STREAMFLOW RESTORATION COMPETITIVE GRANTS, 2020

Guidance for project applicants

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December 2019 updates to publication:

- Grant funding opportunity will now open January 30, 2020.
- Newly published Water Quality QAPP template for a MAR feasibility study (Publication 19-10-050) now referenced in Appendix D.

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A MAP OF THE DEPARTMENT OF ECOLOGY'S REGIONS IS INCLUDED IN APPENDIX A.

COVER PHOTO: STREAM FLOWING NEAR A FARM IN NORTHWEST WASHINGTON.

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WATER RESOURCES PROGRAM
WASHINGTON STATE DEPARTMENT OF ECOLOGY
OLYMPIA, WASHINGTON

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Table 1. Acronyms and abbreviations.

Acronym or Abbreviation	Meaning
EAGL	Ecology Administration of Grants and Loans
Ecology	Washington State Department of Ecology
MAR	Managed Aquifer Recharge
O&M	Operation and Maintenance
QAPP	Quality Assurance Project Plan
RCO	Washington Recreation and Conservation Office
RCW	Revised Code of Washington
SAW	Secure Access Washington
SWSL	Surface Water Source Limitation
TMDL	Total Maximum Daily Load
WAC	Washington State Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

Abstract

This guidance is intended to aid grant applicants in developing complete project proposals for competitive Streamflow Restoration grant funding. This document also provides applicants with information and assistance in completing the application.

This grant round will provide up to $22 million for eligible projects.

The grant funding opportunity opens on January 30, 2020, and closes on March 31, 2020, at 5:00 p.m.

River flowing in a forest near the mountains.

Chapter 1: Overview

Chapter 90.94 RCW (2018) directed the Washington State Department of Ecology (Ecology) to "…implement a program to restore and enhance streamflows by fulfilling obligations under this act to develop and implement plans to restore streamflows to levels necessary to support robust, healthy, and sustainable salmon populations." To establish a regulatory framework for a grant initiative that fulfills the obligation above, Ecology adopted chapter 173-566 WAC—Streamflow Restoration Funding. This competitive grants initiative is designed to encourage and support the local implementation of projects and actions that meet the purposes of chapter 90.94 RCW.

The purpose of this Streamflow Restoration Competitive Grants Guidance is to aid grant applicants in developing complete project proposals. It also provides information on completing the application process for this statewide competitive grants initiative.

Critical grant funding considerations

Potential grant applicants should keep the following in mind as they prepare to submit an application for competitive funding:

- This is a statewide competitive grants initiative.
  - The funds that the Legislature has provided to Ecology for this purpose are limited. Consequently, demand for these competitive grants is likely to exceed available funding.
  - There is no guarantee that any application or project proposal will be funded, including those projects identified in adopted watershed plans or a rulemaking under RCW 90.94.020 or 030.
  - Applicants may choose to divide large, expensive, or complex projects into phases, particularly when each phase can be shown to provide streamflow or improved instream resource benefits. Ecology also reserves the right to divide a proposal into phases due to funding availability, priorities, or other considerations. Please note, however, funding for one phase does not imply any intent, nor does it create any obligation by Ecology to provide additional funding for any subsequent project phases.
- The types of projects prioritized from one grant round to the next may vary. Projects that would quantitatively improve streamflows are the highest single priority factor for funding in this grant round. *Funding Priorities are additive*, so projects benefit from meeting *multiple* Funding Priorities. Numerous other criteria are also considered in final project scores (see Chapter 3).
  - Projects that neither increase streamflow nor benefit instream resources are unlikely to receive funding during this round unless they are a critical component or phase of a broader project that does increase streamflow or benefit instream resources.

For example: Feasibility studies alone do not provide streamflow benefits. Applicants proposing a feasibility study as part of a multi-phase project should describe anticipated streamflow benefits in later project phases, even if that phase is not currently being applied for in this grant round.

- In order to maximize their project's score and demonstrate that their project will be an effective use of limited state funds, applicants are strongly encouraged to quantify the project's impacts with verifiable data. Quantitative project impacts can be measured through monitoring or estimated through modeling. Examples include acre-feet of new water per year, linear feet of riparian zone restored, or acres of floodplain or meadow restored.

- In scoring projects and assessing potential benefits, Ecology will consider any *adverse* impacts from the proposal. Examples of adverse impacts include degradation of natural streamflow processes or instream resources in both the source and receiving waterbodies.
- For projects that tailor restoration actions to natural, ecological, or streamflow conditions on or near the project site, applicants should consider and enable the desired project outcomes. Examples include considering process-based principles to address the root causes of degradation, with the goal of restoring ecological functions.
- Applicants are encouraged to consult with relevant watershed planning[1] and salmon recovery groups[2] (where applicable) to ensure their project aligns with the priorities and sequencing of projects in the watershed.
- Sustainable projects provide benefits for the lifetime of the project by design. Project benefits should be expected despite the projected impacts of climate change and drought. Projects resilient to climate change and drought are more likely to be successful.
- Applicants are encouraged to incorporate adaptive management principles into their project design and implementation. Adaptive management is a structured, iterative process of robust decision making in the face of uncertainty, with an aim of reducing uncertainty over time.
- Applications should identify the source(s) of any additional funding needed to fully implement the proposed project, including estimated costs for operations and maintenance, and adaptive management over the lifetime of the project. If such funding is needed but not yet secured, the application should include a detailed plan on how funding will be secured.
- Because this competitive grants initiative must make the best use of limited public funds, applicants should demonstrate that the proposed project provides benefits for a reasonable relative cost. The best way to demonstrate this is by providing examples of similar projects within a relevant area.

[1] https://ecology.wa.gov/Water-Shorelines/Water-supply/Streamflow-restoration/Streamflow-restoration-planning
[2] https://rco.wa.gov/salmon-recovery/managing-organizations/lead-entities/

- Projects are not required to provide match funding.
- Ecology reserves the right to require a feasibility study on any project. A feasibility study required by Ecology may be included as the first phase of a larger project application. An offer by Ecology to fund a feasibility study does not imply any intent, nor does it create any obligation by Ecology, to provide additional funding for any subsequent project phases.
- In the event that Ecology makes an offer to fund a given application, Ecology and the applicant will negotiate the scope of work and corresponding budget. There is no guarantee of any funding until an agreement is finalized. Final agreement budgets may differ from the amount requested in the application.
- Work done prior to signature on the grant agreement is at the applicant's own risk.
- While project elements required under statute, rule, ordinance, or court order (except pursuant to chapter 90.94 RCW) are ineligible for funding, additional project elements that are not required by law may be eligible.
- The timeframe for completing a project should align with the needs and complexity of the project.
- The applicant is responsible for obtaining and complying with all permits necessary to execute the project.
- Requirements for property acquisition projects will align with the Washington Recreation and Conservation Office's (RCO) Acquisition Manual 3.[3]
- Grant recipients shall comply fully with all applicable federal, state and local laws, orders, regulations, and permits related to the grant agreement.

Completing an application

Applicants must accurately describe their proposed project and corresponding benefits. Ecology expects all project applications to follow the instructions below:

- All applications must be submitted between January 30, 2020, and March 31, 2020, at 5:00 p.m.
- Applicants must submit their applications through the Ecology Administration of Grants and Loans (EAGL) system.
  - EAGL is an automated system for processing applications.
  - Applications without all mandatory elements are incomplete.
  - Incomplete applications will not be accepted by the EAGL automated system.
  - Therefore, incomplete applications will not be reviewed.

[3] https://rco.wa.gov/wp-content/uploads/2019/07/Manual3.pdf

- All submitted materials should be easy to read and understand.
  - Give clear, complete, and concise answers to all questions.
  - Write in complete sentences and avoid ambiguous statements.
- Submit all supporting information and evidence needed to evaluate the project proposal.
- The more relevant information and evidence provided by the applicant, the stronger the application is likely to be. Applications without relevant information and evidence will score poorly.
- Address all relevant items identified in the grant guidance and scoring guide.
- Provide documentation and citations to support your responses to application questions. If referring to a large document, upload only the relevant portions or provide clear information on where in the document the reference is located.
- Identify the documented streamflow, fish, or other instream resource problem(s) that your project would address, and provide citations or other evidence. Examples of evidence include referencing streamflow records, citing a specific concern in a salmon recovery plan, or referring to documented fish conservation status.[4]
- Describe why you selected the proposed project over other potential solutions to address the local issues the application identifies.
- A project includes all phases of work, even if an application is only for a single phase of the entire project.
- Ineligible projects may include elements or phases that are eligible. Applicants must clearly show how those elements or phases are eligible.
- Demonstrate that the project is well thought out:
  - Explain how you will determine and demonstrate any project benefits. For example, how you calculated a quantified estimate of the ultimate streamflow benefits of the project as a whole (alone or after the completion of all phases) in terms of both the amount and location of flow added to the stream.
  - Include a well-defined scope of work that has goals, objectives, timelines, and measurable outcomes.
  - Describe all steps and tasks needed for the project such as permits, approvals, or the cooperation of landowners or agencies.
  - Demonstrate that the funds will be well invested in this local project.

[4] Washington Department of Fish & Wildlife (WDFW) has several sources for this information including SalmonScape, Salmon Conservation—Recovery (SCORE), Priority Habitat and Species (PHS on the Web), or contacting the local WDFW habitat biologists.

- Demonstrate readiness to proceed:
  - Show that preliminary measures have been taken to prepare for implementing the proposed project. Demonstrate knowledge of any potential barriers and the means for addressing those barriers.
  - Provide a timeline for implementation.
  - Ecology expects that project agreements will be finalized within one year of offer, and that project phases will be completed within three years of the agreement.
- Demonstrate local support:
  - Robust, ongoing engagement from relevant stakeholders is important for project success. Demonstrate that the project has broad support from the community, agency partners, stakeholder groups, and watershed planning groups (if applicable) including any disadvantaged communities. Include letters of support as documentation. If communities will experience any negative impacts from the project, demonstrate that there has been outreach, and negative impacts will be minimized in the project design (see Appendix C).
  - Applicants proposing to purchase property or complete work on private property must include the Landowner Acknowledgement Form[5] with their application.

Eligible applicants

Applicants eligible for funding include Washington state agencies, local governments and quasi-governments within Washington state, agencies of the federal government, tribal governments with reservation lands or treaty rights within Washington, and non-profit organizations.[6]

Ecology will evaluate all complete competitive grant applications that have been submitted between January 30, 2020, and the grants round deadline on March 31, 2020, at 5:00 p.m. Eligibility of the applicant and the proposed project will be determined according to WAC 173-566-030. For any eligible application, Ecology will then use the detailed scoring criteria described in Chapter 3.

[5] https://fortress.wa.gov/ecy/publications/SummaryPages/ECY070614.html
[6] WAC 173-566-030

Additional guidance and authorities

- Administrative Requirements for Recipients of Ecology Grants and Loans Managed in EAGL.[7]
- Chapter 173-566 WAC.[8]
- Chapter 90.94 RCW.[9]
- Washington Recreation and Conservation Office's (RCO) Acquisition Manual 3.[10]

See Appendix C for additional reference information.

[7] https://fortress.wa.gov/ecy/publications/summarypages/1701004.html
[8] https://app.leg.wa.gov/WAC/default.aspx?cite=173-566&full=true
[9] https://app.leg.wa.gov/RCW/default.aspx?cite=90.94&full=true
[10] https://rco.wa.gov/wp-content/uploads/2019/07/Manual3.pdf

Chapter 2: Application considerations for project types

This chapter provides specific considerations for the eligible project types identified in chapter 173-566 WAC Streamflow Restoration Funding, as well as information on project elements. Other project types may also be eligible if they meet the intent of chapter 90.94 RCW. This information is provided so all potential applicants have the same information as they decide whether to submit an application for competitive grant funding.

Eligible project types include but are not limited to:

- Water right acquisitions.
- Water storage.
- Altered water management or infrastructure.
- Watershed function, riparian, and fish habitat improvements.
- Environmental monitoring.
- Feasibility studies.

Requirements by project type

Water right acquisitions

- Applicant must attend a pre-application meeting.
- Water right purpose of use changed to instream flow.
- Permanently convey the right to Ecology's Trust Water Rights Program.

Altered water management or infrastructure

Conservation and water use efficiency projects must permanently convey saved water to Ecology's Trust Water Rights Program, and create:

- Permanent instream flow improvement; *or*
- Access to new water supplies when identified in a watershed plan adopted under chapter 90.94 RCW.

Environmental monitoring

If environmental monitoring projects are funded, recipients will need to submit a Quality Assurance Project Plan for the project and meet Ecology standards for submitting environmental monitoring data (see Ecology Publication No. 17-11-013).

Water storage

A managed aquifer recharge project requires a feasibility study.

Watershed function, riparian, and fish habitat improvements

Projects involving the use or acquisition of private property must show landowner awareness by including a Landowner Acknowledgement Form (see Chapter 1) with their application.

Feasibility studies

A feasibility study for a managed aquifer recharge project must follow special requirements (see Appendix D).

Other feasibility studies are eligible with no special requirements.

Water right acquisitions

Definition

Under the Streamflow Restoration Competitive Grants program, a water right acquisition project must change the water right purpose of use to instream flow under RCW 90.03.380 and result in the water right being permanently conveyed to Ecology, to be held and managed in the Trust Water Rights Program.

Purpose and primary environmental benefits

Ecology's interest in acquiring water rights is to increase streamflows to benefit vulnerable fish and wildlife by allowing the water to remain in the stream. Acquired water rights may also serve to offset the impacts of other water use.

Application requirements

All water right acquisition proposals require a pre-application meeting prior to applying for funding, as described on this page.

During the pre-application meeting, the Statewide Trust Water Coordinator and appropriate Ecology Section Manager will provide technical assistance and ensure that grant application requirements can be met.

At the conclusion of the meeting, or in an email to follow, the Coordinator will indicate whether or not the project appears eligible for Streamflow Restoration Competitive Grant funding. This response will only indicate eligibility based on the information provided during the pre-application

Pre-Application Meeting details

How to schedule a pre-application meeting:

> Send meeting requests to sfrwra@ecy.wa.gov prior to February 3, 2020.

Meeting requests submitted after February 3, 2020 will be scheduled dependent upon staff availability.

Address the request to Ecology's Statewide Trust Water Coordinator.

Include three (3) or more potential meeting dates and times. Plan for the meeting to take no more than 90 minutes.

At least one week prior to your confirmed meeting time, submit the following documentation:

1. A clear description of the project including the locations of the historical point of diversion and the stream reaches where the benefits are anticipated to occur.
2. The timing and quantity of additional streamflow (cubic feet per second) and volume (acre-feet) the project is anticipated to provide.
3. A proposed price in dollars per acre-foot and documentation supporting the price.
4. An executed change application or a signed declaration of project support by the water right holder (and the landowner (see Chapter 1), if they are different).

meeting, and it will not determine how competitive the project may be for funding.

The materials required for the pre-application meeting will be components of the later application submittal if the applicant chooses to proceed with requesting Streamflow Restoration Competitive Grant funding.

Other information

Water right acquisition proposals must identify the water right(s) for which the purpose of use has or will be changed to instream flow under RCW 90.03.380. Ecology will make a tentative determination of the extent and validity of the water right during the change process. Payment will be based on:

- Quantity of water found to be valid under the right.
- Completion of the change to the purpose of use.
- Final conveyance of the equity interest of the water right (or portion of the water right) to Ecology by deed or other contractual means.

Acquisition of a groundwater right is eligible for funding, but it may be difficult to estimate streamflow benefits of such projects. Applicants are encouraged to provide well logs, pump records, and any applicable groundwater studies in their application.

Water storage

Definition:

Water storage projects, including "retiming" projects, involve the capture of water when it is available (such as during high-flow periods) and the later use or release of that water when needed, thus increasing streamflow. Examples of water storage projects that are eligible for grant funding include, but are not limited to:

- Active Surface Storage: Depressions in the land surface can be used or created to serve as surface storage reservoirs or ponds. The reservoir can be lined to prevent seepage loss and allow the maximum retention of stored water (minus evaporative loss) until it is actively released back into a stream. In some instances, Ecology may require a phased approach that includes a feasibility study for this type of project.
- Managed Aquifer Recharge: Managed Aquifer Recharge (MAR) is the purposeful recharge of water into aquifers for eventual groundwater discharge to benefit streamflows. MAR projects can augment streamflow by increasing surficial aquifer discharges to the streams beyond what occurs under current conditions. MAR projects typically involve diverting a small fraction of high-flow seasonal streamflows to spreading basins or other infiltration facilities in the adjacent floodplain or uplands. This diverted surface water infiltrates into a shallow aquifer, migrates through the aquifer, and ultimately discharges back to surface water as re-timed groundwater base flow.
    - All MAR projects require a phased approach, which includes a feasibility study that addresses both Ecology's Water Resource and Water Quality program requirements. Further information and requirements are provided in "MAR Feasibility Study" in this section and Appendix D.
- Cisterns: A cistern is a waterproof receptacle for holding water. They have historically been built to catch and store rainwater and then used for irrigation or other non-potable domestic use. Below-ground cisterns are distinguished from wells by their waterproof linings.

There are a wide variety of possible water storage projects. Applications that provide evidence that the project would quantitatively improve streamflows as well as enhance instream resources and watershed functions are likely to score well in this competitive grants program.

Purpose and primary ecological benefits:

Water storage can have many benefits depending on location and design. Projects that artificially recharge groundwater aquifers can supplement base flows where groundwater discharges to the surface water. Surface water benefits can result from retiming excess flows from high-flow events to supplement streamflows during low-flow periods. This

benefit can occur through passive release from groundwater or through timed release from above-ground reservoirs. When aquifer storage is used, significant streamflow temperature reductions may also result where high temperatures are a limiting factor for salmonid migration and survival. Water storage could also be used to provide water for out-of-stream uses, which could reduce the impacts of that water use on streamflows and water temperature.

Other information:

MAR projects do not require National Pollutant Discharge Elimination System or State Waste Discharge permits if they are not introducing pollutants into surface or groundwater. While no Water Quality Program permits are issued for MAR projects, water quality anti-degradation rules still apply, and waters of the state need to be protected. The feasibility study requirements (described in Appendix D) are designed to allow projects to proceed without the need for a Water Quality Program permit and in acknowledgement of the water quality benefits of having more water in streams. If feasibility study results indicate unanticipated water quality issues, the Water Quality Program may re-evaluate the assumption that the project will not require a water quality permit.

Application requirements:

MAR project proposals are required to include a phased approach. The first phase should include a study examining project feasibility and water quality issues. Feasibility studies may be completed prior to application for the grant and submitted as part of the application. At Ecology's discretion, previously completed feasibility studies may require additional study elements in order to provide necessary information. Elements of a MAR feasibility study are detailed in Appendix D.

Altered water management or infrastructure

Definition:

Water management and infrastructure improvement projects may involve changes in how and when water is diverted, withdrawn, conveyed, or used to benefit streamflows and instream resources. Examples include conservation and efficiency projects like diversion modifications, lining and piping ditches, sprinkler conversion, and other irrigation efficiencies, as well as source switches, and streamflow retiming projects. Innovative methods will be considered.

Purpose and primary ecological benefits:

Although there are a wide variety of projects of this type, in general, these types of projects reduce water waste, such as what may be lost to evaporation, or in some cases, leakage, and instead use water more efficiently. For example, irrigation efficiencies can benefit crops by providing water when it is needed while conserving excess water that can tax the plants, leach out nutrients from the soil, and reduce the effectiveness of fertilizers. However, some aspects of some conservation measures result in unforeseen consequences. Ditch lining, for example, may result in less water being used to irrigate crops, but may also reduce water seeping from the ditches into the ground, subsequently reducing streamflow. The balance of water that remains or ends up in a stream to benefit flows and support natural processes determines the true benefits conservation measures provide.

Application requirements:

Applicants proposing altered water management or infrastructure projects must include in their proposal, per WAC 173-566-220, sufficient provisions and protections to ensure that completed projects provide:

- Permanent streamflow improvement; and/*or*
- Access to new water supplies when the project is identified in a watershed plan adopted under RCW 90.94.020 or 90.94.030.

Conservation and water use efficiency projects must permanently convey the saved water to Ecology to be held in the Trust Water Rights Program for instream flow purposes.

Watershed function, riparian, and fish habitat improvement

Definition:

Watershed function as well as riparian and fish habitat improvement projects involve upland, riparian, or instream changes that restore and support natural watershed functions, benefitting threatened and endangered salmonids or other native aquatic species of concern. These projects may also result in an increase in streamflow, but (by design) they prioritize the habitat benefits and tend to have streamflow benefits that are harder to quantify than water right acquisitions or water storage projects. Projects that will quantitatively improve streamflow as well as provide benefits to instream resources will be scored based upon all benefits described in the application. Potentially eligible projects include but are not limited to:

- In-channel habitat improvements: Streambank restoration, gravel and woody structure augmentation, and channel re-meandering.
- Riparian restoration: Riparian planting to replace invasive species with native vegetation, providing future sources of woody debris; livestock exclusion fencing; removing creosoted wood and garbage; reducing impervious surfaces.
- Strategic land acquisition: Acquisitions, conversions, or easements that protect stream banks, promote a healthy riparian corridor, and preserve an area against future development. See Chapter 1 for the required landowner acknowledgement form.
- Levee modification: Levee removal or setback projects that change the slope, location, vegetation, or structure, *and* improve stream conditions.
- Floodplain modification: Projects intended to provide benefits for instream resources, such as increased rearing habitat, high-flow refuges, and increased species diversity.
- Large wood placement in incised streams: Strategic placement of large wood to improve fish habitat and water quality, and promote aggradation of incised stream channels.
- Fish passage: Removing or modifying barriers to allow fish passage and increase the range of salmonid access.
    - Removal of barriers required by law, executive order, or consent decree; or removing an upstream barrier when downstream barriers still exist are not eligible for funding under this grants program.
- Beaver dam analogs and/or beaver introduction: The construction of artificial beaver dams and/or the deliberate introduction of beaver or beaver dam analogues to increase the water table, channel complexity, species diversity, and salmonid rearing habitat. Additional permitting is required to handle and translocate beaver. Please contact your local WDFW habitat biologist to discuss applicable regulations.

Purpose and primary ecological benefits:

Projects of this type can improve watershed function, improve riparian and aquatic habitat, reduce water temperatures, improve food availability, provide fish protection from predators, restore spawning gravel, improve water quality, reduce flooding and flash flooding, increase dry season base flows, restore natural processes, foster species diversity, expand habitat for fish development, restore wildlife corridors, and promote ecological health.

Application requirements:

Applicants must clearly identify how the project will improve instream resources and include quantitative and/or qualitative estimates of the benefits provided.

Environmental monitoring

Definition:

Environmental monitoring is eligible for funding, including but not limited to:

- Stream gauging and groundwater monitoring directly related to restoring, maintaining, or enhancing streamflows or instream resources and values.
- Monitoring as a component of broader Streamflow Restoration Grant projects.

Purpose and primary ecological benefit:

Environmental monitoring provides the most benefit when it is used to develop or trigger actions that restore, maintain, or enhance streamflows and instream resources. One example is monitoring the benefits of a project to implement any contingency actions necessary to maintain project benefits.

Other information:

Environmental monitoring is most likely to be funded when incorporated into a broader project proposal. Projects that do not increase streamflow but do benefit instream resources are eligible; however, they will tend to be less competitive for this grant funding program.

Recipients must follow all grant requirements including submittal of a Quality Assurance Project Plan (QAPP) as described in Ecology Publication No. 17-11-013.[11]

[11] https://fortress.wa.gov/ecy/publications/summarypages/1711013.html

Feasibility studies

Definition:

A feasibility study is an assessment of the practicality or methodology of a proposed project, examining the factors that could either facilitate or hinder implementation. At a minimum, a feasibility study addresses:

- Cost.
- Technical hurdles or barriers.
- Permitting hurdles or barriers.
- Operations and maintenance needs and costs.
- Parties identified to undertake specified roles.
- Local support.
- Uncertainty in calculating estimated benefits.
- Project lifespan.
- Connections to existing projects and actions.

Purpose and primary ecological benefit:

Feasibility studies provide no benefit to streamflow or instream resources. Their benefit is in their ability to determine the viability of a project proposal while quantifying risks and benefits.

Application requirements:

Feasibility studies may be funded for any eligible project type. In addition, Ecology reserves the right to require a feasibility study for any project. A feasibility study required by Ecology may be included as the first phase of a larger project application. An offer to fund a feasibility study does not imply any intent or obligation to provide grants or otherwise fund any subsequent phases of the project.

Applicants interested in conducting a feasibility study are encouraged to apply for grant funds to complete that study as part of a multi-phased, well-developed project proposal. Such applications will be assessed based upon both the feasibility study and the additional phases of the project. These applications are likely to score more competitively than stand-alone feasibility studies. In general, stand-alone feasibility studies (i.e., those not embedded within a

well-developed project proposal) will not compete well in the evaluation, scoring, or ranking under this competitive grants program.

All managed aquifer recharge (MAR) project proposals are required to include a phased approach; the first phase must be comprised of a study examining project feasibility including water quality considerations as described in Appendix E.

Select ineligible project elements

An additional consideration for potential applicants is that there are projects and project components that are ineligible to receive competitive grant funding under this program. The following is a non-exhaustive list of common project elements that are ineligible for Streamflow Restoration Competitive Grants Program funding:

- Project elements previously funded by Ecology.
- Project elements that are otherwise required under statute, rule, ordinance, or court order, except pursuant to chapter 90.94 RCW.
- Costs to meet an individual or general National Pollutant Discharge Elimination System (NPDES) permit requirement.
- Capital equipment and major purchases made without prior approval from Ecology.
- Property purchases made without prior written approval from Ecology.
- Contaminated soils removal or remediation.
- Projects that conflict with other Ecology rules, projects, or guidance.
- Aquatic plant control for aesthetic purposes, navigational improvements, or any other reason that does not provide increased streamflow, nor benefit ecological functions or critical stream habitat.
- Operation and maintenance (O&M) costs.

More information on broader ineligibility considerations can be found in WAC 173-566-310 and *Administrative Requirements for Recipients of Ecology Grants and Loans Managed in EAGL* (the "Yellow Book").[12]

[12] https://fortress.wa.gov/ecy/publications/SummaryPages/1701004.html

Chapter 3: Applying for funding

The application period will open on January 30, 2020, and close on March 31, 2020, at 5 p.m. Applications will be reviewed and scored based on the guidance and scoring criteria described in this document. Ecology reserves the right to conduct additional assessments, including but not limited to on-site field evaluations, consultations with other agencies or entities, and feasibility.

As noted in Chapter 2, a pre-application consultation is required for all water right acquisitions projects. Applicants for other types of projects may request a pre-application meeting with Ecology staff if additional project-specific assistance is desired. Although Ecology cannot guarantee availability, requests will be accommodated to the extent possible.

> To request a pre-application meeting for another type of project, please email your request to sfrprjgrants@ecy.wa.gov, with a description of your proposal, and Ecology will contact you to discuss scheduling.

The application

Applicants submit their applications through the Ecology Administration of Grants and Loans (EAGL) system using a Secure Access Washington[13] account. The funding application is available by going to Ecology's Grants and Loans webpage[14] and following the instructions to access the funding application and the EAGL User's Manual.[15] Applicants without access to the electronic system should contact Ecology for assistance.

Information found in the project application is the basis for developing the funding agreement. Funding agreements for clearly defined project proposals that include a detailed scope of work, measurable objectives, O&M plans, and accurate budgets will take less time to develop. If the applicant makes significant changes to the scope of work after the award, Ecology reserves the right to withdraw or modify a funding offer.

[13] https://secureaccess.wa.gov/public/saw/pub/displayRegister.do
[14] https://ecology.wa.gov/About-us/How-we-operate/Grants-loans
[15] https://fortress.wa.gov/ecy/publications/summarypages/1701015.html

Scoring criteria: Streamflow restoration competitive grant proposal

Streamflow Restoration Competitive Grant applications will be reviewed for their technical merit and competitively scored using the following scoring criteria. A total of 300 points is available (see Table 2).

Table 2. Scoring overview.

Scoring Category	Points Possible
1. Funding priorities	100
2. Project benefits	40
3. Project budget	30
4. Project durability and resiliency	50
5. Project scope	30
6. Applicant readiness to proceed and project monitoring	20
7. Additional project considerations	30
Total	300

1. Funding priorities

Grant applications for projects that demonstrate the following will receive added priority under each of the following five independent criteria.

1.1. The proposed project is identified as an RCW 90.94.020 or 90.94.030 watershed plan that has been adopted by Ecology, or through a rulemaking process to meet the requirements of RCW 90.94.	Possible	Earned
True	20	
False	0	
1.2. The proposed project is located in an RCW 90.94.020 or RCW 90.94.030 WRIA, or is designated as an RCW 90.94.040 Metering Pilot Project Area.	Possible	Earned
True	20	
False	0	
1.3. The project quantitatively improves streamflows that will benefit instream resources (see Critical Grant Program Considerations in Chapter 1).	Possible	Earned
Strong evidence that the project will improve streamflows.	21–30	
Some evidence that the project will improve streamflows.	11–20	
Minimal evidence that the project will improve streamflows.	1–10	
No convincing evidence that the project will improve streamflows.	0	
1.4. The project benefits native fish or aquatic species of concern.	Possible	Earned
Strong evidence that the project will benefit native fish or aquatic species of concern.	11–20	
Some evidence that the project will benefit native fish or aquatic species of concern.	6–10	
Minimal evidence that the project will benefit native fish or aquatic species of concern.	1–5	
No convincing evidence that the project will benefit native fish or aquatic species of concern.	0	
1.5. The project benefits threatened or endangered salmonids.	Possible	Earned
Evidence that the project will benefit threatened and endangered salmonids.	10	
No evidence that the project will benefit threatened and endangered salmonids.	0	
1.1–1.5 Total Points	**100**	

2. Project benefits

Grant applications will demonstrate that the proposed project will provide benefits directly addressing the local causes of aquatic resource degradation, as well as water quality, and other environmental considerations.

2.1. The application has identified one or more local causes of aquatic resource degradation that the proposal is designed to address (fully or in part) and would have a meaningful effect on those problems without causing adverse impacts on the source or recipient watershed.	Possible	Earned
Strong evidence of a meaningful effect on the problem, and will not cause adverse impacts.	20	
Some evidence of a meaningful effect on the problem, and will not cause adverse impacts.	10	
Minimal evidence of a meaningful effect on the problem, and will not cause adverse impacts.	5	
No convincing evidence of a problem, or project will cause adverse impacts on source or recipient watershed.	0	
2.2. Evidence that the proposed project will provide benefits following project completion.	Possible	Earned
Evidence that the project will provide benefits immediately after project completion.	5	
Evidence that the project will provide benefits between 1 and 5 years after completion.	2	
Evidence that the project will provide benefits, but not for more than 5 years after completion.	1	
No evidence that the project will provide benefits.	0	
2.3. Proposed project and project benefits align with the needs of the community and other watershed planning processes (see "Consistency with Watershed and Community Planning Partner and Stakeholder Engagement" in Appendix C).	Possible	Earned
Strong evidence that project and project benefits align with watershed and community planning.	15	
Some evidence that project and project benefits align with watershed and community planning.	5	
No convincing evidence.	0	
2.1–2.3 Total Points	**40**	

3. Project budget

Grant applications will demonstrate that the proposed project will deliver benefits for instream resources that justify the project cost.

3.1. Cost estimates for proposed project and individual tasks are based upon defensible and relevant data.	Possible	Earned
Strong evidence that costs are based upon defensible and relevant data.	10	
Some evidence that costs are based upon defensible and relevant data.	5	
Minimal evidence that costs are based upon defensible and relevant data.	2	
No convincing evidence.	0	
3.2. Proposed project is an effective use of funds in terms of costs and benefits as demonstrated in the application.	**Possible**	**Earned**
Strong evidence that project provides benefits for a low relative cost.	10	
Strong evidence that project provides benefits for a reasonable relative cost.	8	
Strong evidence that project provides benefits for a high relative cost.	2	
No convincing evidence.	0	
3.3. Adequate funding has been identified for the completion of the project, as well as the operation, maintenance, monitoring, and contingency implementation costs over the lifetime of the project.	**Possible**	**Earned**
All funding has been applied for or secured.	10	
Some funding has been applied for or secured.	5	
No convincing evidence that funding has been applied for or secured.	0	
3.1–3.3 Total Points	**30**	

4. Project durability and resiliency

Grant applications will demonstrate that applicant has used a complete and well-defined set of criteria to determine the durability of the proposed project and its benefits, including considerations of climate change and drought.

4.1. Proposed project and project benefits are tailored to local conditions (see Critical Grant Program Considerations in Chapter 1).	Possible	Earned
Strong evidence that project and project benefits are tailored to the location.	15	
Some evidence that project and project benefits are tailored to the location.	5	
No convincing evidence that project and project benefits are tailored to the location.	0	
4.2. Proposed project is feasible and likely to succeed.	**Possible**	**Earned**
Strong evidence that project is feasible and likely to succeed.	10	
Some evidence that project is feasible and likely to succeed.	5	
No convincing evidence that project is feasible and likely to succeed.	0	
4.3. Proposed project benefits are sustainable.	**Possible**	**Earned**
Strong evidence that the project benefits are sustainable.	8	
Some evidence that the project benefits are sustainable.	4	
No convincing evidence that the project benefits are sustainable.	0	
4.4. The uncertainties and risks of the proposed project have been identified, evaluated, and minimized to the extent possible.	**Possible**	**Earned**
Strong evidence that risks have been identified, evaluated, and minimized.	9	
Some evidence that risks have been identified, evaluated, and minimized.	7	
Minimal evidence that risks have been identified, evaluated, and minimized.	4	
No convincing evidence that risks have been identified, evaluated, and minimized.	0	
4.5. Application demonstrates an understanding of how climate change may impact the proposed project, and identifies how it will address climate change and drought resilience for the project (see Critical Grant Program Considerations in Chapter 1 and Appendix C).	**Possible**	**Earned**
Strong evidence that project design considered climate change and drought resilience.	8	
Some evidence that project design considered climate change and drought resilience.	4	
No convincing evidence that project design considered climate change and drought resilience.	0	
4.1–4.5 Total Points	**50**	

5. Project scope

Grant applications for projects that demonstrate the following three independent criteria.

5.1. Application scope covers all elements necessary to develop, implement, and complete the project.	Possible	Earned
Strong evidence that project scope covers all necessary elements.	10	
Some evidence that project scope covers all necessary elements.	5	
No convincing evidence that project scope covers all necessary elements.	0	
5.2. Application provides sufficient maps, plans, and other documents for the project.	**Possible**	**Earned**
Detailed and useful maps, plans, and other documentation.	10	
Incomplete or insufficient maps, plans, and other documentation.	5	
No maps, plans, and/or other documentation.	0	
5.3. Project deliverables would provide clear evidence that project tasks have been successfully completed.	**Possible**	**Earned**
Strong evidence that project deliverables will provide clear evidence that project tasks have been successfully completed.	10	
Some evidence that project deliverables will provide clear evidence that project tasks have been successfully completed.	5	
No convincing evidence that project deliverables will provide clear evidence that project tasks have been successfully completed.	0	
5.1–5.3 Total Points	**30**	

6. Applicant readiness to proceed and project monitoring

Grant application demonstrates that applicant has sufficient staff, planning, and commitments in place to complete the project, monitor effectiveness, and sustain the benefits of this project.

6.1. Applicant has identified affected tribes, governments, and key stakeholders (see "Consistency with Watershed and Community Planning" in Appendix C) and gained their support for the proposed the project.	Possible	Earned
Letters of support from tribal governments, key partners, and stakeholders.	4	
No letters of support.	0	
6.2. Applicant is prepared to start on the proposed project (e.g., design and/or permitting work is already completed or underway).	Possible	Earned
Strong evidence of readiness to proceed with project.	4	
Some evidence of readiness to proceed with project.	3	
No convincing evidence to proceed with project.	0	
6.3. Application has demonstrated that sufficient staff, planning, and commitments are in place to ensure that the project will be completed, and adequately maintained. Applicant roles, responsibilities, and qualifications are adequate for the scope of work.	Possible	Earned
Strong evidence of experience completing similar projects.	8	
Some evidence of experience completing similar projects.	4	
No convincing evidence completing similar projects or there are concerns on file with the applicant.	0	
6.4. Proposed project will collect project monitoring data for project benefits.	Possible	Earned
Will provide monitoring data for project benefits.	4	
Will not provide monitoring or data for project benefits.	0	
6.1–6.4 Total Points	**20**	

7. Additional project considerations		
Grant application has identified all additional concerns or considerations relevant to the proposed project not directly addressed in previous scoring criteria.		
7.1. Project does not raise any legal or policy concerns, and applicant has identified and adequately addressed probable failure points, permitting concerns, inter-programmatic comments, multiple environmental goals, geographic considerations, concerns identified by technical reviewers and agency staff, and all additional concerns.	Possible	Earned
	1–30	
7.1 Total Points	**30**	
Total Points	**300**	

Appendix A: Department of Ecology Regional Offices

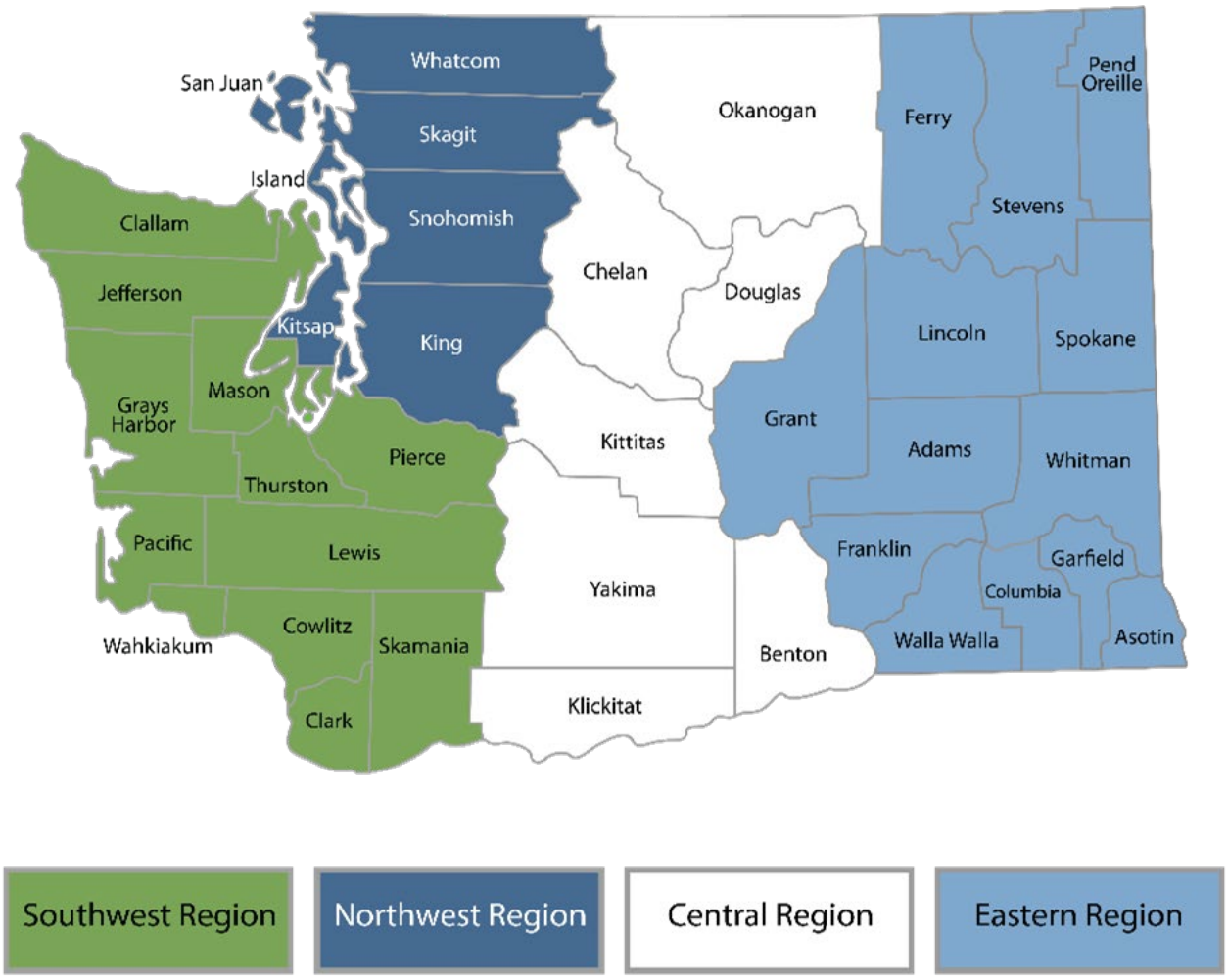

Figure 1. Map of counties served by region.

Table 3. Regional contact information.

Region	Counties served	Mailing address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum.	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom.	3190 160th Ave SE Bellevue, WA 98008	425-649-7000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima.	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman.	4601 N Monroe Spokane, WA 99205	509-329-3400

Appendix B: Priority Water Resource Inventory Areas (WRIAs)

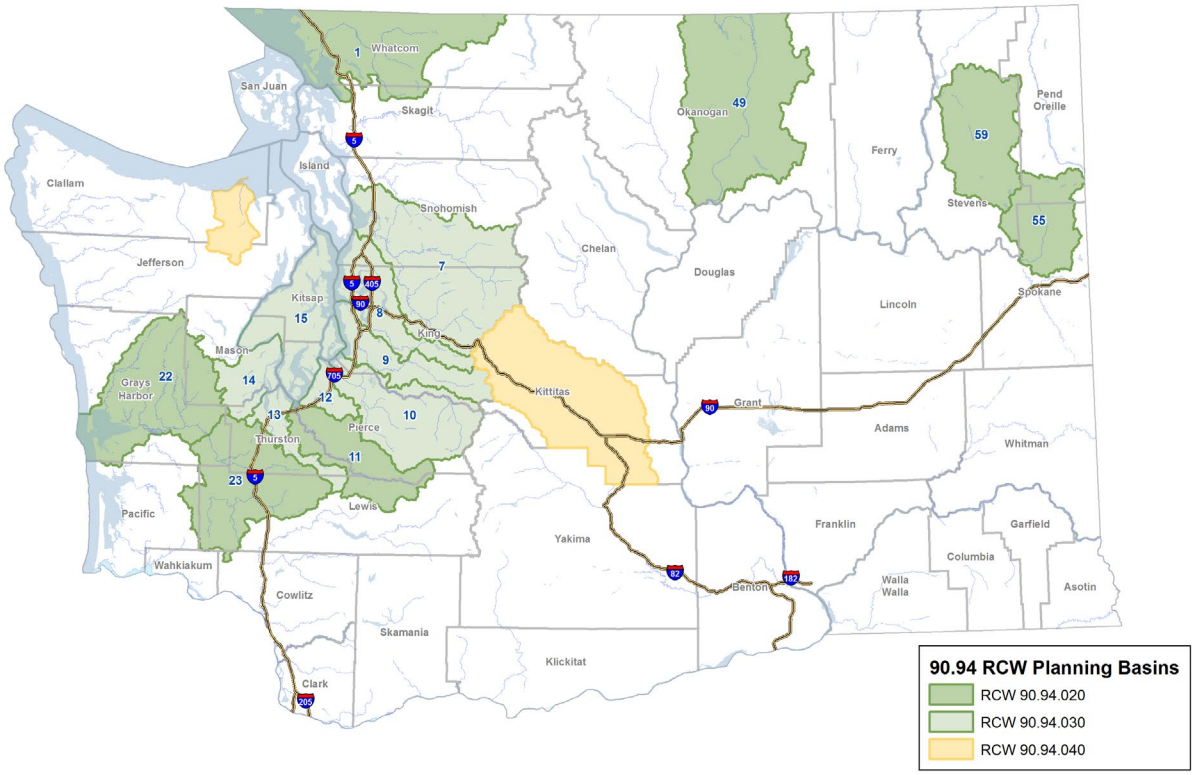

Figure 2. Basins prioritized for funding under chapter 90.94 RCW.

The following basins have priority for funding under chapter 173-566 WAC:

WRIA 1 — Nooksack
WRIA 7— Snohomish
WRIA 8 — Cedar-Sammamish
WRIA 9 — Duwamish-Green
WRIA 10 — Puyallup-White
WRIA 11 — Nisqually
WRIA 12 — Chambers-Clover
WRIA 13 — Deschutes
WRIA 14 — Kennedy-Goldsborough
WRIA 15 — Kitsap
WRIA 22 — Lower Chehalis
WRIA 23 — Upper Chehalis
WRIA 49 — Okanogan
WRIA 55 — Little Spokane
WRIA 59 — Colville

Additional priority watersheds include those areas of WRIAs 18 (the area regulated by chapter 173-518 WAC — Dungeness) and 39 (the Kittitas County water bank program area) designated in RCW 90.94.040 for metering pilot projects.

Appendix C: Reference Information for Project Applicants

Consistency with watershed and community planning

Riparian and wetland restoration can be a critical part of streamflow restoration habitat projects. The design of habitat restoration components should be consistent with watershed-specific planning and conditions and should be based on best practices identified in relevant manuals and guidance.

Salmon Recovery Lead Entities are key groups that support watershed-based habitat restoration across the state. It will be very important to ensure that projects are in harmony with the habitat recovery objectives of the Lead Entity.[16]

Other sources of habitat information are WDFW[17] and tribal biologists familiar with your region.[18]

Documents providing best practices for habitat project design and applicable science include:

- The Stream Habitat Restoration Guidelines[19] (2012).
- Ecology's Restoring Wetlands in Washington: A Guidebook for Wetland Restoration, Planning & Implementation[20] (1993).
- Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications[21] (2018).
- Riparian Ecosystems, Volume 2: Management Recommendations[22] (2018).
- Tribal government, partner government, and stakeholder engagement.

In order to maximize project scores, applicants are encouraged to engage with all Tribal governments, partner governments, and stakeholders, early and often. This engagement and coordination should occur prior to submitting an application for funding, during project development and implementation, and after a contract is signed. While letters of support from partners and stakeholders are important, robust and ongoing engagement from relevant partners and stakeholders can also be crucial to the success of your project.

[16] https://rco.wa.gov/salmon-recovery/managing-organizations/lead-entities/
[17] https://wdfw.wa.gov/about/regional-offices
[18] https://fortress.wa.gov/ecy/gispublic/DataDownload/map_TribalReservation_statewide.pdf
[19] https://wdfw.wa.gov/publications/01374
[20] https://fortress.wa.gov/ecy/publications/summarypages/93017.html
[21] https://wdfw.wa.gov/publications/01987
[22] https://wdfw.wa.gov/publications/01988

A strong application that maximizes project scores will include letters of support from interested tribes, local governments, and stakeholders. The applicant should include as many letters of support as they believe reasonably demonstrate broad project support:

- All project proponents are strongly advised to contact and consult with interested or potentially interested tribes.
- If your project is in an RCW 90.94 planning area, contact the appropriate planning unit or watershed restoration and enhancement committee.[23]
- If your project impacts salmon habitat, contact the Salmon Recovery Lead Entity and local tribes in your region.
- If your project impacts agricultural lands, contact local conservation districts, drainage districts, and/or farming organizations.
- If your project is located in the Puget Sound (except for the Skagit), contact the Local Integrating Organization Coordinator in that area.
- If your project will impact water quality, contact Ecology Water Quality staff and the local conservation district for input.
- If your project impacts recreation, contact local user groups and/or local or state parks departments.
- If your project impacts local flooding and flood control structures, contact floodplain managers in your region including diking and drainage districts and flood control districts.

Climate change

Ecology encourages integrated approaches that consider climate impacts. Climate change is projected to result in highly variable patterns with prolonged drought interspersed with years of heavy rain.[24] Washington state is expected to experience reduced snowpack, increased stream temperatures, and changing ocean conditions.[25] These changing conditions are a significant concern for all aspects of streamflow restoration project management.

The extent and frequency of flooding is projected to increase in the future, resulting in higher flood risks to human communities and further impacts to salmon populations.[26] Projected low summer flows may cause warmer water temperatures that exceed the thermal threshold for salmon.[27] Projected shifts in temperature and precipitation regimes are likely to compound existing stressors on habitats and salmon populations. [28]

[23] https://ecology.wa.gov/Water-Shorelines/Water-supply/Streamflow-restoration/Streamflow-restoration-planning
[24] Impacts, Risks, and Adaptation in the United States: The Fourth National Climate Assessment, Volume II (2018)
[25] Ibid
[26] The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate (2009)
[27] Ibid
[28] Ibid

Proposals and project designs should consider the effects of climate change and address future changes to hydrology, sediment delivery, and other factors that affect stream systems. Strong applications will:

- Identify critical impacts of climate change specific to the project area or to partner and stakeholder interests. Many regions have completed vulnerability assessments or climate action plans that identify these key risks. In regions where these plans have not been completed, applicants can use the available regional data to make their best assessment of key impacts in their watershed.
- Incorporate climate projections into project modeling and design plans so that there is confidence that projects will continue to meet goals into the future.
- Discuss the specific effects of climate change resilience in the project or planning area, and describe how this information was used in project selection and design. Relevant information includes:
  - Citations of existing research or reports that are relevant to the project area.
  - Consideration of impacts observed during historical events that serve as an analog to future conditions (e.g., recent large flooding events, warming events/trends, etc.).
  - Description of how climate change predictions were incorporated and used during project site selection or design.
  - Models/projections of future climate change impacts (where possible).
  - Description of confidence in future flood, ecosystem, and stream conditions.

Appendix D: MAR Feasibility Study Details

Managed Aquifer Recharge (MAR) can augment streamflow by increasing surficial aquifer discharges to streams beyond what occurs under current conditions. MAR projects typically involve diverting a small fraction of high-flow seasonal streamflows to spreading basins or other infiltration facilities in the adjacent floodplain or uplands. This diverted surface water infiltrates into a shallow aquifer, migrates through the aquifer, and ultimately discharges back to surface water as re-timed groundwater base flow.

As provided in Chapter 2 of the grant guidance, all MAR project proponents seeking streamflow restoration competitive grant funding must complete a feasibility study prior to any other phases of the MAR being eligible for Streamflow Restoration grant funding. This section describes the requirements MAR project proponents must meet in preparing a feasibility study.

MAR feasibility studies are eligible for competitive grant funding pursuant to the requirements provided below. Alternatively, such feasibility studies may have been undertaken and completed prior to seeking competitive grant funding for the MAR project itself. In such cases, the feasibility study must meet the requirements provided below and a thorough report of the methodologies and results must be included with the application for the MAR project. To the extent that previous feasibility work does not meet the requirements below, recipients may seek competitive grant funding to fill in the gaps.

MAR feasibility study tasks

Information developed based upon the tasks listed below will need to be consolidated into a single technical memorandum presented to Ecology for review. This document must clearly describe aspects of the proposed MAR required to assess project feasibility. Environmental evaluations in this report will be required to follow the Water Resources Program QAPP Template[29] for non-water quality datasets and the Water Quality Program MAR feasibility QAPP Template[30] for water quality datasets. All feasibility study work must be conducted according to study designs described in these QAPPs and as approved by the respective program Quality Assurance Coordinators.

1. Preliminary site assessment and site access

Task description: Evaluate proposed MAR site(s). The applicant will use the best available information and data (e.g., geologic maps, nearby well logs) and collect any additional existing relevant data to identify local aquifers and evaluate aquifer head conditions. The applicant will also demonstrate that they have secured access and permission from the entities that own the property, through the

[29] https://fortress.wa.gov/ecy/publications/SummaryPages/1811018.html
[30] https://fortress.wa.gov/ecy/publications/SummaryPages/1910050.html

Landowner Acknowledgement Form[31], to conduct on-site work and are arranging for long-term access to the property if the project ultimately moves forward.

2. Delineation of the water source

Task description: Describe available water sources that can be developed for use in a MAR project. The water has to be available within the physical and legal constraints of the watershed, including any applicable watershed rules (WACs) or surface water source limitations (SWSLs). In instances where an MAR project would remove surface water during a period when water is not legally available per an existing watershed rule, grant recipients should consult with the Water Resources Program to determine if additional work is needed to address this aspect of project feasibility (contact Jim Pacheco at sfrprjgrants@ecy.wa.gov).

3. Field investigation and analysis of MAR site

Task description: Conduct field investigations and analyses of the resulting data to determine whether hydrogeologic conditions are favorable for a MAR project.

MAR field investigations will likely include the following:

- Test pit investigations to evaluate sub-surface conditions.
- Infiltrometer testing to evaluate infiltration rates.
- Monitoring well installation for conducting hydraulic tests, assessing water table elevations, and sampling groundwater to test water quality parameters.
- Surface water source flow measurements and water availability analyses.
- Water quality sampling of potential MAR source waters (see Item 6 below).

4. MAR permitting analysis

Task description: Identify all applications and permits required for project implementation. The analysis will estimate the anticipated costs of obtaining the necessary permits, as well as the timeline needed to acquire these permits.

Permit requirements for recharge facility design, permitting, and compliance monitoring are likely to vary from site to site. The recommended permitting approach will be developed in consultation with Ecology, WDFW, and other regulatory agencies, as necessary.

5. Preliminary MAR project design

Task description: Develop a preliminary MAR project design. The preliminary design summarizes project and design costs, project operational elements, expected project infiltration quantities, expected timing and quantities of instream flow benefits, monitoring needs to support permit requirements and performance assessments, and includes relevant design drawings. Since it will be a preliminary design,

[31] https://fortress.wa.gov/ecy/publications/SummaryPages/ECY070614.html

the final project design will be subject to change based on the outcomes and recommendations of the feasibility study.

Preliminary design elements could include:

- Surface water collection and conveyance structures.
- Infiltration basins and/or subsurface galleries.
- Methods to limit diversions to periods of high water availability and available infiltration capacity.
- Geotechnical considerations.
- Electrical power access (if needed).
- Monitoring requirements.
- Cost estimates for project permitting, construction, implementation, and operation.

6. Water quality considerations

Task Description: Assess the aquifer and source water compatibility, and likely water quality impacts from conveyance and infiltration.

MAR projects do not require National Pollutant Discharge Elimination System or State Waste Discharge permits if they are not introducing pollutants into surface or groundwater. While no Water Quality Program permits are issued for MAR projects, water quality anti-degradation rules still apply and waters of the state need to be protected. The feasibility study requirements described here are designed to allow projects to proceed without need for a Water Quality Program permit and in acknowledgement of the water quality benefits of having more water in streams. If feasibility study results indicate unanticipated water quality issues, the Water Quality Program may re-evaluate the assumption that the project will not require a water quality permit.

The water quality feasibility study will be designed to answer the question, "Will this proposed MAR project be protective of groundwater and surface water quality?" Project proponents must assess the source water and aquifer water compatibility, potential water quality changes that might occur during infiltration, and potential implications for Total Maximum Daily Load (TMDL) load and waste load allocations and/or water quality standards. If either of the surface (source) water or groundwater characterizations results exceed applicable receiving water standards, the project if implemented, a water quality treatment approach and/or a post-operation study may be required.

MAR projects do not receive stormwater runoff, and instead involve infiltrating high-flow-season stream/river water into the ground to create surface water discharge later in the year. These projects vary in design, but most employ either spreading basins (ponds) or infiltration galleries (e.g., perforated pipe) for infiltration. The latter facilities qualify as Underground Injection Controls as described in Chapter 173-218 WAC, which require on-line registration with Ecology's Water Quality Program.

In order to evaluate how water quality (surface and groundwater) is likely to be effected at a proposed MAR project site, the following tasks will need to occur.

A. Surface (Source) Water Characterization

Surface water characterization monitoring data will be evaluated to determine water quality conditions in the stream from which the diversion is planned. The purpose of this monitoring is to provide a basis for comparison of the quality of the source water to the receiving groundwater quality conditions.

The source water characterization data shall be collected during the period of ambient high flow, but not during flooding conditions when a stream exceeds its banks and picks up additional pollutants from the surrounding land areas.

The source water characterization data must be collected during the first six months of a water year, which begins on October 1. A total of three samples are needed during the October through April time period, spaced at least one week apart. Existing data may be used in lieu of or in addition to collecting new data.

The project applicant will need to:

- Check WQ Atlas[32] for 303(d) listings, and any TMDLs for a 4A-waterbody, for the proposed MAR project location and upstream reaches. Water quality parameters listed as 303(d) or TMDL in the WQ Atlas will need to be included in the source water characterization.
- Collect the required number of samples of total suspended solids, total nitrogen, total phosphorus, dissolved and total metals (arsenic, cadmium, chromium, zinc, and lead), fecal coliform, and E. coli bacteria, as well as any parameters identified in the 303(d) listing.
- Prepare a source water characterization report that includes all laboratory data presented in a table. Groundwater quality standards for all applicable parameters will need to be included in the table for comparison.

B. Groundwater (Receiving) Characterization

Groundwater from a monitoring well screened in the surficial aquifer near the project site will be sampled once for laboratory analysis of total suspended solids, total nitrogen, total phosphorus, dissolved and total metals (arsenic, cadmium, chromium, zinc, and lead) and fecal coliform and E. coli bacteria, as well as any 303(d) or TMDL parameters, prior to authorization of the project. If no monitoring wells exist at or near the project site, a nearby well may be used, or a simple temporary well may be constructed for the sampling. Determination of appropriate wells will occur in consultation with Ecology. The project applicant will prepare a groundwater characterization report that includes all laboratory data presented in a table. Surface water quality standards for all applicable parameters will be included in the table for comparison.

[32] https://fortress.wa.gov/ecy/waterqualityatlas/StartPage.aspx

C. Conveyance Characterization

Ecology's strong preference is that all diverted water be conducted through a pipeline or other conveyance structure constructed specifically for the MAR project. If diverted water will be routed through a ditch, abandoned irrigation water canal or other pre-existing conduit, then the project proponent must provide sufficient information to demonstrate that there is little potential for the conveyance to contribute pollutants during the MAR project's operation. Specifically, in those instances the study will need to be designed to demonstrate that the flow through said conduit(s) will not lead to significant contamination (e.g., nutrients and/or pesticides).

The project proponent will need to consult with Ecology's Water Quality Program to determine appropriate analyses for this characterization based on known prior uses or conditions surrounding the proposed conveyance. Results will be presented in a summary table and any issues of concern must be highlighted in the report. Further discussion may be required to identify how those issues will be addressed.

D. Additional Water Quality Considerations

MAR project feasibility studies should provide information regarding other aspects of the project design and operation relevant to water quality.

For example, MAR projects should be designed to ensure that operation only occurs during ambient high water flows. Diversions should not take place during flooding events where a stream is exceeding its banks and picking up additional pollutants from the surrounding land areas. Similarly, stormwater should not be mixed with diverted river flows. If high total suspended solids concentrations were reported through the source water characterization, a pre-settling basin in advance of the spreading basins/infiltration galleries may be needed. If additional pollutants of concern were identified, further appropriate structural pre-treatment controls may be required.

MAR projects may not withdraw water from a tidally influenced river reach, or from a mixing zone for a permitted point source discharge. The project applicant should verify that the spreading basin location is not listed as a cleanup site.[33]

7. Operation and maintenance costs

Task description: O&M costs must be estimated for the proposed MAR project, and funding sources will need to be secured. O&M costs are ineligible for Streamflow Restoration grant funding.

The MAR project design will need to include an O&M plan that describes how the diversion will be managed to prevent potentially contaminated floodwaters from entering the spreading basin/infiltration gallery. The project O&M plan must also include maintaining records of operations, repairs, and monitoring including the date, staff person, activity, and any unusual observations or issues of concern.

[33] https://apps.ecology.wa.gov/neighborhood/