account for existing policies, regulations, environmental conditions, or socioeconomic factors when making decisions
Decisions driven by data-related goals	Interviewee describes how data acquisition is a primary goal and primary driver of project decisions
Drawing on data or assessment results	Environmental data plays a major role by informing implementation decision-making
Funding availability as a key driver	Implementation decisions are heavily influenced by how much funding is available, what it can be used for, and when it is provided
Influence or roles of participants	Interviewee describes the ways in which participants drive or contribute to decision-making
Jointly setting priorities or identifying projects	Planning Unit members work together to collectively agree on implementation priorities or specific projects to carry out

Relevancy, urgency, or potential impacts or projects	Actions that address urgent or high-profile issues are more likely to be implemented
Use of Plans	Interviewee describes how the WMP and/or DIP is used to guide and inform implementation decisions

## APPENDIX F: CODING FRAMEWORK FOR RESEARCH QUESTION 3

### How the Planning Unit (or equivalent) has contributed to implementation

*Top-level codes:*

Category Name	Description/Coding Criteria
Continued collaboration, communication, or convening	Planning Unit convening participants and facilitating interactions, independent of project decision-making or direct implementation
Decision-making	Planning Unit contributions to the identification, selection, or approval of actions or strategies
Directly carrying out or supporting actions	Planning Unit and/or individual participants are aiding the implementation of projects or other actions, through provision of resources, capacity, or direct execution of work
Limited or no contributions	Interviewee stated that the Planning Unit has not positively contributed to, or has hindered, implementation of Plans or other projects

*Sub-categories within “Decision-making” theme:*

Sub-Category Name	Description/Coding Criteria
Adaptation and refinement of planning approach	Planning Unit refining its approach over time due to repeated planning efforts
Endorsing or approving projects	Planning Unit giving its approval, endorsement, or “blessing” of proposed projects or actions
Giving input on projects or strategy	Planning Unit giving its input or feedback (but not explicit approval or endorsement) on proposed projects or actions
Project or strategy selection or identification	Planning Unit setting priorities, strategies, or individual projects to be carried out

*Sub-categories within “Directly carrying out or supporting actions”*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
Attributed to individual members	Interviewee describes how individuals or organizations have been responsible for carrying out implementation actions
Attributed to the Unit or Team as a whole	Interviewee describes how the Planning Unit as a whole (or single entity) has been responsible for carrying out or making key contributions to implementation actions.

**Additional long-term effects of collaboratively developing the WMPs (in addition the WMPs themselves as outputs)***Top-level categories:*

<b>Category Name</b>	<b>Description/Coding Criteria</b>
Adaptive management approach	The participants created an adaptive document, which can be revised or respond to changes in the management situation, creating an adaptive and flexible planning effort
Interactions between participants	The process of creating the Plans has allowed for positive interactions or relationships between participants, which in turn have helpful effects on project implementation
Fostering buy in or commitment from participants	The process of creating the Plans helped cultivate buy in, commitment, or support for the projects among participants
Supporting implementation actions	The process of creating the Plans had additional, positive impacts on the implementation of projects or other actions

*Sub-categories within “Interactions between participants” theme:*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
Bringing groups together and fostering cooperation or trust	The process of creating the Plans has helped convene participants “in the same room,” or has facilitated communication, coordination, and/or increased trust, which aids subsequent implementation and decision-making

Learning from or about others	The process of creating the Plans has helped participants learn about others' interests or perspectives, or has helped participants share expertise with each other
Helping to reach consensus on what to implement	The process of creating the Plans makes it easier for participants to reach consensus on which projects or other actions to carry out

*Sub-categories within "supporting implementation actions" theme:*

<b>Sub-Category Name</b>	<b>Description/Coding Criteria</b>
Help participants focus on issues or identify projects	The process of creating the Plans helped participants clarify important issues or management areas, and/or helped suitable identify projects for eventual implementation
Justifying or informing grant requests	The outputs of the planning process could later be used to justify proposed projects to funders
Pulling together data or best available scientific information	The process of creating the Plans helped participants gather environmental data or other scientific information, which was beneficial for both planning and subsequent work

## **APPENDIX G: EXTENDED CASE DESCRIPTIONS**

*Note: Information in this section is drawn from each area's Watershed Management Plans, Detailed Implementation Plans, or interviews, unless otherwise noted*

### **Nooksack (WRIA 1)**

The Nooksack watershed is located in the northwest corner of Washington, stretching from the western slopes of the Cascade Mountains (including Mount Baker) to the Georgia Strait. WRIA 1 encompasses 1,410 square miles within Whatcom and Skagit Counties (though only 81 square miles lie in Skagit County). An additional 147 square miles extend into Canada, but this section is not part of the designated WRIA 1 area. WRIA 1 also includes the reservations for the Lummi Nation and Nooksack Tribe.

The eastern half of the WRIA is occupied by foothills, taller mountains, and the three forks of the Nooksack. The western half of the WRIA contains lower-elevation flatlands and includes the mainstem Nooksack, the Sumas River, and Lake Whatcom. WRIA 1's instream flow rule has been in place since 1985, and many of the area's sub-basins are closed to new consumptive uses. WRIA home is to several species of ESA-listed of salmonid species.

Major land uses in WRIA 1 include forestry, agriculture, and residential development. The Forest Service and National Park Service are the main landowners in the eastern third of the watershed (with lands designated for timber harvest, wilderness, and various forms of recreation). Most of the remaining acreage is privately-owned, interspersed with small tracts administered by local, state, or tribal agencies. Due to geography and distribution of land ownership, most of the WRIA's population is concentrated in the flatlands of western Whatcom County. The WRIA's largest city is Bellingham, with a population of 85,146 (July 2015 estimate). Other municipalities include Ferndale, Blaine, Lynden, Sumas, and Nooksack. Overall, Whatcom County has an estimated population (July 2015) of 212,284. Many residents

in rural Whatcom County rely on permit-exempt wells for domestic water supply; under state law, a domestic well is “permit-exempt” if it withdraws less than 5,000 gallons per day (Ecology 2016a).

Watershed planning efforts in WRIA 1 are known as the *WRIA 1 Project*. The Project’s five Initiating Governments are the Lummi Nation, Nooksack Tribe, Whatcom County, the City of Bellingham, and Public Utility District #1 of Whatcom County. Whatcom County is the Project’s Lead Agency. The Project’s organizational structure (as laid out in a 1999 Interlocal Agreement) consists of a Joint Board, a Planning Unit, and several staff and technical teams. The Joint Board includes executive officials from each of the Initiating Governments, and the group is responsible for providing policy direction, budget approval, and other high-level decisions for the Project. The Joint Board also facilitates a government-to-government relationship between the two tribal governments and the other three Initiating Governments. Per the organizational structure, the Joint Board was also responsible for approving the WMP following Planning Unit adoption and prior to final approval by Whatcom County.

Officials from each of the Initiating Governments also form a Management Team and a Staff Team. The two teams are responsible for carrying out the Joint Board’s directives and coordinating the implementation activities of the Initiating Government agencies, with the Management Team (consisting of leadership-level agency staff) receiving instruction from the Joint Board and supervising the Staff Team’s work. During the development of the WMP, several other technical teams provided expertise and technical support for the Planning Unit.

The Project’s Planning Unit provides a venue for engagement with non-governmental stakeholders and agencies that are not Initiating Governments. The organizational structure (as depicted in the 1999 Interlocal Agreement) tasks the Planning Unit with “facilitat[ing] the

contribution of knowledge, interests, technical expertise, funding, equipment, and other resources towards the development and production of the Watershed Plan,” and then “recommend[ing] plan approval” (WRIA 1 Watershed Management Project 1999). The Planning Unit consists of representatives from a number of government agencies and non-governmental interests; the non-governmental interests (and some government agencies) are further organized into interest-based caucuses (such as agriculture, environment, or small cities), which then select representatives to the full Planning Unit meetings.

In October 1998, four of the five Initiating Governments signed a Memorandum of Agreement (MOA) formalizing their partnership in the WRIA 1 Project (the Nooksack Tribe did not sign the MOA). The Initiating Governments designed and implemented the project’s organizational structure in 1999, and the Planning Unit and Joint Board subsequently adopted a Scope of Work in March 2000. Project participants elected to include water quantity and all three optional planning elements in their Scope of Work, finding that the four topics were “inseparable.” The Planning Unit adopted the WRIA 1 Watershed Management Plan in March 2005, and the Whatcom County legislature approved the Plan in June of that year. Phase 4 work began in June 2006, and the WRIA 1 Project completed its DIP and accompanying monitoring plan in July 2007.

In the years following the completion of the DIP, the Initiating Governments oversaw the implementation of several items in the WMP and DIP. One of the earliest actions was a series of pilot negotiations regarding water supply and water rights for the Bertrand Creek and Nooksack Forks sub-basins. Other work has included the development of a surface water budget, a groundwater model, and a subsequent work plan known as the *Lower Nooksack Strategy*. During

this time, the Initiating Governments have continued to regularly coordinate and manage activities through the Joint Board.

Planning Unit meetings did not occur for a four-year period starting in 2009, but the group reconvened in 2013 after a citizen request to the Whatcom County Commission. Some of the same agencies and non-governmental interest are participating in this second iteration of the Planning Unit, but many of the organizations or caucuses are represented by new individuals. Several organizations have also declined to attend meetings. Whatcom County provides facilitation and management for the Planning Unit, and continues to act as the Project's Lead Agency.

Throughout the course of its work, the WRIA 1 Project has had significant interaction with the WRIA 1 salmon recovery process under Washington's Salmon Recovery Act. A number of agencies participate in both programs, and several Joint Board members also sit on the WRIA 1 Salmon Recovery Board. In recognition of this duplication, the two Boards began meeting simultaneously in 2009. As of late 2016, the two efforts were finalizing an arrangement that would dissolve the separate Boards in favor of a single Watershed Management Board. Participants intend for this new Board to coordinate both water resource and salmon recovery efforts in a more holistic and coordinated manner.

### **San Juan (WRIA 2)**

WRIA 2 encompasses the San Juan Islands in northwestern Washington. The archipelago consists of several hundred islands and rocks, the largest of which are San Juan, Orcas, Lopez, Shaw, Blakely, and Decatur. Collectively, the Islands encompass 177 square miles of land. The boundaries of WRIA 2 also correspond to the boundaries of San Juan County. Island topography is made up of primarily steep terrain, and the islands collectively include approximately 408

miles of coastline. The Islands' coastline and nearshore areas serve as habitat for a variety of salmonids (including chinook and an introduced run of chum), though salmon habitat in the Islands' freshwater streams is fairly limited.

Annual precipitation across WRIA 2 varies with elevation, ranging from 45 inches per year at the top of Mt. Constitution (elevation 2,398 feet) on Orcas Island to 19 inches per year (near sea level) on southern Lopez Island. The Islands' location east of Vancouver Island means that the WRIA is in a rain shadow, and the area receives less precipitation than many nearby areas. The combination of steep topography and geology also leads to low rates of aquifer recharge, and most streams are ephemeral or intermittent. Most residents get their water from a combination of surface water systems, community wells, and private wells. Rainwater catchment and desalinization for water supply have also received attention. Seawater intrusion is also a concern for nearshore aquifers.

WRIA 2's estimated total population (July 2015) is 16,252 with a 6.6% growth rate between 2005 and 2015 (WA ESD 2015). Approximately twenty islands are inhabited on a seasonal or year-round basis. The Islands' only incorporated municipality is Friday Harbor, with an estimated population (July 2015) of 2,215. Dominant land uses throughout the Islands include rural-farm-forest, forestry, agriculture, and land conservation/recreation. Tourism and related services have been the core of the Islands' economy since the 1970s; prior to this date, farming and fishing were the two most important economic sectors (WA ESD).

In WRIA 2, collaborative approaches to watershed planning began in 1997 with the formation of the Watershed Management Committee (later renamed the Water Resources Management Committee). This committee included citizens and representatives from several agencies, and the group had the goal of developing an action plan for surface water quality

management. The Committee ultimately released the *San Juan County Watershed Action Plan* in August 2000, with water quality and habitat recommendations that aligned with the requirements in the Watershed Planning Act.

The Committee then took on the role of the Planning Unit under the Act's framework, and the San Juan County Commissioners approved the Committee's WMP (officially titled the *San Juan County Water Resource Management Plan*) in October 2004. This document characterizes itself and the earlier Action Plan as "basically volume 1 and 2 of a management strategy for water resources in the County" (San Juan County WRMC 2004, p. vi). Building on content of the Action Plan, early implementation work, and the Phase 2 assessments under the Act, the Water Resource Management Plan includes recommendations for instream flows, the creation of a Water Resource Review Board, additional monitoring, and other actions related to water supply.

Phase 4 began soon after the approval of the Water Resource Management Plan, and the Committee completed its DIP in January 2006. The WRMC continues to meet on a regular basis. Over the course program's lifespan, the County has also periodically convened several subcommittees to address local water supply tasks. To date, participants have carried out most of the main recommendations in both the WMP and DIP (Kamin 2017). Much of the work in WRIA 2 has focused on water supply assessments (and associated monitoring), sub-basin management plans for water supply, and a number of changes to local ordinances (Kamin 2017).

### **Entiat (WRIA 46)**

The Entiat watershed is located in the eastern foothills of the Cascade Mountains in north-central Washington, encompassing approximately 478 square miles within the Upper Columbia River Basin. All of the watershed's land area lies within Chelan County. The WRIA's namesake

Entiat River flows 43 miles from its glacial-fed headwaters to its outflow at Columbia River.

Other prominent surface waters include the North Fork Entiat and Mad Rivers (both of which of tributaries of the mainstem Entiat).

Elevation within the WRIA ranges from 9,249 feet at the watershed's northwestern corner to 713 feet at mouth of the Entiat River. Average annual precipitation increases with elevation, ranging from nearly sixty inches at the Entiat River's headwaters to less than 10 inches along the Columbia River. The upper elevations also see extensive snow accumulation. The Entiat watershed is also part of the range for the ESA-listed chinook salmon, steelhead, and bull trout.

The US Forest Service is the largest landowner in the Entiat watershed, managing approximately 83% of the WRIA's land area. The watershed's largest land uses by acreage include timber, range, and reserves for wilderness or wildlife habitat; a variety of recreational uses also occur throughout the area. Agricultural land is also present along the lower reaches of the Entiat River, with tree fruits (particularly pears and apples) as the main crop. The watershed's largest municipality is the City of Entiat, located on the Columbia River, with a July 2015 estimated population of 1,182. A number of seasonal and year-round landowners also own property in the unincorporated lower watershed.

Collaborative watershed planning in the Entiat region first occurred in the late 1970s, when a group of local entities convened a workgroup to address concerns about large-scale forest fires accompanied by heavy rains and landslides. This activity led to the creation of the multi-agency-authored *Entiat Cooperative River Basin Study* (1979). In 1993, a group of local landowners and representatives from the Forest Service, Chelan County Conservation District, and Natural Resource Conservation Service (NRCS) convened a planning group to address stream flows, endangered species, and other resource management topics. This group also sought to improve

communication, reduce conflict, and reach consensus on the topics of interest. In mid-1994 the group decided to organize its work using the NRCS's Coordinated Resource Management Plan Model (CRMP) model. Between 1994 and 1998 the group carried out extensive data collection activities and made a number of recommendations for riparian and channel restoration, releasing a *Draft Coordinated Resource Management Plan* in 1999.

In 1998, following the passage of the Watershed Planning Act, the CRMP group reorganized itself as the WRIA 46 Planning Unit and began working under the Act's framework. At this time, the Initiating Governments (City of Entiat, Entiat Irrigation District, and Chelan County) chose the Chelan County Conservation District as the Lead Agency. In 2002, the Planning Unit released a draft WRIA 46 Management Plan (which also served as the final version of the *Coordinated Resource Management Plan* under CREP). The Planning Unit released the final version of its Management Plan in January 2004, and the Chelan County Commissioners formally adopted the Plan in May of that year. Phase 4 implementation work began in February 2005, and the Planning Unit completed its DIP 12 months later.

Along with the mandatory water quantity component, the WRIA 46 Management Plan included the optional instream flow, water quality, and habitat topics; both the Plan and the DIP contained numerous recommendations related to each of these planning components. The Plan included instream flow recommendations (developed by Planning Unit members using the Instream Flow Incremental Flow Methodology) that formed the basis for instream flow rules adopted by Ecology in 2005. The Plan also outlined the Planning Unit's recommendations for a "water reserve" to be set aside for future residential, agricultural, and commercial uses.

In the years since the completion of the DIP, a number of entities have implemented various pieces of the WMP, with a particular emphasis on on-the-ground salmon habitat

restoration projects; this work has included installation of large woody debris, riparian plantings, and surface to well conversions (WA RCO & USFWS 2017; CCD 2012; CCD 2013). The Planning Unit has continued to hold quarterly meetings, and the Chelan County Conservation District (now known as the Cascadia Conservation District) has retained its role Lead Agency and facilitator for Planning Unit meetings. Planning Unit meetings continue to be attended by a variety of citizens and agency representatives. In addition to the full plenary group, the Planning Unit also includes a landowner subcommittee and a habitat/technical subcommittee.

Due to its position in the Upper Columbia River Basin, the Entiat Watershed falls within the work area of the Upper Columbia Salmon Recovery Board, the Yakama Fish Accords, and the Biological Opinion (BiOp) for the Federal Columbia River Power System. Over the years, the membership on the Planning Unit and the implementation of the Entiat WMP has intersected with all of these broader efforts. In 2010, the Entiat began working under an additional planning framework known as the Intensively Monitored Watershed (IMW) Program. The IMW includes an implementation schedule for several pulses of major projects over a ten year period, with associated effectiveness monitoring through annual data collection (CCD n.d.).

### **Spokane River watersheds (WRIAs 54, 55, 56, and 57)**

The Spokane River watershed is located in eastern Washington, encompassing over 2,500 square miles of land between the Idaho border and the Spokane River's confluence with the Columbia. This region includes four WRIAs: Lower Spokane (54), Little Spokane (55), Hangman (56), and Middle Spokane (57) across five counties (Spokane, Lincoln, Steven, Pend Oreille, and Whitman). Other prominent jurisdictions include the Spokane Indian Reservation and Fairchild Airforce Base. The Hangman, Little, and Middle Spokane watersheds extend into Idaho, but those areas are not part of the Spokane River planning area.

The Spokane watershed occupies an inland plateau in the eastern part of the Columbia Basin. The watershed is located in a climatic and vegetation transition zone, with desert in the western part of the watershed gradually transitioning to forested mountains on the Idaho border. Several dams have been erected on the Spokane River's mainstem. Major land uses include urban, rural residential, agriculture, and forestlands. The City of Spokane is the largest municipality in the watershed, with an estimated population of 213,272 (July 2015). Other cities include Spokane Valley, Airway Heights, Medical Lake, Liberty Lake, and Deer Park.

The Spokane River WRIsAs initially created three separate WMPs and DIPs; WRIsAs 54 and 56 each have their own Plan, and participants created one combined Plan for WRIsAs 55 and 57. Spokane County acted as the Lead Agency for WRIsAs 54 and 55/57, and the Spokane County Conservation District was the Lead Agency for WRIA 56. The City of Spokane also serves as an Initiating Government for all three planning efforts.

In each area, the Initiating Governments convened a Planning Unit with representation from a number of agencies, non-governmental groups, and citizens; each Planning Unit had its own enabling MOA and a separate planning process, but many entities participated in multiple groups. WRIA 55/57 also included a West Branch Little Spokane River Committee that created its own Watershed Implementation Plan. Many of these West Branch recommendations were ultimately incorporated into the WRIA 55/57 DIP. The table on the following page shows the Initiating Governments, Lead Agency, planning elements, and key milestones for work in each individual WRIA:

WRIAs	Initiating Governments	Lead Agency	Optional Planning elements	WMP Adopted (Planning Unit)	WMP Approved (Counties)	DIP Complete
54	City of Spokane, Ecology, Lincoln County, Spokane County, Spokane Tribe, Stevens County, Stevens County PUD #1	Spokane County	Instream flow, quality	June 2008	October 2009	December 2010
55/57	City of Spokane, Pend Oreille County, Spokane County, Stevens County, Vera Water & Power, Whitworth Water District	Spokane County	Instream flow	July 2005	January 2006	February 2008
56	City of Spokane, Hangman Hills Water District #15, Spokane County, Spokane County Conservation District, Whitman County	Spokane County Conservation District	Habitat, instream flow, quality, storage	May 2005	September 2005	February 2008

At the beginning of Phase 4, each Planning Unit reorganized itself into a *Watershed Implementation Team* (WIT). Each WIT developed its planning area's DIP and then continued to meet as Phase 4 proceeded; these new groups' memberships, decision-making processes, and roles were very similar to those of the Planning Units they had replaced. The MOA enabling the WRIA 54 WIT states that the WIT was "formed for the purpose of implementing the WRIA 54

(Lower Spokane) Watershed Plan” (p. 3). Meanwhile, the implementation matrices in the WRIA 55/57 and 56 Plans explicitly identify discrete actions for the WITs to carry out as part of implementation, listed separately from the actions to be carried out by individual WIT members. Many of these action items deal with developing recommendations, seeking additional funding, communicating with specific entities or stakeholder groups, or reviewing projects and priorities. Since the beginning of Phase 4, the WITs and individual participants have been very active in implementing projects and securing grants.

In 2010, members of the 56 and 55/57 WITs began meeting together in a *Joint Implementation Team*. The WRIA 54 WIT also began participating in 2014, creating a Joint Team for the entire Spokane River watershed. This Joint Team’s functions are similar to the functions of the individual WIT, but with a regional focus (though the existence of a Joint Team does not preclude discussion of WRIA-specific issues). Membership on the Joint Team consists of many (but not all) of the participants on the individual Joint Teams, with consistent attendance by a group of agencies, water/utility districts, and citizens. The Joint Team continues to meet on a regular basis. To date, funding contributions from participating agencies have helped support the Joint Team’s meetings and operational costs.

To date, Spokane watershed planning participants have implemented a wide array of projects and programs. These outputs have included restoration projects, hydrogeologic studies, irrigation efficiency improvements, leak detection, a water demand model for Spokane County, and a variety of additional studies and monitoring efforts looking at water quality, water storage, and instream flow (SCCD 2017). Working through an Ecology grant, several county governments are also jointly implementing a water bank feasibility study for WRIA 55.

