

MEMORANDUM

Date: July 6, 2022
To: Chehalis Basin Board
From: Andrea McNamara Doyle, OCB Director
Re: Recent requests for reserved 2021-23 and unobligated 2019-21 funding, and OCB Staff recommendations

Overview and Summary

At the July 7, 2022 Board meeting, you will be asked to provide direction and make a decision regarding an approach for allocating reserved 2021-23 flood damage reduction and aquatic species habitat restoration funds and unobligated 2019-2021 funds. The purpose of this memorandum is to preview the projects and requests that will be presented to you on July 7, and offer OCB staff's recommendation for funding these supplemental requests from remaining unobligated 2019-2021 and 2021-2023 biennial appropriations.

A total of ten requests and project needs have been identified, ranging in size from \$50,000 to \$8.53 million each, for a total of \$13.92 million. Two requests for additional aquatic species projects and studies have been received, totaling \$8.895 million. Four additional flood damage reduction project and analysis funding needs have been requested by project sponsors or identified by staff, totaling \$4.6 million. Four additional integrated projects and needs are being requested, totaling \$425,000.

Staff will be making the following three recommendations, which are more fully spelled out in the remainder of this memorandum. Staff recommends that:

1. The Board release the \$8.53 million in reserved 2021-2023 aquatic species and habitat funds to be obligated for new ASRP projects and aquatic species studies, allocating up to \$365,000 for the Experimental Skookumchuck River Chinook Study and the remainder for other projects recommended by ASRP Regional Implementation Teams and the ASRP Steering Committee.
2. The Board release the remaining \$7.18 million in reserved 2021-2023 flood damage reduction funds, allocating \$1.857 million (\$650,000 of which the OCB Director has authority to approve, and \$1,207,000 of which requires Board approval) for the Proposed Dam/Airport Levee Project's mitigation alignment evaluation and costs associated with completing the final SEPA and NEPA EISs; \$400K for construction of the Haul Road Short-Term Erosion Management Project; \$778K in immediate needs for four local projects recommended by the Flood Authority; and the remainder for other projects recommended at a later date by the Flood Authority, Local Actions Non-Dam (LAND) Steering Group, or Community Flood Assistance & Resilience (CFAR) staff.
3. The OCB Director use unobligated 2019-2021 funds for the \$2.5 million in increased construction costs associated with the Fry Creek Pump Station, and for the \$425,000 associated with other Integrated actions described below, including two Erosion

Management Design & Construction Projects, a Stream Gage Master Plan Update, and Targeted Outreach and Community Engagement with Underserved Populations.

Recent Funding Requests & Staff-Identified Needs

The following funding requests have been recently received or identified by OCB staff. They are listed in order of the size of the request. Some requests have more details than others. Where available, additional information from the requesting party has been attached as an appendix.

ASRP (\$8.53 Million)

At the June 2, 2022 Board meeting, the ASRP Steering Committee requested the Board approve the release of the reserved \$8.53 million in unobligated funds available for new ASRP projects (see Appendix A). Due to narrow habitat construction in-water work windows, ASRP projects face possible delay if some unobligated reserve funds are not released by July, 2022. The ASRP Steering Committee has expressed concerns that project delays can have impact on project success, landowner partnerships, project sponsor trust, priority acquisitions, and project development efforts.

Fry Creek Pump Station (\$2.5 Million)

Since the June Board meeting, the cities of Aberdeen and Hoquiam sent a letter (see Appendix B) requesting \$2.5 million to complete the funding package for construction of the Fry Creek Pump Station due to increased construction costs.

Proposed FRE/Airport Levee Project & Final EISs (\$1.85 Million)

At the June 2, 2022 Board meeting, the Chehalis Basin Flood Control Zone District (FCZD) requested an additional \$857,000 (\$650,000 of which the OCB Director has authority to approve, and \$207,000 of which requires Board approval from the unobligated flood damage reduction reserve) to evaluate the flood retention facility mitigation alignments to avoid direct impacts to sensitive cultural resources, potentially minimize impacts to fish species during construction, and possibly reduce construction time, cost, and complexity. This request is in addition to the ~\$1.35 million allocated from the \$8.53 million flood damage reduction reserve in May by the OCB Director¹ for the FCZD to begin examination of the mitigation alignments (see Appendix C & D).

While no specific cost estimates are yet available, in conversations since the Board meeting, OCB staff has identified the potential for up to an additional \$1 million this biennium for agencies, tribes, contractors, and/or the FCZD to evaluate the mitigation alignment and complete the final SEPA and NEPA EISs.

Local Flood Authority Projects (\$778,000)

The Flood Authority has identified and recommended \$778,000 in immediate needs and opportunities for the remainder of this biennium. (see Appendix E, F, G, & H). This amount includes \$758,000 to honor payback commitments for three Flood Authority projects: China Creek Floodwater

¹ \$2M of the \$8.53M flood damage reduction reserve was reserved as contingency for the FRE/Airport Levee budget line item, to be obligated by the OCB Director only for unforeseen costs associated with completing the final SEPA & NEPA EISs

Storage & Fish Habitat, Mill Creek Multi-Objective Implementation Plan Phase II, and Berwick Creek Flood Reduction and Restoration. The Flood Authority seeks to “make whole” these projects that basin jurisdictions had previously agreed to re-purpose some funding to other Flood Authority projects in the spirit of continuing reciprocity and goodwill. The remainder of the Flood Authority’s immediate requests includes \$20,000 to purchase, install, and calibrate a stream gage on China Creek as part of the Chehalis Basin Flood Warning System.

The Flood Authority is also in the process of prioritizing a series of funding requests for existing and new projects that they will bring to the Board for consideration at a future meeting. There is also interest in potential additional implementation funds for CFAR or LAND, although no specific project proposals have yet been submitted.

Port of Grays Harbor Haul Road Short-Term Erosion Management (\$400,000)

Since the June Board meeting, the Port of Grays Harbor and Chehalis Basin Flood Authority have modified the cost estimate for a permittable, constructible short-term solution for the upcoming flood season for the Port of Grays Harbor Haul Road erosion project (see Appendix I). The most recent cost estimate is \$400,000. This is substantially less than original cost projections previously provided to the Board, reflecting a greater understanding of the hydrodynamic and geotechnical context as well the permitting, bidding, materials and construction context. This will be an initial project that can occur before 2022/23 flood season and before end of biennium. Port of Grays Harbor also continues working on finding funding partners to address erosion concerns for the project. The Flood Authority has identified this project as a high priority for immediate funding.

Experimental Skookumchuck Chinook Salmon Study (\$365,000)

Some members of the Skookumchuck Dam technical group recently expressed interest in an experimental study with the goal of increasing the separation between spring-run and fall-run Chinook salmon spawn timing. The study proposes to change the timing and volume of water released from the Skookumchuck Dam during late summer/early fall for three years starting in 2022 to produce flow conditions that more closely mimic the historical flow pattern from mid-August through mid-October (see Appendix J). The proposed scope and budget for the study consists of three parts: 1) Monitoring the lower Skookumchuck River with a sonar camera during the arrival of early fall-run Chinook in August and September for three consecutive years, at a first-year cost in 2022 of \$104,000; 2) Continuing for three more years the three-year fry trapping work initiated by the Quinault Indian Nation in 2020 (for a total of six years), at an additional cost of up to \$260,000 in 2023; and 3) Data analysis and final report in 2024, at a cost TBD. The first-year funding requested for the project this biennium is estimated at approximately \$365,000. OCB, WDFW and Quinault Indian Nation staff are actively discussing the details of the study’s scope, budget, and implementation in 2022-23.

Haul Road Reach-Scale Erosion Management Design (\$150,000)

The most current cost estimate to advance the design of a reach-scale erosion management plan near Haul Road is \$150,000. This project has previously been presented to the Board.

SR 508 Lewis County Erosion Management Project (\$150,000)

Lewis County Conservation District has requested up to \$150,000 to construct a previously identified erosion management project along SR 508 in Lewis County.

Chehalis Basin Stream Gage Master Plan Update (\$75,000)

The Flood Authority has requested \$75,000 to update the 2017 Chehalis Basin stream gage plan, which set priorities for 2017-2022. The Flood Authority has been fielding requests for new gage locations, low-flow gaging, river forecasting, snow gaging, relocating gages, and integrating flood and fish gaging. After discussions with OCB, the Flood Authority has agreed to include within the scope of work for the gage plan update consideration of the Basin's integrated gaging needs and priorities.

Targeted Outreach & Participation Funding for Underserved Populations (\$50,000)

\$50K for targeted community outreach and engagement with underserved and marginalized populations on Chehalis Basin Strategy activities.

Available Unobligated Funds

2021-2023 Aquatic Species and Habitat Reserve

When the Board approved its 2021-2023 Spending Plan in August of last year, \$30.87 million was allocated for Aquatic Species and Habitat, and \$8.53 million of the \$30.87 million was reserved as unobligated until 2022 Board check-in(s). At the June 2, 2022 Board meeting, the ASRP Steering Committee requested the Board release all of the remaining \$8.53 million in reserved 2021-2023 aquatic species and habitat funds to be obligated for new ASRP projects. More recently, some members of the Skookumchuck Dam study team have expressed interest in a new three-year experimental Skookumchuck Chinook genetics study, at a cost of approximately \$365,000 for the first year.

OCB Recommendation: Staff recommends the Board release the \$8.53 million in reserved 2021-2023 aquatic species and habitat funds to be obligated for new ASRP projects and aquatic species studies, allocating it as follows:

- Up to \$365,000 for the Experimental Skookumchuck River Chinook Study, which may be obligated after the study plan is approved by the ASRP Steering Committee.
- The remainder for other projects recommended at a later date by the ASRP Steering Committee and approved by the OCB Director.

2021-2023 Flood Damage Reduction Reserve

When the Board approved its 2021-2023 Spending Plan in August of last year, \$30.87 million was allocated for Flood Damage Reduction Projects and Planning, and \$8.53 million of the \$30.87 million was reserved as unobligated until 2022 Board check-in(s). Two million (\$2m) of the \$8.53 million flood damage reduction reserve was reserved as contingency for the FRE/Airport Levee budget line

item, to be obligated by the OCB Director only for unforeseen costs associated with completing the final SEPA and NEPA EISs. Earlier this spring, the FCZD requested, and the OCB Director approved, allocating ~\$1.35 million of the flood damage reduction reserve to begin investigating and evaluating new the mitigation alignments as part of the final SEPA and NEPA EISs.

At the June 2, 2022 Board meeting, the Chehalis Basin Flood Control Zone District (FCZD) requested the Board approve the release of an additional \$857,000 from the unobligated flood damage reduction reserve (\$207,000 of which goes beyond the \$2 million the OCB Director has authority to approve) for actions regarding flood retention facility mitigation alignments. In conversations since the Board meeting, OCB staff has also identified a need to reserve up to \$1 million for other potential costs this biennium related to the mitigation alignment and final SEPA and NEPA EISs for agencies, tribes, contractors, and/or the FCZD.

OCB Recommendation: Staff recommends the Board release the remaining \$7.18 million in reserved 2021-2023 flood damage reduction funds, allocating it as follows:

- \$857,000 for the FCZD's mitigation alignment evaluation
- Up to \$1 million for other potential costs this biennium related to the mitigation alignment and final SEPA and NEPA EISs incurred by agencies, tribes, contractors, and/or the FCZD
- \$400,000 for construction of the Haul Road Short-Term Erosion Management Project
- \$778,000 in immediate needs for the following local Flood Authority projects
 - China Creek Floodwater Storage & Fish Habitat, Mill Creek Multi-Objective Implementation Plan Phase II, Berwick Creek Flood Reduction and Restoration, and China Creek Gage Purchase, Installation & Calibration.
- The remainder (\$4.145 million) for other projects recommended at a later date by the Flood Authority, Local Actions Non-Dam (LAND) Steering Group, or Community Flood Assistance & Resilience (CFAR) staff and approved by the OCB Director.

Unobligated 2019-21 Funds

At the June 2, 2022 Board meeting, the Board was notified that there is currently ~\$3.3 million in unobligated 2019-21 funds. These funds were originally designated for advancing the overall long-term strategy, but for various reasons have not yet been needed. They are not subject to the 2021-2023 Capital Budget Proviso requiring six out of seven voting members to approve their use. Per previous Board direction, the OCB Director is authorized to obligate these funds for the purposes of advancing the overall long-term strategy. To date, the OCB Director and has prioritized re-purposing unobligated 2019-2021 funds for cost increases or other unanticipated requirements associated with active/ongoing projects that were initiated before the 2021-23 biennium (*i.e.*, as “contingency” funds). Moving forward, since the Board did not reserve any “Integrated” funding from the 2021-2023 biennium, new integrated projects that advance both flood damage reduction and aquatic species habitat restoration priorities would also seem to be an appropriate use of these unobligated 2019-2021 funds.

OCB Recommendation: Staff recommends prioritizing unobligated 2019-21 funds for the following cost increases and integrated actions:

- \$2.5 million in increased construction costs associated with the Fry Creek Pump Station
- \$425,000 for the following Integrated actions:
 - Haul Road Reach-Scale Erosion Management Design, SR 508 Lewis County Erosion Management Construction Project, Stream Gage Master Plan Update, and Targeted Outreach and Community Engagement with Underserved Populations.

Summary Table of Proposed OCB Recommendations

Project Name	Cost estimate for remainder of biennium	OCB Staff Recommended Fund Source
ASRP Projects	Up to \$8,530,000	2021-23 Aquatic Species & Habitat Reserve Funds
Experimental Skookumchuck Chinook Salmon Study	Up to \$365,000	2021-23 Aquatic Species & Habitat Reserve Funds
Proposed FRE/Airport Levee Project & Final EISs	\$1,850,000	2021-23 Flood Damage Reduction Reserve Funds
Local Flood Authority Projects (China Creek flood & fish, Mill Creek, Berwick Creek, China Creek gage)	\$778,000	2021-23 Flood Damage Reduction Reserve Funds
Port of Grays Harbor Haul Road Short-Term Erosion Management	\$400,000	2021-23 Flood Damage Reduction Reserve Funds
Other Flood Authority, LAND, or CFAR projects TBD	\$4,145,000	2021-23 Flood Damage Reduction Reserve Funds
Fry Creek Pump Station	\$2,500,000	Unobligated 2019-21 Funds
Haul Road Reach-Scale Erosion Management Design	\$150,000	Unobligated 2019-21 Funds
SR 508 Lewis County Erosion Management Project	\$150,000	Unobligated 2019-21 Funds
Chehalis Basin Stream Gage Master Plan Update	\$75,000	Unobligated 2019-21 Funds
Targeted Outreach & Participation Funding for Underserved Populations	\$50,000	Unobligated 2019-21 Funds

Next Steps

At the July 7 Board meeting, the Board will be asked to make a decision regarding release of 2021-2023 flood damage reduction and aquatic species restoration reserve funds and a continued approach for allocating unobligated 2019-21 funds.

Appendix A

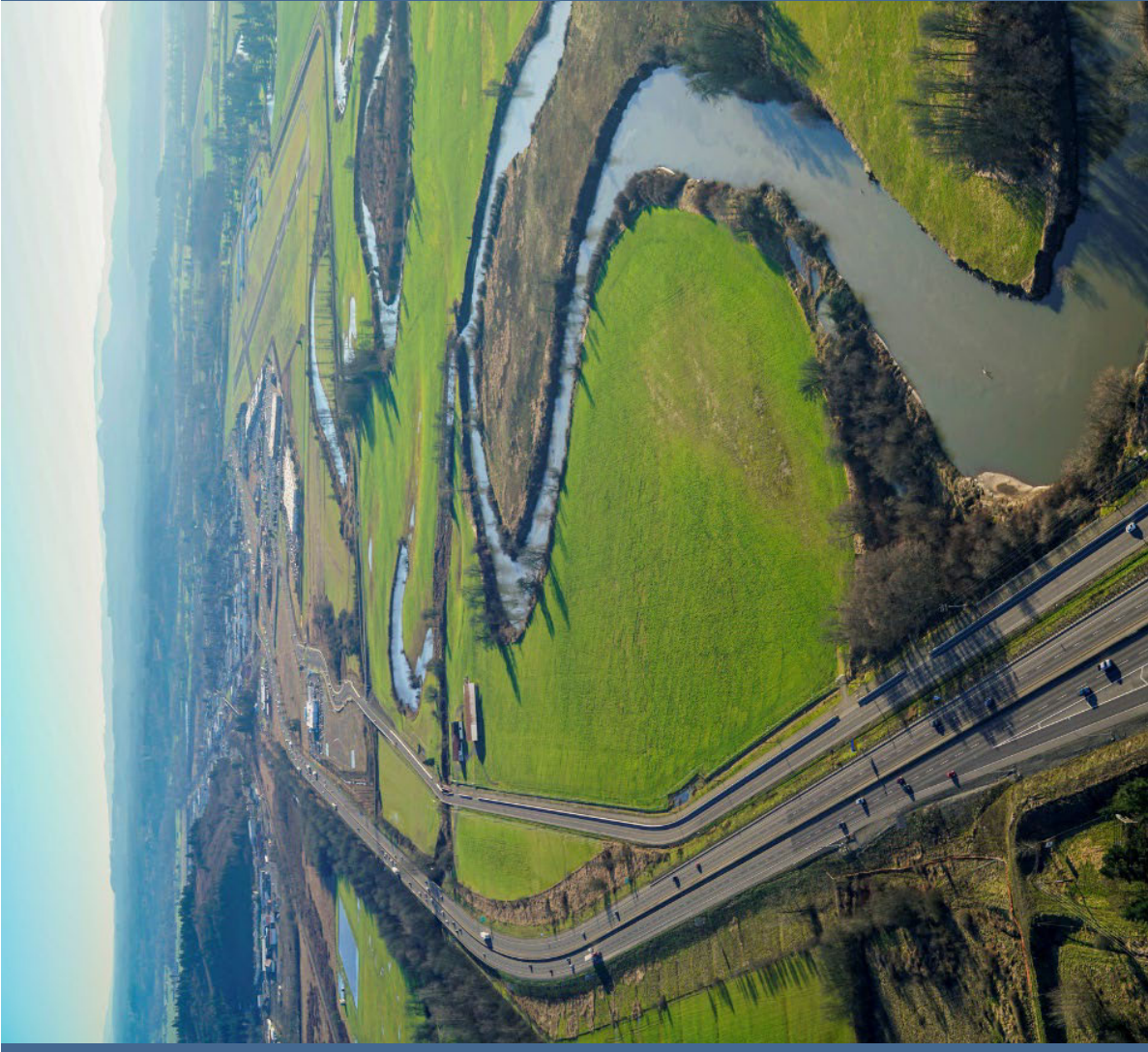


AQUATIC SPECIES RESTORATION PLAN UPDATES

TOPICS

- Project portfolio updates
- ASRP project site visits
- Unobligated reserve funds discussion

PROJECT PORTFOLIO UPDATES



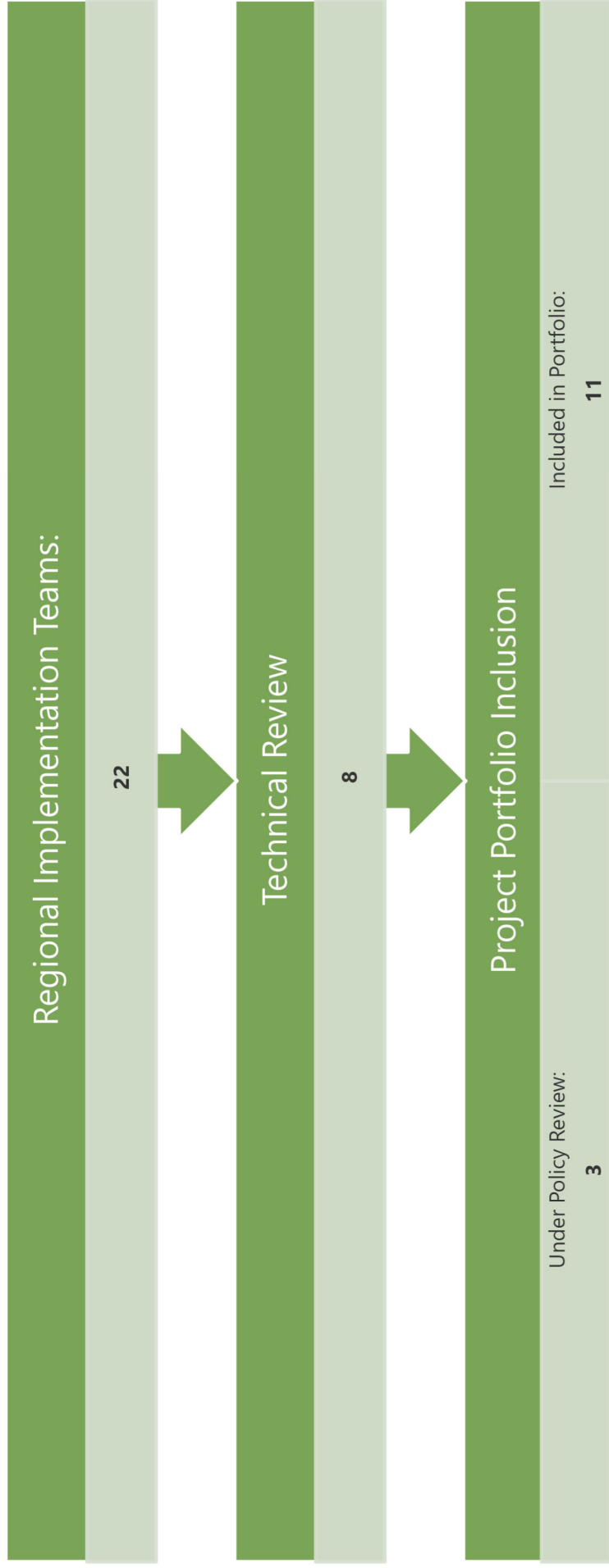
PROJECT IMPLEMENTATION PROCESS ROLL-OUT

- 1st quarter 2022
 - Created new teams to support scaling up of program implementation
 - 3 Regional Implementation Teams
 - Technical Review Team
 - Facilitated new funding process
 - Refined policies
 - Filled over 2/3 of Project Portfolio/allocated \$14.4M

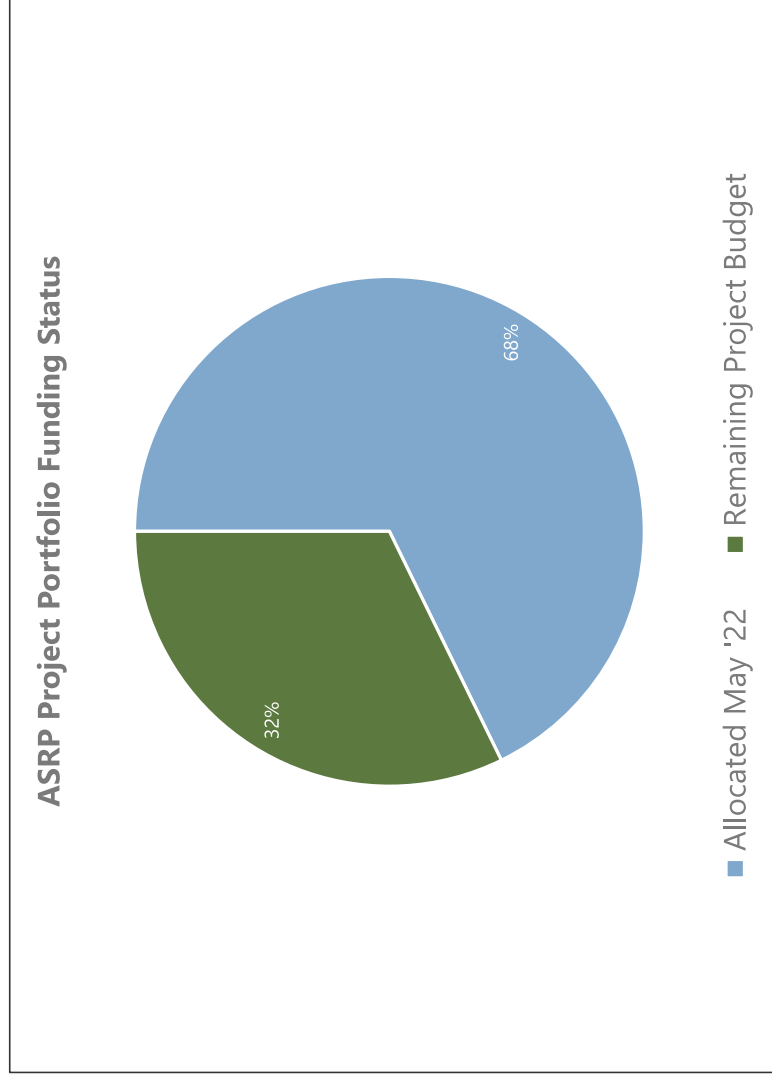
21-23 PROJECT PORTFOLIO

- Adding new projects on “rolling” basis
- Allocating all funds necessary for project completion upfront
 - Contracting/obligating funds in phases to large projects

PROJECT REVIEW PIPELINE

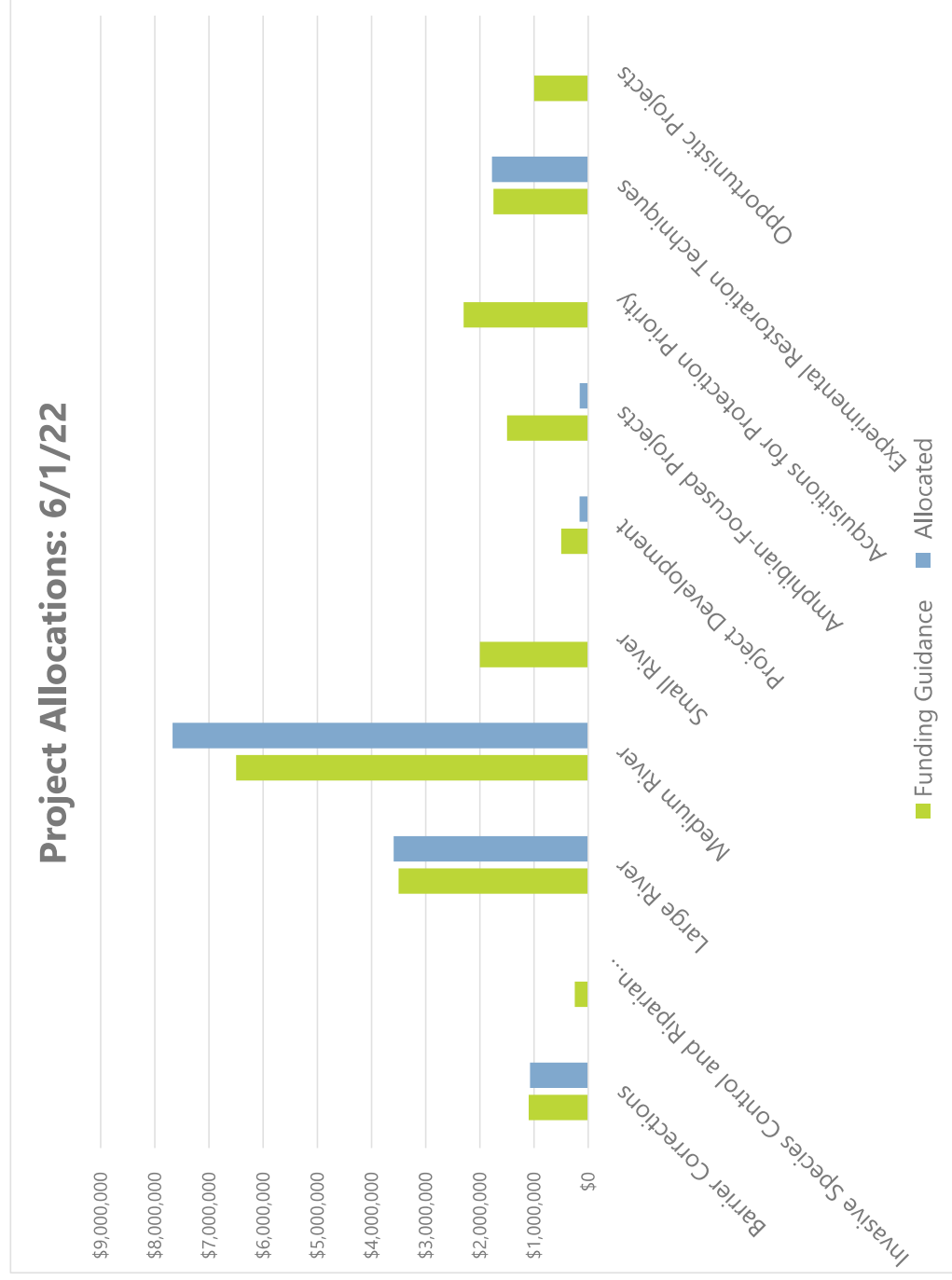


PROJECT PORTFOLIO STATUS



PROJECT PORTFOLIO STATUS

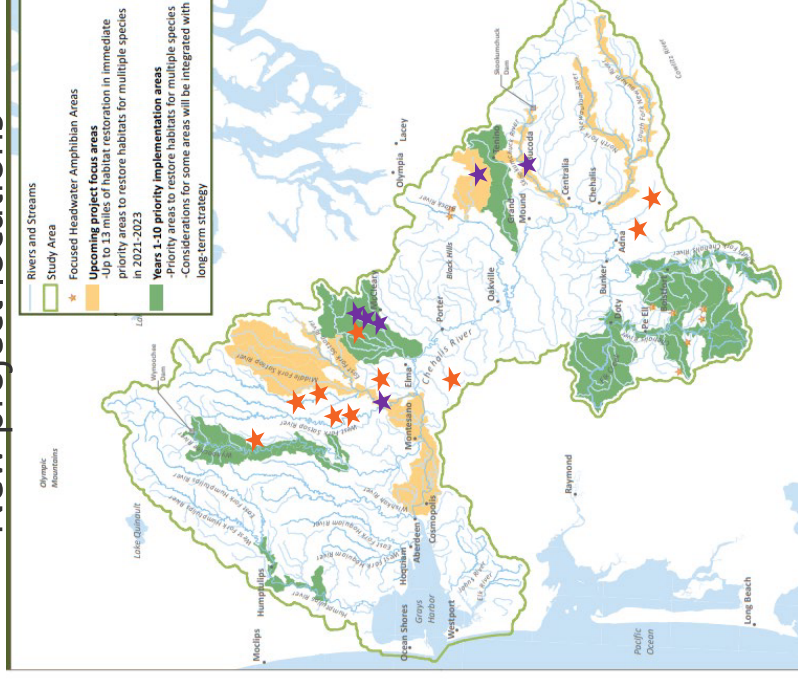
Project Allocations: 6/1/22



21-23 PROJECT PORTFOLIO

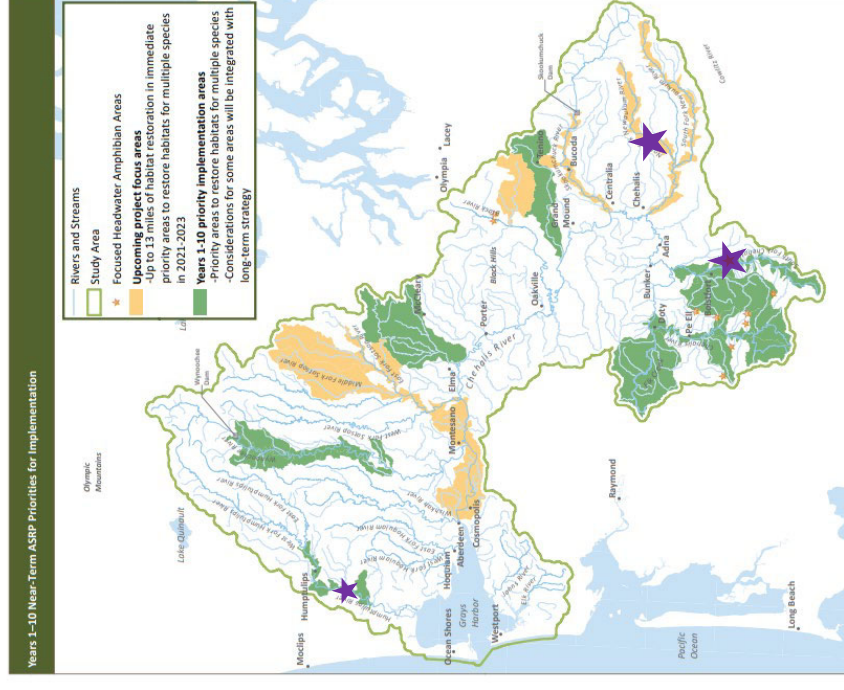
New Project Packages	Funding Allocated
Experimental Sediment Wedge (2)	\$1,490,400
MF Wildcat Creek Barriers (3)	\$1,073,700
Experimental Beaver Dam Analogues (8)	\$286,000
Riverbend Ranch Reach (2.5RM)	\$7,675,000
Satsop Reach (2.5RM)	\$3,590,000
West Rocky Prairie Oregon Spotted Frog	\$160,000
Project development (3)	\$160,000
TOTAL	\$14,436,000
Remaining 21-23 Project Funds	\$6,813,000

New project locations

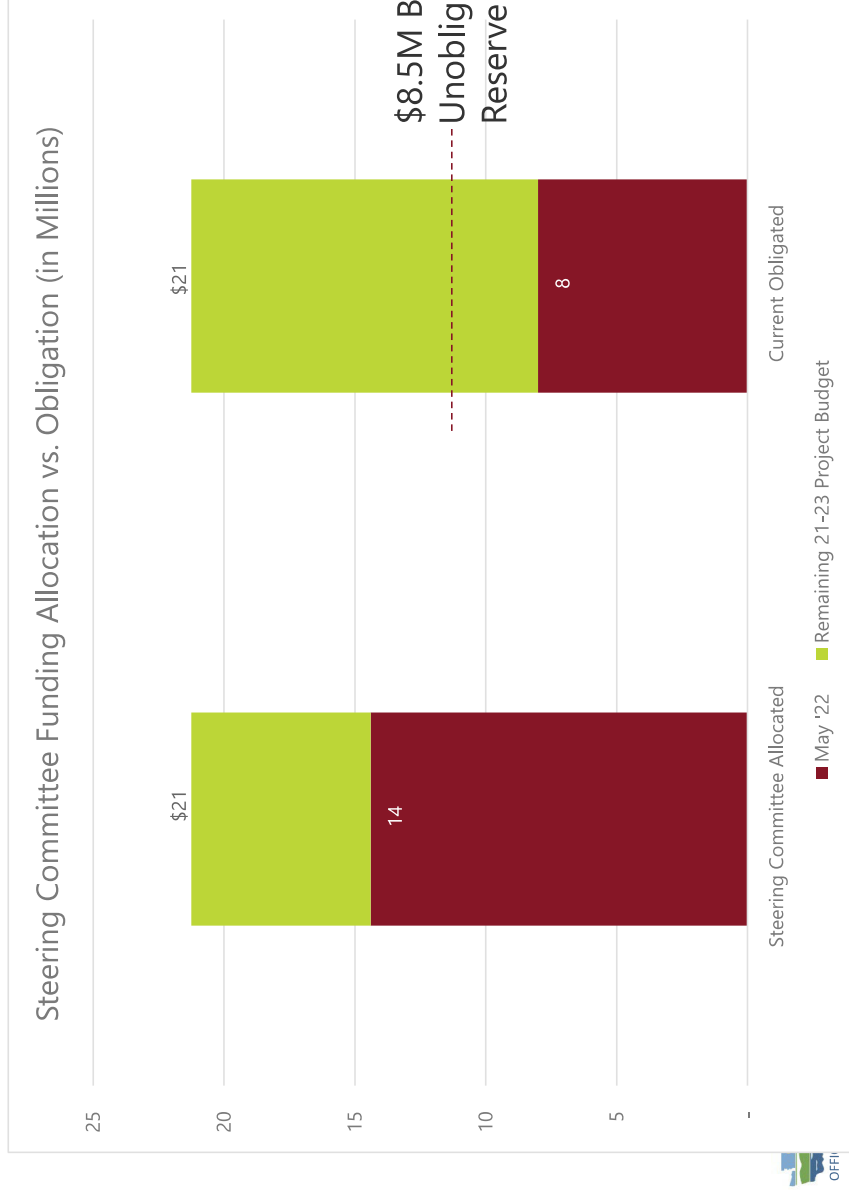


21-23 PROJECT PORTFOLIO

- New project development efforts are underway
- Capacity for sponsors to create new project opportunities
- 3 new project development efforts:
 - SF Chehalis/Lake Creek Reach
 - NF Newaukum Reach
 - Middle Humptulips Reaches

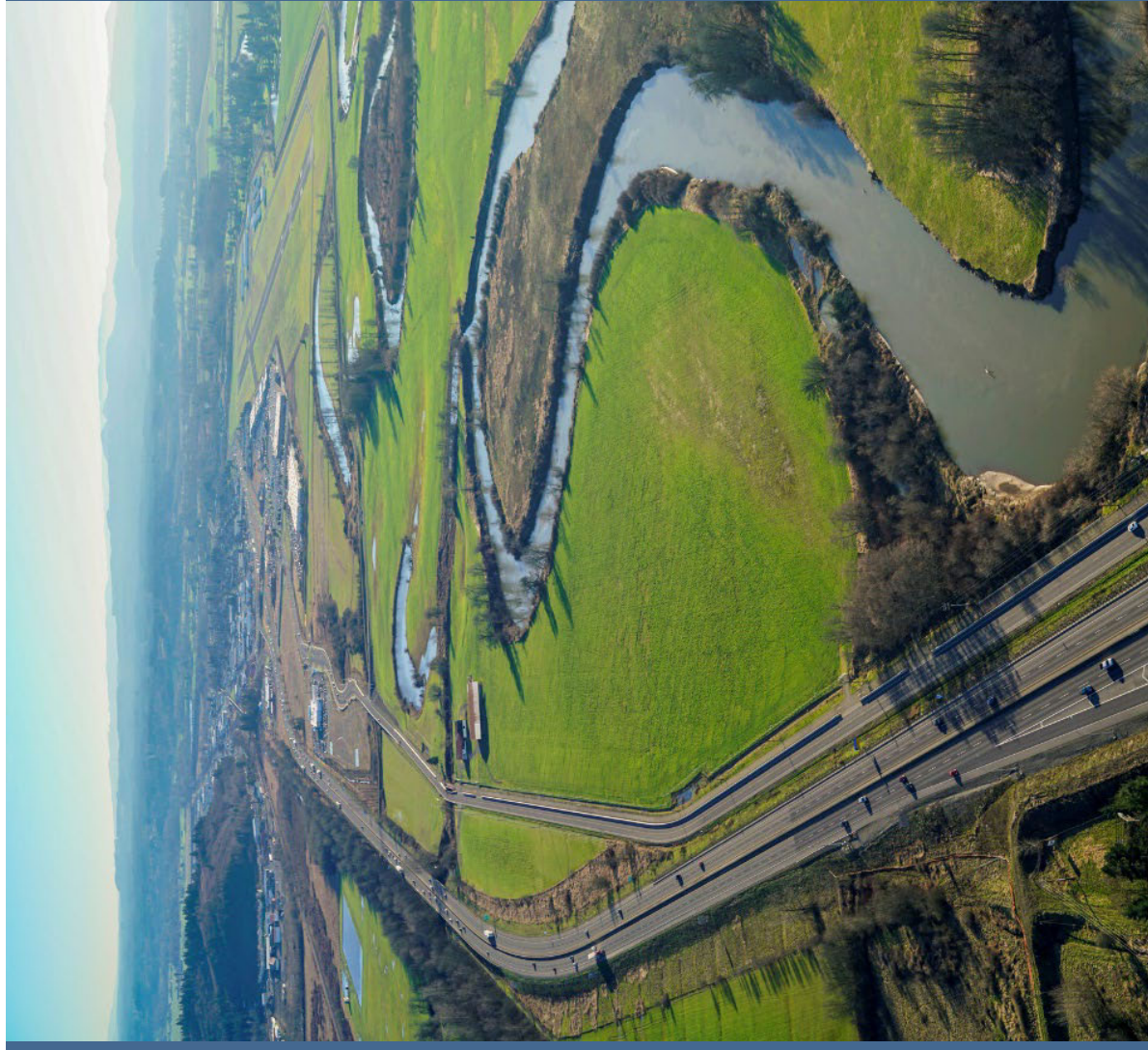


ASRP PROJECT SPENDING



- Red bars will continue to increase as new projects are input into the Portfolio
- Obligated dollars will “jump” up due to construction phases

EARLY ACTION REACH SITE VISITS



SPRING SITE VISITS

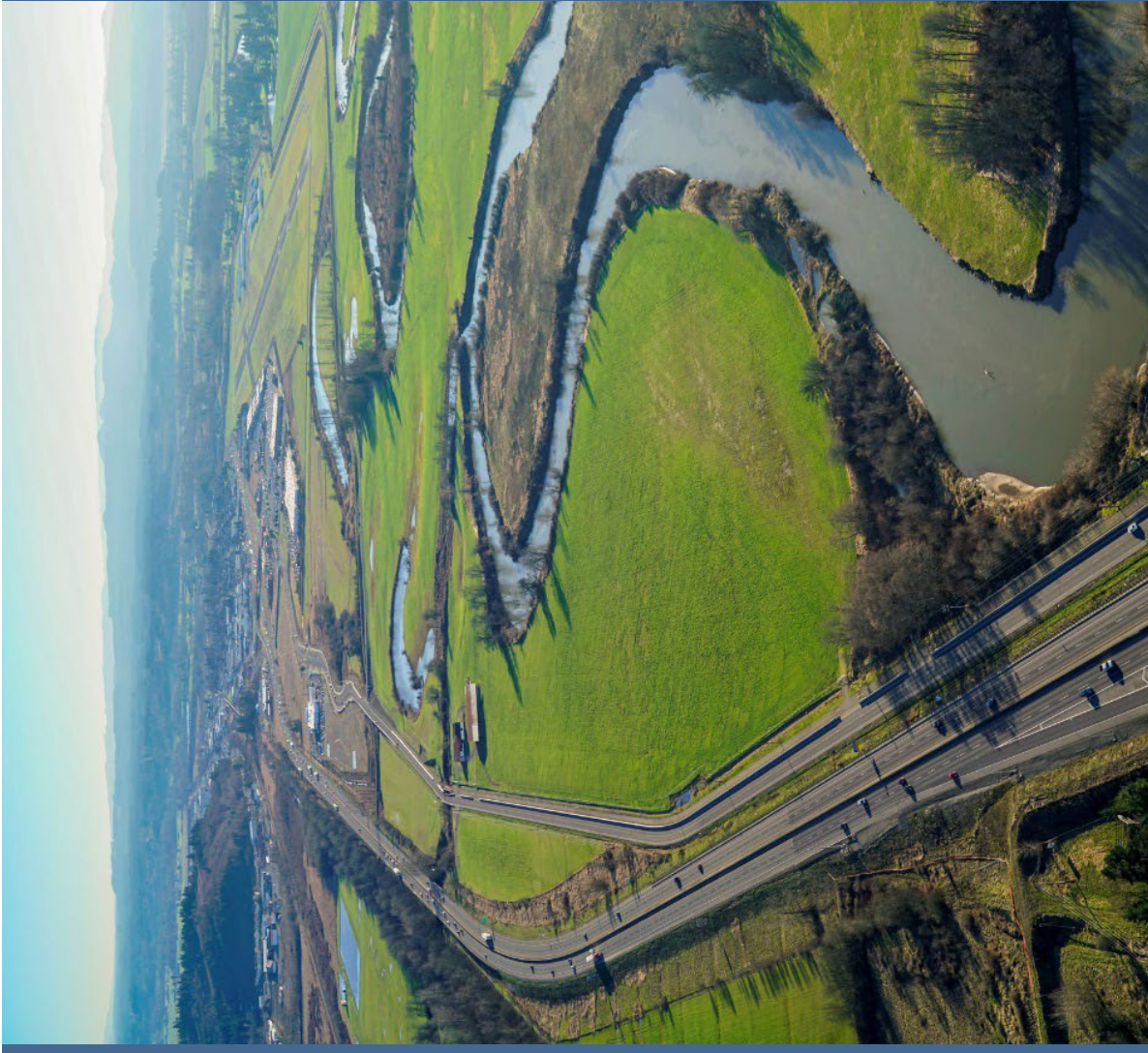
- Skookumchuck
- East Fork Satsop
- Wynoochee



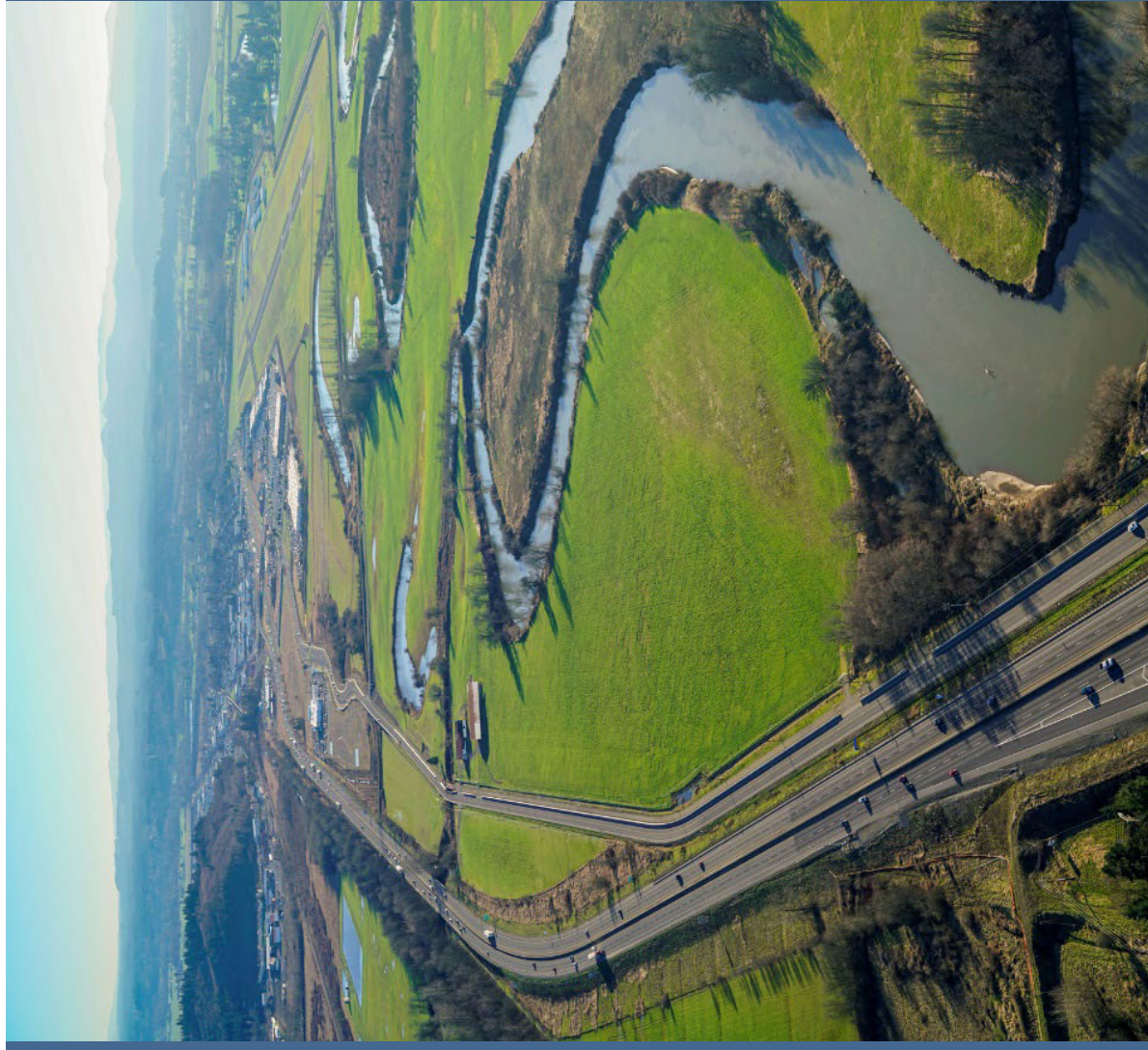
SPRING SITE VISITS

- What are 1-2 takeaways from the site tours?
- Which project elements are you interested in tracking as these projects get constructed?
- What types of ASRP projects would you like future opportunities to visit?

QUESTIONS OR DISCUSSION



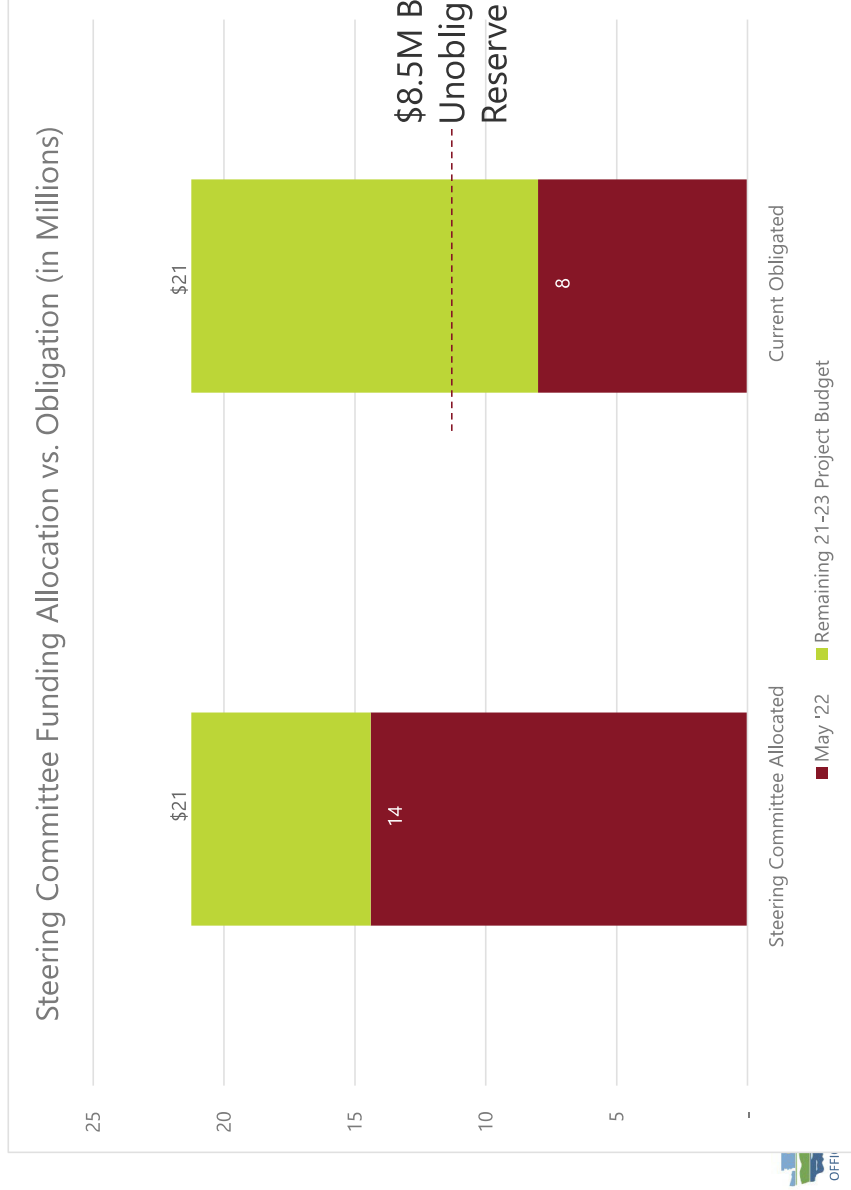
ASRP UNOBLIGATED RESERVE FUNDS



ASRP PROJECT BUDGET

- Carryover from 2019-21 = \$880,000
- Board approved additional \$20.37M in habitat funding for 2021-23
 - Reserved \$8.5M unobligated funds
- ASRP projects budget = \$21.25M, with \$8.5M unobligated reserve funds

ASRP PROJECT SPENDING



- Red bars will continue to increase as new projects are input into the Portfolio
- Obligated dollars will “jump” up due to construction phases

ASRP PROJECT SPENDING

Spending is \$4.5M under the reserve threshold.....why now?

PROJECT SPENDING TIMELINE

January 2022

\$0 allocated

May 2022

\$14.4M allocated



LOOKING AHEAD – SCOPE OF CHALLENGE

- 11 projects still under review for Portfolio inclusion
- New project opportunities discussed monthly at Regional Implementation Teams
- Project Development → Project Opportunities
 - 10 focused efforts underway
 - Proven track record

LOOKING AHEAD – COST OF CHALLENGE

- 32% of projects budget remaining
 - 11 projects in review
 - At least \$3M, plus those who have not submitted budgets yet
 - More to come

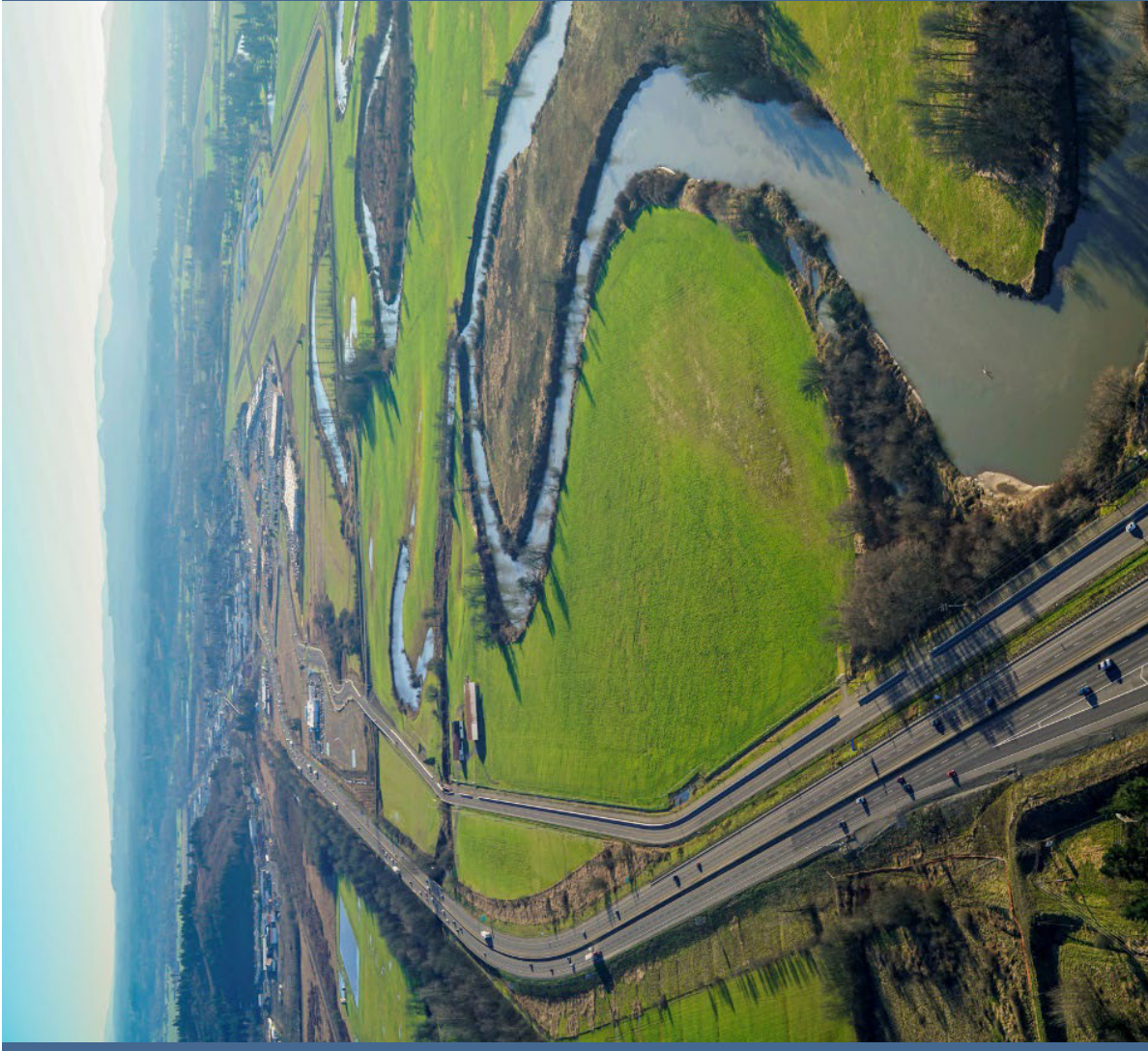
CONSEQUENCES OF INACTION

- Possible delay of ASRP projects
- If funds available:
 - Early July = No delay
 - August or beyond = Expected delays
 - › Ripple effects on project success and landowner partnerships, project sponsor trust
 - » priority acquisitions
 - » project development efforts

STEERING COMMITTEE REQUEST

The Steering Committee requests that the Board make the \$8.5M unobligated habitat reserve funds available for ASRP projects

QUESTIONS OR DISCUSSION



Appendix B



Chehalis River Basin

Flood Control Zone District

Matthew F. Dillin, P.E., District Manager
Erik P. Martin, P.E., District Administrator

351 NW North St
Chehalis, WA 98532-1900

May 30, 2022

Andrea McNamara, Office of Chehalis Basin Director
Department of Ecology
PO Box 47600
Olympia WA 98504

Ms. McNamara,

As you are aware, the Chehalis River Basin Flood Control Zone District (District) is the project applicant for the proposed FRE water retention structure being evaluated under the state and federal Environmental Impact Statement (EIS) processes. One purpose of the EISs is to identify potential impacts from a project, then give the applicant the opportunity to find and commit to ways to avoid, minimize, or mitigate those impacts. For the FRE facility, this process has been working as it is designed and has recently resulted in the need to evaluate if the facility would be better situated at an adjusted alignment approximately 1,000 feet upstream or downstream from the currently proposed location. Such an alignment modification could have multiple potential benefits, including being able to avoid direct impacts to a sensitive cultural resource and potentially minimizing the impacts on migrating fish during the construction phase of the project. It may also have the potential to reduce construction cost, schedule, and complexity. The overall flood damage reduction benefits would remain the same for the adjusted alignments.

Even though the potential adjustment is very minor in the overall scope of the project it will require additional engineering work to prepare sufficient project description material to input into the EIS processes and to be certain of their viability. This work is estimated to take seven months. Given the extent of potential benefits, the District feels that the additional time and resources for the investigation of these alignments are an important and worthwhile investment for the EIS processes. The District has already requested the initial funds to begin investigating these alignment modifications. However, the full scope of work will require authorization by the Office of Chehalis Basin Board (OCB) for expenditure of funds to complete the EIS work. The District would like to brief the OCB board members at the June 2nd meeting.

Sincerely,

Erik P. Martin, District Administrator
Chehalis River Basin Flood Control Zone District
Erik.Martin@lewiscountywa.gov
360.740.2697 Office

Sean D. Swope
Chair

Lindsey R. Pollock, DVM
Vice Chair

F. Lee Grose
Member

Appendix C

HDR Engineering, Inc
 Bellevue, WA 98004
 Phone: (425) 450-6200

Lewis County Public Works Matt Dillin
 2025 NE Kresky Ave
 Chehalis, WA 98532



Lewis County - Chehalis River Basin Flood Control Zone District
 Proposal for Mitigation FFE Structure and Inundation Area Locations Evaluation and Continued AMM and Environmental Support
 Professional Services
 25-May-22

Original Task #	AMM Engr Support Task #	Task Description	District OCB Request			Task and Full Request Total
			OCB Scope of Work for Supplemental 4 (\$200K + \$180K)	OCB Scope of Work for Supplemental 5	OCB Scope of Work for Supplemental 6	
1	1	Project Management	\$50,000		\$155,000	\$205,000
2.1	18.1	Kickoff Meeting		\$20,000		\$20,000
2.2	18.2	Geological Investigation	\$75,000	\$969,000	\$4,000	\$1,048,000
2.3	18.3	Phase 1 Design	\$95,000		\$100,000	\$195,000
2.4	7.1	Phase 1 - Fish Passage	\$160,000		\$105,000	\$265,000
2.5	18.4	Phase 1 Design and Geotech Tech Memo			\$110,000	\$110,000
2.6	18.5	Comparative Cost			\$80,000	\$80,000
2.7	18.6	Comparative Evaluation Technical Memorandum			\$95,000	\$95,000
2.8	18.7	Submittal for Ecology and Corps			\$62,000	\$62,000
2.9	18.8	Tech Sup for Ecology and Corps Submittal			\$18,000	\$18,000
3.2	21	Environmental Coordination			\$128,000	\$128,000
Supplemental Subtotals:			\$380,000	\$989,000	\$857,000	\$2,226,000

Appendix D

CHEHALIS BASIN STRATEGY REQUEST FOR RESERVE 2021-2023 BUDGET FUNDS

7-06-2022

Brief Title of Request: China Creek Floodwater Storage and Fish Habitat Project

Organization Making Request: Flood Authority on behalf of the City of Centralia

Funding Request: \$643,000 to "Make the Project Whole"

Summary of 2021-2023 Funding & Work to Date:

- China Creek Project (phase I and phase II) is a Chehalis Basin Strategy grant funded project. See RCO grant funding project website [here](#).
- China Creek Project (phase I and phase II) is complete. Total phase II cost was \$3,053,000; however, Chehalis Basin Strategy grant funds only tallied to \$2,410,000. This leaves the project short \$643,000.

Description of Additional Needs:

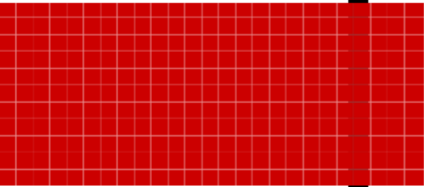
- City of Centralia has requested \$643,000 for the China Creek Floodwater Storage and Fish Habitat Project to make the project whole. See City request memo [here](#).
- As a result of returning money to the Chehalis Basin process for the year without a state capital budget, the pandemic, supply-chain issues, delays and complexities associated with permitting (e.g., US Army Corps of Engineers), early funding partnerships not sustained, and changes in project staff and leadership, the project ultimately needed to borrow \$643,000 from the City's stormwater fund to complete the project and pay its contractors.
- Project is complete. Celebration is scheduled for 7/12/2022 (3:00 PM, Centralia). See attached.
- Providing requested funding to the City would allow the City to pay back its stormwater fund.

List of Key Tasks & Assumptions:

- None.

Contact Information:

- Scott Boettcher, Staff
Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com



Complete

Local Projects (Centralia, China Creek)

Our Views: China Creek an Example of Success in Chehalis Basin



China Creek is seen at near the Pine Street and Rock Street intersection in Centralia.
PETE CASTER, FILE PHOTO
Posted Friday, March 12, 2021 4:12 pm

By The Chronicle Editorial Board



Second Phase of China Creek Flood Mitigation and Fish Habitat Improvement Work Underway in Centralia

Dirt Work: Project Aims to Add More Water Storage, Reduce Flooding Downstream



Signage details the Chehalis Basin Strategy for China Creek flood and habitat protection seen Friday in Centralia.
JARED WENZELBURGER, JARED@CHRONLINE.COM

June 28, 2021



6-28-2022

From: [Kim Ashmore](#)
To: andrea.doyle@ecy.wa.gov; brandon.carman@rco.wa.gov; [City Council](#); [Kirsten Harma](#); [Glen Connelly](#); colronjanaverill@comcast.net; [Lauren Miles-Golembiewski](#); [Alan Hall](#); [Felix Kristanovich](#); [John Toll](#); [Greg Reub](#); [Rob Hill](#); [Amy Booth](#); [Patty Page](#); [Dan Agnew](#); [Chronicle - External Contact](#); sean.swope@lewiscountywa.gov; [Lindsey Pollock](#); [Lee Grose](#); [Centralia Department Heads](#); [Scott Boettcher](#); [Peter Abbarno](#); [Kale, Nat \(ECY\)](#)
Subject: RE: **China Creek Phase 2 Celebration**
Date: Tuesday, July 5, 2022 7:30:13 AM

Good Morning Team

After all the input we are going with **July 12th** for the celebration. I will send out a outlook invite shortly. Hope to see most of you on the 12th at 3:00.

Please share with others that should be here.

Thanks for all you do.

Kim

From: Kim Ashmore
Sent: Wednesday, June 29, 2022 8:32 AM
To: andrea.doyle@ecy.wa.gov; 'brandon.carman@rco.wa.gov' <brandon.carman@rco.wa.gov>; City Council <CityCouncil@cityofcentralia.com>; 'Kirsten Harma' <kharma@chehalistribe.org>; 'Glen Connelly' <gconnelly@chehalistribe.org>; colronjanaverill@comcast.net; 'Lauren Miles-Golembiewski' <lmiles@glacierenviro.com>; Alan Hall <alanh@glacierenviro.com>; 'Felix Kristanovich' <felixk@windwardenv.com>; John Toll <JohnT@windwardenv.com>; Greg Reub <gregr@windwardenv.com>; Rob Hill <RHill@cityofcentralia.com>; 'Amy Booth' <chehalisbasinintern@gmail.com>; Patty Page <PPage@cityofcentralia.com>; 'Dan Agnew' <danjagnew@gmail.com>; Chronicle - External Contact <news@chronline.com>; 'sean.swope@lewiscountywa.gov' <sean.swope@lewiscountywa.gov>; Lindsey Pollock <Lindsey.Pollock@lewiscountywa.gov>; Lee Grose <Lee.Grose@lewiscountywa.gov>; Centralia Department Heads <CentraliaDepartmentHeads@cityofcentralia.com>
Subject: **China Creek Phase 2 Celebration**

Good Morning Team,

You all and many others have had a role in completing the latest project on China Creek. Phase 2 of the **project is complete** and we would like to celebrate this accomplishment with you. Just knowing how busy you all are let's try and see if we can make either July 12th or July 14th work. I am proposing a 3:00p-6:00p time frame and I will provide some Firehouse subs, cookies and water.

Please respond with your availability ASAP so we can get the date on our calendars.

Thank You All,

Kim

Kim Ashmore Public Works Director
C: City of Centralia **A:** 1100 N Tower
P: 360-623-1921 **C:** 360-520-9197
Email: kashmore@cityofcentralia.com



This document may not be a confidential document. Emails and text messages sent by City employees and City Council members during the course of business, may constitute a public record, making this communication subject to the Washington State Public Records, RCW Chapter 42.56. This document may be available to the public for disclosure

Appendix E

CHEHALIS BASIN STRATEGY REQUEST FOR RESERVE 2021-2023 BUDGET FUNDS

7-06-2022

Brief Title of Request: New China Creek Gage

Organization Making Request: Flood Authority

Funding Request: \$35,000 to "Jump Start Basin Gage Plan Update Recommendations"

Summary of 2021-2023 Funding & Work to Date:

- This funding request will be used by the Flood Authority to "jump-start" purchase, installation, and calibration of a gage on China Creek in advance of completion of a proposed update to the Flood Authority's 2017 Basin Gage Master Plan.
- It is expected that the proposed update to the 2017 Basin Gage Master plan will recommend China Creek be gaged (it is currently not).
- Flood Authority funded gages are regularly and exclusively maintained and operated by the Flood Authority through a process of interlocal funding agreements with Thurston, Lewis, and Grays Harbor counties.
- Purchase, installation, and calibration of gages has been funded through Chehalis Basin Strategy state capital budget dollars. Operations and maintenance (O&M) has not and cannot. O&M costs are covered by Flood Authority member jurisdictions through interlocal funding agreements with Thurston, Lewis, and Grays Harbor counties.

Description of Additional Needs:

- Flood Authority has requested \$75,000 to update the Flood Authority's [2017 Basin Gage Master Plan](#) as discussed at their 5/19/2022 and 3/17/2022 meetings (see [here](#) and [here](#)) and presented by WEST Consultants 6/22/2022 (see [here](#)).
- Updating the 2017 Basin Gage Master Plan will set Flood Warning System improvement and investment priorities for the next 5 years (i.e., 2022-2027).
- 2022 flood season saw a substantial increase in Flood Warning System usage and desire for accurate, up-to-date flood warning information.
- China Creek is currently ungaged, posing a significant challenge to being able to accurately forecast flooding in this populous area of the Basin (i.e., Centralia).

- Gaging China Creek will be one of the recommendations to come out of updating the 2017 Basin Gage Master Plan.
- By jump starting purchase, installation, and calibration of a new China Creek gage now (ahead of completion of the Basin Gage Master Plan update), the City of Centralia and other Flood Warning System users can be ever-better prepared for upcoming 2022/23 flood season. [To not jump start and wait until after the Basin Gage Master Plan update is complete would be to effectively wait until the following year's 2023/24 flood season.]

List of Key Tasks & Assumptions:

- Updating the 2017 Basin Gage Master Plan will be accomplished through following broad tasks:
 1. Hydrometeorological Monitoring
 2. Flood Forecast and Warning System Improvements
 3. Final Report and Budget
- Read more [here](#).
- Establishing a new gage on China Creek (in advance of the finalization of the basin Gage Master Plan update, will consist of (broadly) of:
 1. Purchase
 2. Installation (maybe at new flow control weir)
 3. Calibration (two years, two flood cycles)
- Establishing a new gage on China Creek will cost \$35,000, can be completed in time for 2022/23 flood season (significantly before 6/30/2023), and will be maintained and operated through the Flood Authority's normal process (i.e., Lewis county as fiscal agent to the Flood Authority collects and disburses Flood Authority agreed upon annual O&M amounts from Thurston, Lewis, and Grays Harbor counties.)

Contact Information:

- Scott Boettcher, Staff
Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com



GAGE MASTER PLAN



October 18, 2017

Appendix F

CHEHALIS BASIN STRATEGY REQUEST FOR RESERVE 2021-2023 BUDGET FUNDS

7-06-2022

Brief Title of Request: Mill Creek Multi-Objective Implementation Plan, Phase II

Organization Making Request: Flood Authority on behalf of the City of Cosmopolis

Funding Request: \$25,000 to "Complete Significant Phase of Project"

Summary of 2021-2023 Funding & Work to Date:

- Mill Creek Project (Phase II) is a Chehalis Basin Strategy grant funded project. See RCO grant funding project website [here](#). [Mill Creek (phase I) was also a Chehalis Basin Strategy grant funded project. See [here](#).]
- Mill Creek Phase II Project is a design and costing project looking at design improvements and solutions for 4,500 ft. of Mill Creek culvert improvements.
- Cosmopolis is requesting \$25,000 to conduct additional surveying that will enable full completion of this stage of the Phase II project by 6/30/2022.

Description of Additional Needs:

- \$25,000 to conduct additional surveying that will enable full completion of this stage of the Phase II project by 6/30/2022.

List of Key Tasks & Assumptions:

- Additional surveying.

Contact Information:

- Scott Boettcher, Staff
Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com

Appendix G

City of
Aberdeen



City of
Hoquiam



June 23, 2022

Office of Chehalis Basin
Attn: Andrea McNamara Doyle
300 Desmond Dr SE
Lacey, WA 98503-1274

**SUBJECT: FRY CREEK PUMP STATION
2021-2023 MID BUDGET REVIEW REQUEST**

Ms. McNamara Doyle:

Both the Cities of Aberdeen and Hoquiam are extremely excited to advance the Fry Creek Pump Station given it is the first element of the Aberdeen-Hoquiam Flood Protection Project transitioning into construction. This generates immense momentum for the entire regional flood protection effort that has been underway for years.

This letter is intended to provide a simple framework for a request from the City of Aberdeen for an additional \$2.5 million dollars to complete the funding package for construction of the Fry Creek Pump Station as you consider potential OCB budget reallocations from your 2021-2023 budget.

To shed a little more light on this segment of the Aberdeen-Hoquiam Flood Protection Project, completion of the Fry Creek Pump Station will provide immediate benefit by dramatically increasing flood protection through replacement of the deteriorated tide gates with a new fish passage structure and also replacing existing significantly undersized pumps. This benefit will extend to over 700 privately owned properties with assessed structure values totaling almost \$135 million dollars based on 2021 assessed values.

The estimated construction costs for the project was \$16,080,000. The project was advertised in April 2022 and a bid opening was held on May 11, 2022. The apparent low bid total was \$17,554,244 with the second bidder at \$18,576,324. During the award phase it was discovered through protest that the basis of bid for the apparent low bidder was intending to supply a non-specified fish screen. All bids were recently rejected and the project has been re-advertised. We are anticipating the bid amount will be much closer to the second bidder when supplying the appropriate products, ultimately resulting in a net \$2,500,000 increase in the construction cost.

The partnership between the Cities of Aberdeen and Hoquiam and the Office of Chehalis Basin has been critical in helping us get to this exciting point. Over the past 6 years we have worked through design, permitting, right of way, and are now ready to initiate construction for this

regionally significant flood damage reduction project. The revised bid opening is scheduled for July 6, and we intend to celebrate this project reaching the construction phase with state, local, and congressional leaders on July 7. Our intent is to award a construction contract at the next Council meeting and physical construction work should begin in August. Even with our current funding gap, implementation of the Chehalis Basin Strategy through completion of our large-scale measures remains a critical priority to both Aberdeen and Hoquiam.

Critical infrastructure improvements of the Aberdeen – Hoquiam Flood Protection Project to provide both flood protection and restoration of aquatic species would not be positioned for success if not for the continued support of the Office of Chehalis Basin. The Office of Chehalis Basin has previously allocated over \$17.5 million dollars to Aberdeen-Hoquiam projects. We have been good stewards of these funds, spending them down in a timely fashion and wisely retaining funds for construction where appropriate. Of the previous allocations, approximately \$4,167,000 has been used in preliminary design for the North Shore Levee, approximately \$1,047,000 has been used for design of the Fry Creek Pump Station, and we have held \$7,740,000 for construction of the Fry Creek Pump Station. An additional \$4,600,000 was also allocated to the City of Hoquiam for Design of the North Shore Levee West. Both the North Shore Levee and North Shore Levee West will be in position for construction funding in the 2023-25 biennium. We have worked diligently to advance these projects and anticipate spending down all currently appropriated funds within the current biennium.

We hope there can be some grace and understanding given the existing market conditions every project is dealing with while we work to complete this first step of our regional flood protection focus. Any additional funds allocated by the Office of Chehalis Basin Board will immediately be utilized in our critical flood protection project and will be spent within 12 months.

We look forward to a continued partnership with the Office of Chehalis Basin as we work to complete this initial segment and work towards future segments of our large scale flood damage reduction measures. Building on the success of the Fry Creek Pump Station request, we will be requesting additional funds in the 2023-25 biennium for future elements of the flood reduction plan.

Thank you for your consideration and should you need any additional information, please feel free to let us know.

Sincerely,
City of Aberdeen

Nicholas D. Bird, P.E.
City Engineer

CC: STORM-2018-0002

Appendix H

CHEHALIS BASIN STRATEGY REQUEST FOR RESERVE 2021-2023 BUDGET FUNDS

7-06-2022

Brief Title of Request: Berwick Creek Flood Reduction and Restoration Project

Organization Making Request: Flood Authority on behalf of the Port of Chehalis

Funding Request: \$89,257 to "Pay Back Project"

Summary of 2021-2023 Funding & Work to Date:

- Berwick Creek Project is a Chehalis Basin Strategy grant funded project. See RCO grant funding project website [here](#).
- Berwick Creek Project is a design and permitting project that is currently underway. Initial design and cultural resources investigations have been completed. Final design is pending.

Description of Additional Needs:

- Port of Chehalis has requested \$89,257 for the Berwick Creek Flood Reduction and Restoration project to pay back the project.
- Funds were borrowed from the project to help with construction of last fall and winter's emergency Lower Satsop Right Bank Conservation project (see slides 4-6 [here](#)).
- Requested funds will aid with final design and completion of this phase of the project (as originally scoped and budgeted).

List of Key Tasks & Assumptions:

- None.

Contact Information:

- Scott Boettcher, Staff
Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com

Appendix I

CHEHALIS BASIN STRATEGY REQUEST FOR RESERVE 2021-2023 BUDGET FUNDS

7-06-2022

Brief Title of Request: Haul Road Immediate Protection Project

Organization Making Request: Flood Authority on behalf of the Port of Grays Harbor

Funding Request: \$400,000 to "Immediately Construct Urgent Project"

Summary of 2021-2023 Funding & Work to Date:

- Port of Grays Harbor has brought to CBB's attention need for immediate action to protect key infrastructure threatened by further erosion of Port's Haul Road from Chehalis River. See recent CBB presentations:
 1. 4/07/2022 – [Here](#).
 2. 5/05/2022 – [Here](#).
 3. 6/02/2022 – [Here](#).
- To date, Port's activities have centered around problem identification, solution identification, design, permitting, engineering, and regulatory coordination. Port has already received initial funding from CBB for these activities (i.e., \$125,000) as well as contributes its own funds in excess of \$100,000).

Description of Additional Needs:

- Port of Grays Harbor is requesting \$400,000 for an immediate action this Fall using bioengineering techniques (brush matts, root wad tree, timber piles) to protect a critical portion of the Port's Haul Road in time for upcoming 2022/23 flood season (and well before the end of biennium).
- Funding request will cover materials procurement, construction, oversight, and contingency (adaptive management). More specifically:
 1. \$300,000 -- Construction
 2. \$60,000 -- Construction contingency at 20% (adaptive management)
 3. \$40,000 -- Construction oversight, reporting, documentation
- The Port will follow this immediate project with an additional funding request through the Flood Authority's 2023-25 funding recruitment process to design and permit a continuation of this project Summer 2023. This project (immediate project) averts the immediate crisis. Next project (2023-25 project) will better address underlying conditions and provide the time needed to design reach-scale solutions.

List of Key Tasks & Assumptions:

- Key tasks for immediate project are:
 1. \$300,000 -- Construction
 2. \$60,000 – Construction contingency at 20% (adaptive management)
 3. \$40,000 – Construction oversight, reporting, documentation

[NOTE: Experience tells us erosion projects like this, especially when using innovative techniques like as are proposed, require holding a significant contingency as the construction environment is very dynamic and the need for on-the-fly adaptive management and subsequent documentation is always present.]

Contact Information:

- Scott Boettcher, Staff
Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com

No Longer Proposed Project

Initial Concept: "Rock Dump"

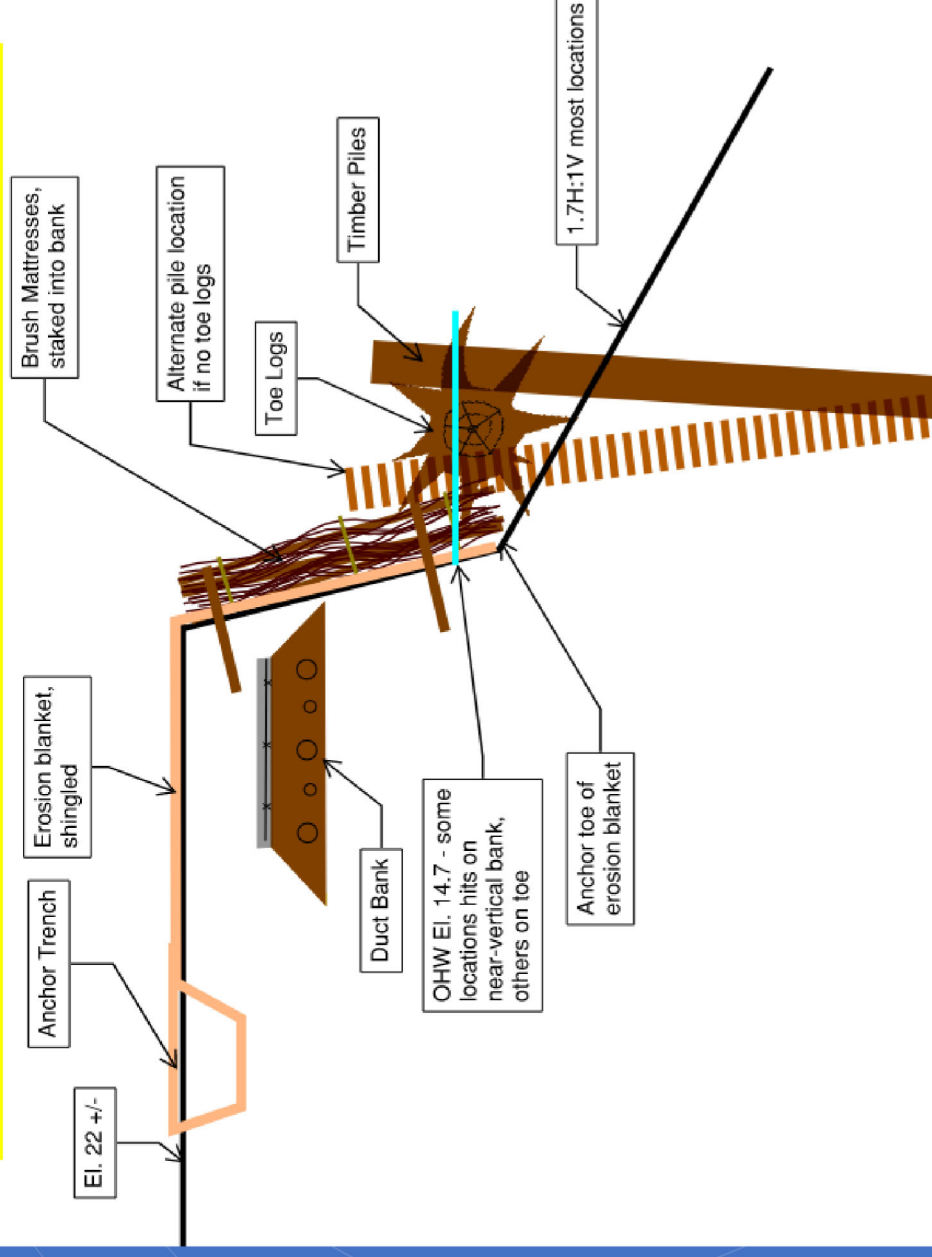


- ✓ Not favorable.
- ✓ Not permittable.
- ✓ Not fundable.
- ✓ Very Expensive.

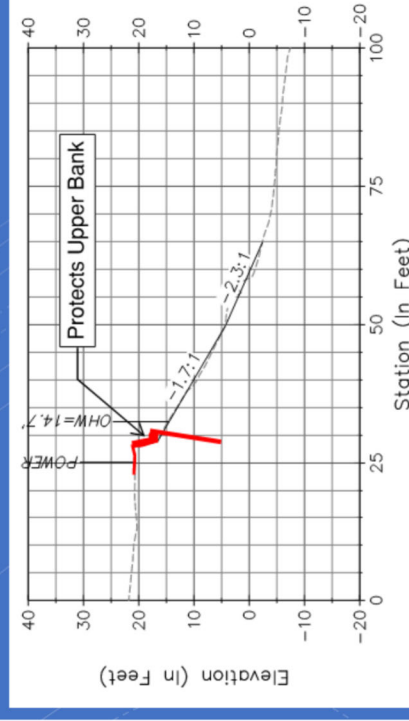
7/07/2022

Current Proposed Project

Current Concept: Brush Mattresses with Piles



- ✓ Favorable.
- ✓ Permittable.
- ✓ Fundable.
- ✓ Affordable.



2. Pros/Cons of Immediate Action Alternative

Pros	Cons
Provides some protection for the duct bank and haul road this flood season	Trades durability for permissibility, material availability, and constructability; not a long-term solution
Positive habitat Impact	Trial application of this method in these conditions
Permittable	Only protects the upper bank; does not address the full bank height
Uses readily available materials	Significant additional effort needed for long-term success
Can be constructed quickly	
Some potential for repair or maintenance	
Can be incorporated into the near-term design	
Provides time for design and permitting of the near-term option	
Additional time opens up additional materials and methods for consideration in near-term design	

3. Project Phasing

Phase	Actions
Phase I: <u>Immediate</u> Action (2022)	Design, permit, and construct brush mattress concept for upcoming flood season
Phase II: Near-Term Action (2023)	Design, permit, and construct Near-Term project to address full bank height in immediate project area
Phase III: Longer-Term Action (2025 and beyond)	Implement reach-scale project program generated by the Keys Road to SR-107 Reach Analysis and Investment Plan

4. Immediate Action Funding Request

A. Funding Partners:

1. Grays Harbor Energy -- \$50,000 [2023]
2. Grays Harbor PUD – In-Kind [2022]
3. Grays Harbor County -- \$TBD (0.09 funds) [2023]
4. ***

B. Immediate Funding Request:

1. Project Construction → \$300,000 (max.)
2. Project Oversight/Administration/Contingency → \$100,000 (max.)
3. Total = \$400,000 immediately.

C. Future Funding Requests:

1. Phase II
2. Phase III

7/07/2022

Appendix J

MEMORANDUM

Date: June 30, 2022
To: Nat Kale, Office of Chehalis Basin
From: John Ferguson (Anchor QEA) and Larry Lestelle (Biostream)
cc: Merri Martz (Anchor QEA)
Re: Cost Proposal to Collect Data on Adult Chinook Salmon Migration Timing into the Skookumchuck River Using Sonar Under an Experimental Low Flow Regime

Executive Summary

An experimental study is proposed to change the timing and volume of water released from the Skookumchuck Dam during late summer/early fall starting in 2022. The potential action would delay the required ramp-up in flow released from the dam that is initiated on September 1 to produce flow conditions that more closely mimic the historical (natural) flow pattern from mid-August through mid-October. The study is proposed for a three-year period.

The goal of the experiment is to increase the separation between spring-run and fall-run Chinook salmon spawn timing. Genetic analysis of Chinook salmon shows that substantial interbreeding has occurred between the spring- and fall-run types in the Skookumchuck River. This is causing a shift in the population structure of Chinook salmon, which disproportionately affects the spring-run compared to the fall-run type and has likely contributed to the decline of spring-run Chinook salmon. The proposed action is intended to learn if changing the flow regime during the August-September period back to the historical pattern would reduce the rate of hybridization between the run types.

Evaluation of the proposed action consists of three components. The first part would occur during the period when adult salmon move into the Skookumchuck River and spawn. The flow regime would be altered, which should delay the arrival of early migrating fall-run Chinook salmon and enable spring-run Chinook salmon that are already in the river to spawn without hybridizing with early arriving fall-run Chinook salmon. During this part of the study, a sonar camera would be operated in the lower river to monitor the arrival of early fall-run Chinook in August and September at a cost of \$103,781 in 2022. This memorandum focuses on this part of the study but provides information on both parts for context.

The second part of the study would occur during the months of January to May each year following spawning when fry produced by the spawners emerge and begin their migration downstream. The Quinault Indian Nation (QIN) has conducted a fry trapping project over the past three years, during which genetic analysis was done to assess genetic composition (spring- or fall-run or hybrid). Fry trapping as part of the experiment would continue for three years to provide the means of evaluating how the changed flow regime affected the genetic composition of the population. The cost of fry

trapping in 2023 and genetic analysis of the samples is still being discussed but is expected to be no more than \$260,000.

The third component of the study would be to analyze the complete set of available data related to the experiment and develop a project completion report. This would include 1) processing the sonar data from each year of study (2022-2024) to translate images into hourly and daily fish counts, 2) evaluating the sonar, fry genetics, observed flow record, and adult index count data (conducted each year under separate funding by WDFW) in an analytical framework to assess the effectiveness of the experimental flow regime, and 3) developing draft and final reports.

Purpose

A study was completed in 2021 titled *Initial Data Compilation and Analysis for Flood Damage Reduction and Aquatic Species Benefits at Skookumchuck Dam* and reported to the Chehalis Basin Board via a memorandum from Anchor QEA to the Office of Chehalis Basin dated September 24, 2021. The memorandum identified a potential near-term action to change the timing and volume of water released from the dam during fall to improve separation between spring-run and fall-run Chinook salmon spawn timing. The potential action delays the required ramp-up in flow released from the dam each year that occurs starting on September 1. The proposed (alternative) flow release schedule would start in mid-August and be in place until mid-October.

The goal of this proposed action is to reduce flow released during what is historically a low flow period from signaling to fall-run Chinook salmon that it is time to migrate into the Skookumchuck River and spawn. Fall-run Chinook salmon that arrive early to the spawning area may spawn with a spring-run Chinook salmon or dig up (place their redd on top of) a spring-run Chinook salmon redd. Both interbreeding and redd superimposition reduce the production of spring-run Chinook salmon in the basin. Delaying fall-run Chinook salmon migration timing by even a few weeks should provide greater separation in spawn timing between the two runs of Chinook salmon.

This memorandum outlines the background, monitoring approach, and cost to collect data on adult Chinook salmon migration timing into the Skookumchuck River using sonar starting in August 2022. The work proposed herein is directed at the adult phase of a study to evaluate the efficacy of the proposed action on adult Chinook spawning and the extent of interbreeding between the two run types. To be able to conduct a valid evaluation, work is also needed on the emergent fry produced by the spawners. That phase of the work would assess the genetic composition of the fry to evaluate the rate of interbreeding between the run types. This memorandum only briefly describes that separate phase of the evaluation—a full description of the integrated project is currently being prepared.

Background

On March 3, 2021, the Washington Department of Fish and Wildlife (WDFW) requested that TransAlta change the flow regime released from Skookumchuck Dam during fall due to recent observations of fall-run Chinook salmon moving upstream earlier now compared to historical migration timing (WDFW 2021). WDFW hypothesized that increased flows on September 1 may be triggering artificial freshet cues for fall-run Chinook salmon to begin their spawning migrations into the river from the Chehalis River. WDFW requested that the minimum flow be reduced from 120 cubic feet per second (cfs) to 95 cfs from September 1 to October 20 starting in 2021 and proceeding through 2025.

Chinook salmon evolved to segregate their timing on the spawning grounds between different genetically determined run types. Spring-run Chinook salmon enter the river during spring and early summer, while fall-run fish enter beginning in late summer and continue into fall. Their spawning timing also typically differs, with spring-run fish beginning to spawn before fall-run fish. WDFW has observed what are believed to be fall-run Chinook salmon entering the Skookumchuck River and spawning in the same locations or at the same time as what are believed to be adult spring-run Chinook salmon. Mixed spawning of the two run types can lead to a phenomenon called introgression, which is defined as the transfer of genetic information from one species to another. When the two Chinook run types interbreed, or hybridize, the viability of spring-run Chinook salmon is believed to be adversely affected. Spatial-temporal segregation of the two run types is necessary for the two populations to maintain their genetic identity and population structure that is critical to the long-term viability of the spring-run type.

Due to concerns that spring-run Chinook salmon abundance in the basin has declined from historical levels, in 2020 the Quinault Indian Nation (QIN) in partnership with the University of California Davis (UCD) began a project to capture and sample genetics of newly emerged Chinook salmon fry in several upper Chehalis River locations, including the Skookumchuck River. Results from that first year of study indicated that very few fry produced in the Skookumchuck River were pure spring-run Chinook salmon. For the Mainstem Skookumchuck trap site (river mile 6.2), 80.8% were fall-run Chinook salmon, 16.4% were heterozygotes (i.e., a mixture of spring-run and fall-run genetic material), and 3.0% were spring-run Chinook salmon (Gilbertson et al. 2021). That separate project has continued for three consecutive years. Results from year two of the project are comparable to those from the first year. Samples from the third year are currently being analyzed.

This proposal to collect data on adult Chinook salmon migration timing into the Skookumchuck River using sonar starting in August 2022 is one (bolded below) element of the proposed approach to evaluate how changing the regulated flow regime might reduce hybridization. The hypothesis is that restoring a more natural flow regime in the lower reaches of the Skookumchuck River would reduce the early entry

of fall-run Chinook into this river, as well as returning hybrids¹, and thereby reduce the rate of hybridization with pure spring-run fish. A complete list of all the required elements for context is as follows:

- Coordination between the Office of Chehalis Basin and TransAlta confirming the flow regime request can and will be implemented (Ecology and TransAlta; initiated; confirm in summer 2022; note the co-managers are also involved in these discussions)
- **Collect data on adult Chinook salmon migration timing into the Skookumchuck River using sonar (West Fork Environmental; mid-August to mid-October 2022)**
- Collect index data on adult Chinook salmon spawning (ongoing annual surveys in the Skookumchuck River conducted separately by WDFW; fall 2022)
- Chinook fry trapping (separate study) to collect samples to estimate the proportion of spring- and fall-run Chinook salmon fry, as well as hybrid fry, produced from spawning in fall 2022 (QIN and West Fork Environmental; winter and spring 2023); we note that the fry trapping project that occurred in 2020-2022 will need to be continued for the duration of the study and that trapping outside of the Skookumchuck River is needed to serve as a control that the results from Skookumchuck River study will be compared to
- Genetic analysis of fry samples collected in winter and spring 2023 (separate study; University of California Davis; 2023)
- Meeting among co-managers and scientific partners to discuss and agree on the analytical approach for analyzing the sonar, adult index count, fry trapping, and genetic tissue data to determine the effectiveness of the proposed action to provide greater separation in spawn timing between the two runs of salmon (all parties; 2022 and 2023); discussions between QIN biometricians, UCD, and Larry Lestelle (Biostream) have occurred, and a draft approach has been developed
- A report summarizing each of these bullets and results of the analysis on the effectiveness of the proposed action (TBD; 2023)

¹ / Hybrids between spring- and fall-run timed Chinook generally have an intermediate run timing between the two run types.

Experimental Flow Regime

The proposed action calls for managing pre-spawning and spawning flow releases from Skookumchuck Dam that reflect the natural pre-dam flow regime discharging into the Chehalis River for 3 years starting in 2022. Late August flow of approximately 30 cfs would be maintained through the month of September, and possibly into early October, to the extent this can occur based on required minimum flow releases from the dam and rain events. The proposed (alternative) flow regime attempts to mimic the historical natural hydrograph as much as possible during September and early October, while maintaining TransAlta flow diversion requirements and other water rights.²

Flow to be released from Skookumchuck Dam would be approximately 30 cfs plus the amount of water that is diverted by TransAlta at river mile (RM) 7.2. If TransAlta takes the full water right sufficient for one generator at the Centralia Big Hanaford power plant, the diverted flow would be 26 cfs. Therefore, approximately 56 cfs would be released from the dam through September. This includes water that is supplied to the WDFW Skookumchuck Hatchery from Skookumchuck Dam and returned to the river. Flow between Skookumchuck Dam and RM 7.2 would be approximately 56 cfs, which is also expected to aid spring-run Chinook salmon spawning. Flow between RM 7.2 and 0.0 would be approximately 30 cfs.

The amount of flow entering the Chehalis River will vary within and between treatment years and will be greater than 30 cfs when rainfall events occur that result in tributary inflow. Based on a review of data from 2007 to 2021 during September at the U.S. Geological Survey (USGS) gage located at RM 6.4 near Bucoda, Washington, flow is typically minimal, and the proposed approach appears feasible.

Sonar Proposal

Monitoring and enumeration of Chinook salmon entering the Skookumchuck River through the study period (August 15 to October 15) will be conducted each year starting in 2022 and continue for three consecutive years. A study team has been researching the best approach for monitoring adult Chinook salmon migration behavior and recommends the following:

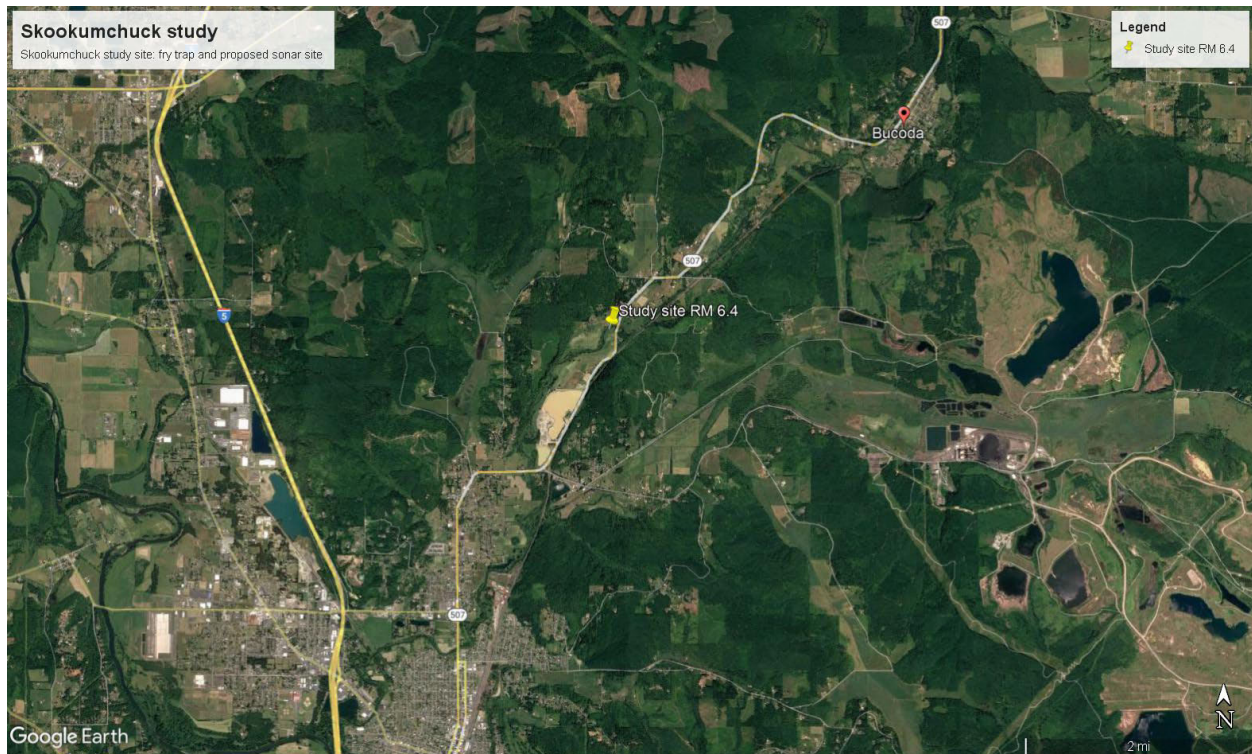
- Using advanced sonar technology (ARIS Explorer Model 3000; <https://www.oceanmarineinc.com/products/aris-3000/>), count the number of upstream and downstream adult Chinook salmon movements past a fixed location in the lower Skookumchuck

² / Some discharge from the TransAlta power generation facility occurs via Hanaford Creek into the very lower Skookumchuck River. Consideration will be needed for how much water is being delivered to the Skookumchuck River in this process in setting the target flow level for the lower end of the river.

River. This is state-of-the-art technology that works in zero visibility with high resolution up to 15 meters.

- The ARIS unit will be placed at a location just downstream of USGS gage near Bucoda, Washington (Figure 1). Landowner's permission has been obtained by West Fork Environmental for a secure site. The ARIS will be placed to scan across the river and monitor adult Chinook movements. The deployment will be visited by West Fork Environmental daily and data files will be downloaded daily for later analysis.
- Cost estimate for 2022: \$103,781

Figure 1. Proposed ARIS Location at the USGS Gage Near Bucoda, Washington





Need for Continued Fry Trapping and Genetic Analysis

A continuation of the fry trapping and genetic analysis for three years will be needed to evaluate if there are differences between the years prior to the flow regulation study and the years of the flow regulation study. Fry trapping is proposed for all sites assessed in 2020-2022 to assess extent and patterns of change for the Skookumchuck River and the other sites. The cost of fry trapping in 2023 and genetic analysis of the samples is still being discussed but is expected to be no more than \$260,000.

References

- Gilbertson, L., T. Jurasin, R. Coshaw, and M. Miller, 2021. *Run-Type Composition of Juvenile Chinook Salmon in the Upper Chehalis River Basin in 2020*. Technical Report Series 2021-1, Quinault Indian Nation Department of Fisheries, July 2021.
- WDFW (Washington Department of Fish and Wildlife), 2021. Letter from Peggy Miller and Mike Scharpf, WDFW, to Adam Abel, Skookumchuck Dam Supervisor, TransAlta. Regarding: Skookumchuck Hydroelectric Project FERC No. 4441, Exemption Article 2, Terms and Conditions – Minimum Flow. March 3, 2021.

Scott Boettcher

From: Scott Boettcher
Sent: Friday, November 11, 2022 7:26 AM
To: Scott Boettcher
Subject: FW: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds
Attachments: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

From: Ken Ghalambor <kghalambor@rossstrategic.com>
Sent: Tuesday, July 19, 2022 1:06 PM
To: Scott Boettcher <scottb@sbgh-partners.com>
Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Cool, then Andrea is supportive.

From: Scott Boettcher <scottb@sbgh-partners.com>
Sent: Tuesday, July 19, 2022 12:56 PM
To: Ken Ghalambor <kghalambor@rossstrategic.com>
Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

I think the \$20K was an earlier conceptual number. What was submitted on the request form was \$35K. See attached.
Scott

From: Ken Ghalambor <kghalambor@rossstrategic.com>
Sent: Tuesday, July 19, 2022 12:39 PM
To: Scott Boettcher <scottb@sbgh-partners.com>
Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Hey – Andrea's asking why the \$20K turned to \$35K. Is it just an oversight or is there something substantively different in terms of what's being proposed to purchase and install?

From: Scott Boettcher <scottb@sbgh-partners.com>
Sent: Tuesday, July 19, 2022 7:56 AM
To: Ken Ghalambor <kghalambor@rossstrategic.com>
Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Ok. Thanks. Note: Fully funding the \$35K request ensures the new China Creek gage will be installed, operational and tied-in to the Flood Warning System in time for this coming flood season. Note Also: Attached shows National Weather Service will add the new gage to their HADS system effectively allowing their weather forecast to consume real-time data from the gage (telemetry). This will only improve their forecast.
Scott

From: Ken Ghalambor <kghalambor@rossstrategic.com>

Sent: Tuesday, July 19, 2022 7:47 AM

To: Scott Boettcher <scottb@sbgh-partners.com>

Subject: Re: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Talking to Andrea today at 1130. She was on vacation all last week.

Sent from my T-Mobile 5G Device

Get [Outlook for Android](#)

From: Scott Boettcher <scottb@sbgh-partners.com>

Sent: Tuesday, July 19, 2022 7:45:59 AM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Ken – Any update on this?

Scott

From: Scott Boettcher

Sent: Tuesday, July 12, 2022 9:23 AM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Thanks Ken! Look forward to hearing back.

Scott

From: Ken Ghalambor <kghalambor@rossstrategic.com>

Sent: Tuesday, July 12, 2022 9:16 AM

To: Scott Boettcher <scottb@sbgh-partners.com>

Subject: RE: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Thanks, Scott. Let me look into this and will try to get back to you in a day or two. I'm slammed with meetings. My initial sense is that given the Board approved opening up the full reserve the added \$15K isn't going to be an issue to fund.

From: Scott Boettcher <scottb@sbgh-partners.com>

Sent: Monday, July 11, 2022 3:03 PM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Subject: FW: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Importance: High

Hi Ken. I realized my Friday email contained wrong attachment regarding Centralia gage. Correct one attached now. Please let me know about the \$35K.

Scott

From: Scott Boettcher

Sent: Friday, July 8, 2022 7:06 AM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Subject: China Creek Gage Funding Question -- FW: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Ken – At yesterday's CBB meeting the new China Creek Gage was described as \$20,000. In actuality the cost is \$35,000. See attached and below. How much of a deal is it to secure the full \$35,000? If its problematic to secure the remaining \$15,000 then I'll figure something else out. Just wanted to ask. Thanks, and good job pulling everything together at the last minute. And again, I'm sorry if I was a bottleneck along the way. Let me know. Thanks.
Scott

Sponsor	Project	Request	Request	Complete Project by June 30, 2023	Payback Project and/or Whole
Centralia	China Creek Floodwater Storage and Fish Habitat Project	\$ 643,000	\$ 643,000	Yes	Ye
Cosmopolis	Mill Creek Multi-Objective Implementation Plan, Phase II	\$ 25,000	\$ 25,000	Yes	n/
Port of Chehalis	Berwick Creek Flood Reduction and Restoration	\$ 89,257	\$ 89,257	No	Ye
Flood Authority	New China Creek Gage	\$ 20,000	\$ 35,000	Yes	n/
		\$ 777,257	\$ 792,257		

From: Scott Boettcher

Sent: Wednesday, July 6, 2022 8:36 AM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Cc: VRaines@co.grays-harbor.wa.us; Andrea McNamara Doyle <Andrea.Doyle@ecy.wa.gov>

Subject: RE: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Here's last.
Scott

From: Scott Boettcher

Sent: Wednesday, July 6, 2022 7:40 AM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Cc: VRaines@co.grays-harbor.wa.us; Andrea McNamara Doyle <Andrea.Doyle@ecy.wa.gov>

Subject: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds
Importance: High

Ken – Attached are 4 forms for you. Just got some outstanding information for the Haul Road request form. I'll have that last form to you shortly. Table 1 tallies Flood Authority funding request. I did not include \$75K for 2017 Basin Gage Master Plan update as I understood from you that that would be funded through OCB request. Correct?
Scott

<p style="text-align: center;">Table 1 Immediate Funding (7/07/2022 CBB Request)</p>
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Sponsor	Project	Request	Complete Project By June 30, 2023	Payback Project and/or Make Whole	Finish, Complete, Close Project (or Distinct Phase)
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Port of Chehalis	Berwick Creek Flood Reduction and Restoration	\$ 89,257	No	Yes	No
Port of Grays Harbor	Haul Road Immediate Protection Project	\$ 400,000	Yes	n/a	Yes
		\$ 1,192,257			

From: Scott Boettcher

Sent: Tuesday, July 5, 2022 4:09 PM

To: Ken Ghalambor <kghalambor@rossstrategic.com>

Cc: VRaines@co.grays-harbor.wa.us; Andrea McNamara Doyle <Andrea.Doyle@ecy.wa.gov>

Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Sending again. See attached.

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Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

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Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

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Thanks,
Ken

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Sent: Wednesday, June 29, 2022 2:32 PM

To: McNamara Doyle, Andrea (ECY) <mcma461@ecy.wa.gov>; Ken Ghalambor <kghalambor@rossstrategic.com>

Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

Subject: Re: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Getting close. Probably tomorrow.

Sent from my Verizon, Samsung Galaxy smartphone

From: Ken Ghalambor <kghalambor@rossstrategic.com>

Sent: Wednesday, June 29, 2022 2:17:17 PM

To: Scott Boettcher <scottb@sbgh-partners.com>; McNamara Doyle, Andrea (ECY) <mcma461@ecy.wa.gov>

Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Thanks. Did you get a final budget estimate on the Haul Road project needs too?

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Sent: Wednesday, June 29, 2022 12:11 PM

To: Ken Ghalambor <kghalambor@rossstrategic.com>; McNamara Doyle, Andrea (ECY) <mcma461@ecy.wa.gov>

Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Ken – Projects Committee met today and has developed a recommendation for the Flood Authority's Executive Committee. Following Executive committee review and approval, I'll transmit formal request to OCB. I'm trying to get all wrapped by end of this week.

Scott

From: Ken Ghalambor <kghalambor@rossstrategic.com>

Sent: Friday, June 24, 2022 11:40 AM

To: Scott Boettcher <scottb@sbgh-partners.com>; McNamara Doyle, Andrea (ECY) <mcma461@ecy.wa.gov>

Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>

Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Hi Scott,

It would be best to get the attachment back by early next week; the goal is to have something together at least a week in advance of the meeting on the 7th.

Thanks,
Ken

From: Scott Boettcher <scottb@sbgh-partners.com>
Sent: Friday, June 24, 2022 8:34 AM
To: McNamara Doyle, Andrea (ECY) <mcma461@ecy.wa.gov>
Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>; Ken Ghalambor <kghalambor@rossstrategic.com>
Subject: RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

Hi Andrea. Thanks for your email. Sorry I didn't get back to you yesterday. I had to go to Seattle (in other words I spent the day on I-5 and I-405). Responses below, as well a question.
Scott

From: McNamara Doyle, Andrea (ECY) <mcma461@ECY.WA.GOV>
Sent: Thursday, June 23, 2022 8:19 AM
To: Scott Boettcher <scottb@sbgh-partners.com>
Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>; Ghalambor, K <kghalambor@rossstrategic.com>
Subject: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds
Importance: High

Good morning Scott,
Ken and I need your help to reconcile the "Future Use Unallocated Funds" projects & amounts identified in this first table (from September 2021) with the second & third tables in your more recent memo (from May 2022). **OK**

Has the Flood Authority prioritized its requests yet for additional 21-23 "unallocated reserve" funds from the Chehalis Basin Board? Which of the project ideas in your May memo do you expect to be asking for Board funding at the July Board meeting? **Projects have not been prioritized yet per se. We have ideas. Knowing now that this will be on the agenda for July CBB I will work with Projects Committee and Executive Committee to prioritize.**

As I know you can appreciate, the Board's budgeting process is getting increasingly complicated. To assist in better organizing/evaluating the growing number of requests OCB's been getting for the reserved funds – and to help differentiate them from the new 23-25 requests that are also beginning to emerge – I'm needing to ask folks to submit information about "reserve funds" requests using this new attached standardized format. It's short, but collects all the basic relevant information, and will ensure a comparable level of detail among all requests, so that OCB Staff can develop options and recommendations for the Board. It will also allow Board members to review comparable information in advance of the July 7 meeting where the Board is scheduled to make some decisions about use of the 21-23 reserve funding. **YES, we will use the attachment. Makes sense. Question – If you need "in advance of July 7 meeting," when would that be?**

From Sept 2021:

Chehalis River Basin Flood Authority LOCAL PROJECTS FUNDING RECOMMENDATION \$4,050,000 (2021-23) Read more. View map.		A "Flood Damage Reduction"	B "Integrated Projects and Programs"	C Future Use Unallocated Funds
CONSTRUCTION				
1. GHC (GHCD) – Lower Satsop Restoration & Protection, Phase I/II Emergency Construction		\$3,561,405		
2. GHC (GHCD) – Lower Satsop Restoration & Protection, Phase I/II Emergency Permitting		\$425,000		
PLAN, STUDY, DESIGN, PERMIT				
3. Aberdeen – Fry Creek Phase IIIa		\$145,000		
4. Lewis County – South Fork Chehalis River/Boistfort Valley CMZ		\$60,000		
5. Cosmopolis – Mill Creek Multi-Objective Implementation Plan, Phase II		\$145,000		
6. Aberdeen – Farragut Street Pump Station		\$400,000		\$1,883,119
7. Hoquiam – 10 th Street Pump Station		\$375,000		\$1,829,167
8. Hoquiam – Queen Ave Pump Station		\$300,000		\$1,281,918
9. LCFD#1 – Chehalis Industrial Park Flood Conveyance/Flood Evacuation (Phase I)		\$445,300		\$901,700
10. POGH – Chehalis Riverbank Stabilization Study			\$60,000	
FISCAL AGENT, STAFF SUPPORT				
11. Lewis County – Flood Authority Fiscal Agent/Staff Support		\$193,295		
Total →		\$4,050,000	\$60,000	\$5,895,904
<i>Note: This recommendation was approved by the Flood Authority and unanimously recommended for advancement to the CBB for final consideration (7-15-2021 mtg).</i>				

From May 2022

Local Project Funding Needs Brought to Attention of Flood Authority

Sponsor	Study/Plan/Design Project	– Scale of Cost	Category
Port of Chehalis	Berwick Creek Flood Reduction and Restoration (Design) [Payback]	\$ 89,257	Existing (Make Whole)
Port of Chehalis	Chehalis Industrial Park Phase II (Design) [Holding]	\$ 359,021	Existing (Re-Scope)
Lewis County Comm Development [CRBFA (WEST)]	Update 2017 Basin Gage Plan	\$ 75,000	Existing (Flood Warning System)
Grays Harbor Conservation District	Keys Road Bridge to SR 107 Bridge Reach Investment Plan	\$ 140,000	Existing (Reach-Scale Planning)
Lewis County	S. F. Chehalis R./Boistfort Valley CMZ (Plan)	\$ 60,000	Existing (Reach-Scale Planning)
Cosmopolis	Mill Creek Multi-Objective Implementation Phase II (Plan)	TBD	Existing (Add'l Surveying)
Hoquiam (Grays Harbor Conservation District)	Hoquiam RV Park (Design)	\$ 20,000	New (Bank Stabilization)
Montesano	Engineering Study/Alternative Analysis of Two Flood Prone Drainages	\$ 100,000	New (Drainage Basin Analysis)
Hoquiam/Aberdeen/Cosmopolis	Multi-Jurisdictional Stormwater Comprehensive Plan	\$ 400,000	New (Regional Planning)
		\$ 1,243,278	

Sponsor	Construct/Implement Project	– Scale of Cost	Category
Lewis Conservation District	Farm Pads -- Improvements	TBD	Existing (Farm Pads)
Grays Harbor Conservation District	Farm Pads -- New	TBD	Existing (Farm Pads)
Lewis County Comm Development [CRBFA (WEST)]	Move Below Thrash Creek (recon and move)	\$ 15,000	Existing (Flood Warning System)
Lewis County Comm Development [CRBFA (WEST)]	China Creek Gage (purchase, install, 2-year calibration)	\$ 20,000	Existing (Flood Warning System)
Ecology	Salzer Creek Gage (reactivate)	TBD	Existing (Flood Warning System)
Port of Grays Harbor	Haul Road Project	\$ 2,200,000	Existing (Urgent Infrastructure)
Centralia	China Creek Floodwater Storage and Fish Habitat	\$ 643,000	Existing (Make Whole)
Aberdeen	Fry Creek Pump Station (cost inflation)	\$ 2,500,000	Existing (Pump Station)
Aberdeen	Division Street Pumping Improvements	\$ 500,000	New (Pump Station)
????	Streamflow gaging for DNR Forest Practices Evaluation (Larry Karpack)	TBD	New (Gages)
		\$ 5,878,000	

Local Projects Looking Ahead

(2)

5/18/2022

I know Ken has been trying to help collect all the requests from multiple sources, and you may have already given him some of this information. I apologize if this seems redundant, but I desperately need some better management tools at this point and appreciate your help transitioning to this new form.

~Andrea

Andrea McNamara Doyle (she/her)

Director | Office of Chehalis Basin

Mobile: 360.480.8564 | Email: andrea.doyle@ecy.wa.gov



This communication is a public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

Scott Boettcher

From: Scott Boettcher
Sent: Wednesday, July 6, 2022 7:40 AM
To: Ken Ghalambor
Cc: VRaines@co.grays-harbor.wa.us; Andrea McNamara Doyle
Subject: Forms For you ----- RE: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds
Attachments: Cosmopolis Mill Creek 7-06-2022 -- REQUEST FOR RESERVE 21-23 BUDGET FUNDS.pdf; Centralia New China Creek Gage 7-06-2022 -- REQUEST FOR RESERVE 21-23 BUDGET FUNDS.pdf; Port of Chehalis Berwick Creek 7-06-2022 -- REQUEST FOR RESERVE 21-23 BUDGET FUNDS.pdf; Centralia China Creek 7-06-2022 -- REQUEST FOR RESERVE 21-23 BUDGET FUNDS.pdf

Importance: High

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Cc: Raines, Vickie <vraines@co.grays-harbor.wa.us>; Ghalambor, K <kghalambor@rossstrategic.com>

Subject: Flood Authority Priorities for Requesting Chehalis Basin Board 21-23 "Reserve" Funds

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1. GHC (GHCD) – Lower Satsop Restoration & Protection, Phase I/II Emergency Construction		\$1,561,405		
2. GHC (GHCD) – Lower Satsop Restoration & Protection, Phase I/II Emergency Permitting		\$425,000		
PLAN, STUDY, DESIGN, PERMIT				
3. Aberdeen – Fry Creek Phase IIIa		\$145,000		
4. Lewis County – South Fork Chehalis River/Boistfort Valley CMZ		\$60,000		
5. Cosmopolis – Mill Creek Multi-Objective Implementation Plan, Phase II		\$145,000		
6. Aberdeen – Farragut Street Pump Station		\$400,000		\$1,883,119
7. Hoquiam – 10 th Street Pump Station		\$375,000		\$1,829,167
8. Hoquiam – Queen Ave Pump Station		\$300,000		\$1,281,918
9. LCFD#1 – Chehalis Industrial Park Flood Conveyance/Flood Evacuation (Phase I)		\$445,300		\$901,700
10. POGH – Chehalis Riverbank Stabilization Study			\$60,000	
FISCAL AGENT, STAFF SUPPORT				
11. Lewis County – Flood Authority Fiscal Agent/Staff Support		\$193,295		
Total →		\$4,050,000	\$60,000	\$5,895,904
Note: This recommendation was approved by the Flood Authority and unanimously recommended for advancement to the CBB for final consideration (7-15-2021 mtg).				

From May 2022

Local Project Funding Needs Brought to Attention of Flood Authority

Sponsor	Study/Plan/Design Project	~ Scale of Cost	Category
Port of Chehalis	Berwick Creek Flood Reduction and Restoration (Design) <i>[Payback]</i>	\$ 89,257	Existing (Make Whole)
Port of Chehalis	Chehalis Industrial Park Phase II (Design) <i>[Holding]</i>	\$ 359,021	Existing (Re-Scope)
Lewis County Comm Development [CRBFA (WEST)]	Update 2017 Basin Gage Plan	\$ 75,000	Existing (Flood Warning System)
Grays Harbor Conservation District	Keys Road Bridge to SR 107 Bridge Reach Investment Plan	\$ 140,000	Existing (Reach-Scale Planning)
Lewis County	S. F. Chehalis R./Boistfort Valley CMZ (Plan)	\$ 60,000	Existing (Reach-Scale Planning)
Cosmopolis	Mill Creek Multi-Objective Implementation Phase II (Plan)	TBD	Existing (AddT1 Surveying)
Hoquiam (Grays Harbor Conservation District)	<u>Hoquiam RV Park (Design)</u>	\$ 20,000	New (Bank Stabilization)
Montesano	<u>Engineering Study/Alternative Analysis of Two Flood Prone Drainages</u>	\$ 100,000	New (Drainage Basin Analysis)
Hoquiam/Aberdeen/Cosmopolis	Multi-Jurisdictional Stormwater Comprehensive Plan	\$ 400,000	New (Regional Planning)
		\$ 1,243,278	

Sponsor	Construct/Implement Project	~ Scale of Cost	Category
Lewis Conservation District	Farm Pads -- Improvements	TBD	Existing (Farm Pads)
Grays Harbor Conservation District	Farm Pads -- New	TBD	Existing (Farm Pads)
Lewis County Comm Development [CRBFA (WEST)]	Move Below Thrash Creek (recon and move)	\$ 15,000	Existing (Flood Warning System)
Lewis County Comm Development [CRBFA (WEST)]	China Creek Gage (purchase, install, 2-year calibration)	\$ 20,000	Existing (Flood Warning System)
Ecology	Salzer Creek Gage (reactivate)	TBD	Existing (Flood Warning System)
Port of Grays Harbor	Haul Road Project	\$ 2,200,000	Existing (Urgent Infrastructure)
Centralia	<u>China Creek Floodwater Storage and Fish Habitat</u>	\$ 643,000	Existing (Make Whole)
Aberdeen	Fry Creek Pump Station (cost inflation)	\$ 2,500,000	Existing (Pump Station)
Aberdeen	<u>Division Street Pumping Improvements</u>	\$ 500,000	New (Pump Station)
????	Streamflow gaging for DNR Forest Practices Evaluation (Larry Karpack)	TBD	New (Gages)
		\$ 5,878,000	

Local Projects Looking Ahead

(2)

5/18/2022

I know Ken has been trying to help collect all the requests from multiple sources, and you may have already given him some of this information. I apologize if this seems redundant, but I desperately need some better management tools at this point and appreciate your help transitioning to this new form.

~Andrea

Andrea McNamara Doyle (she/her)

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