



R & E Grant Application 23-25 Biennium

Project #: 23-004

Astoria High School Hatchery Upgrade

Project Information

Requested Cycle: 23-1
R&E Project Request: \$181,431
Other Funding: \$187,000
Total Project: \$368,431
Spending Start Date: 7/1/2023
Spending End Date: 6/30/2025
Project Start Date: 4/1/2023
Project End Date: 5/30/2024
Organization: Astoria High School

Fiscal Officer

Name: Mindy Landwehr
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Applicant Information

Name: Lee Cain
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Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Authorized Agent

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503-842-2741 x244
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Email: Ron.F.REHN@odfw.oregon.gov

Location Information

Where is it?

The project will occur on public land owned or managed by the applicant

Site Description

Street Address, nearest intersection, or other descriptive location.

1001 W Marine Drive

Directions to the site from the nearest highway junction.

From the intersection with Highway 101, go south along Highway 202 0.7 miles to Astori High School

Following project completion, public anglers will be allowed the following level of access to the project site:

No access

Please describe what leases, easements, agreements are in place to ensure angler access to the project site, and what is the length of each agreement.

Dominant Land Use Type:

Urban industrial/commercial

Project Location

General Project Location.

County: OR
Town/City: Astoria
ODFW Dist: Tillamook - North Coast
Stream/Lake/Estuary Name: Youngs Bay
Sub-basin: Lower Columbia River
Tributary of: Columbia River

Specific Project Location.

	Latitude	Longitude
	46 10.645'	-123 -50.966'

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

This project is seeking finding to replace the existing salmon and trout hatchery at Astoria High School. This includes replacement of rearing tanks, head tanks, incubators, rebuilding the Underlab, and installing new concrete floor and drainage trench. The result will be a safer more efficient hatchery that is ADA accessible.

Overall Project Goals

Describe the primary goals or outcomes of the entire project, including elements not requesting

funding from R&E.

Increase safety for students and staff by replacing flooring and drainage system which is a patchwork of uneven concrete and exposed drainage troughs. Grating will also be installed to cover exposed areas.

Increase efficiency of the fish rearing facility by replacing existing rearing ponds and tanks which are cracked and leaking causing loss of water. In addition to replacing head tank and plumbing establishing gravity fed flows to rearing areas.

Eliminate predation issues by adding coverings over rearing areas and tanks. This will directly address issues this site has experienced with otters.

Establish ADA access to Underlab and Fish Hatchery. Currently there is no ADA access to the Underlab/fish hatchery. Construction of a new ADA-accessible ramp to this area will eliminate that.

Increase rearing/experimenting capabilities. The new design will include the addition of more rearing tanks allowing for increased experimentation by students.

Primary objectives of R&E funding

Please describe the measurable objectives for the R&E portion of the funding request.

Site Survey, Engineering & Design. Conduct survey of facility, develop, and produce plans for remodel.

Demo of existing facility. A portion of R&E funds will be used to remove hatchery infrastructure including head tanks, rearing ponds and tanks, incubation, and flooring.

Replace upper head tank with new frame, tank, and plumbing (keeping high-pressure gravity feed to Underlab area). Re-plumb and establish gravity feed to the lower tanks and incubators.

Construct two sequential concrete raceways in the upstream area with sidewalk along one edge. This will reduce the difficulty of cleaning and facilitate anti-predator fencing in addition to addressing the current erosional sagging of the south side.

Pour new concrete flooring throughout the lower hatchery area and connecting to deck stairs creating even walking surfaces.

Rebuild drainage systems for facility and cover with walking grids to reduce safety hazards.

Replace old metal rearing tanks (rusting) with a new assortment of fiberglass/plastic composite raceways and round tanks. This will increase rearing and experimentation capabilities.

Install new incubator systems (new Heath trays + Redd Zone Deep Matrix recirculating unit). This replaces aging equipment in addition to increasing experimentation capabilities.

Construct an ADA-accessible ramp from deck to the Underlab area and rearing area.

Current Situation/Justification

Please describe the current situation and explain why this funding is needed.

Astoria High School students have reared salmon and trout since 1972. Most of the rearing tanks and the ponds were installed or constructed piecemeal in the 1980's with recycled materials. The metal rearing tanks are now rusting and falling apart, one concrete pond and one earthen pond that have erosion and access issues. River otters have periodically raided the

trout ponds in recent years, and it is nearly impossible to fence them out of the current configuration. There is currently no access to the Underlab (where salmon eggs and fry are reared) that is suitable for individuals with physical disabilities or wheelchairs. Additionally, the ground surface in this area is a hazardous patchwork of concrete and earthen banks. This proposal, if granted, will greatly help in carrying out educational and experimental exercises with about 65 fisheries students annually in fish identification, behavior and growth rate studies. Additionally, it will provide a safe working environment for students and staff, and improved hatchery efficiency.

Recreation and Commercial Benefit

This project will provide benefits to:

- Recreational fisheries
- Commercial fisheries

Explain how this project will contribute to current (and/or potential) fishing opportunities, access, or fisheries management.

The primary purpose of the Astoria High School STEP Program is education. However, fish releases may help supplement a small portion of the sport and commercial fisheries in the lower Columbia River, but due to its size it probably does not play any major role. The main benefit that the program provides is the increased awareness and understanding of fisheries resources that it develops in the students and community. This program is also involved in collaborative educational research projects with partners such as Clatsop County Fisheries (CCF) Project, National Marine Fisheries Service (NMFS), Columbia River Estuary Task Force (CREST), and others. Fish are fin-clipped prior to release and have the ability to contribute to the local fisheries.

Percent benefit split between Commercial and Recreational anglers:

- 50 % Commercial
- 50 % Recreational

Please explain, or justify, how the percentage split was determined:

Though production numbers are low fish are fin-clipped prior to release and have the ability to contribute equally to both commercial and recreational fisheries. Returning adults from this program are exposed to commercial harvesting in the ocean, and harvest through recreational fisheries in the ocean, Columbia River, and Youngs Bay areas.

This project has been identified as an ODFW priority for:

- Local/watershed

Does this project directly support implementation of the ODFW Strategic Plan and/or current Fish Division priorities?

Yes

This Program operates under the ODFW Salmon Trout Enhancement Program (STEP). STEP was created by the Oregon Legislature as a program of ODFW to aid in the recovery and sustainability of the state's native salmon and trout. As such, this Program is an important part of ODFW's mission and goals.

Please briefly explain when this was identified as a priority and what process or workgroup was used to identified this as an ODFW priority.

1981 by the Oregon Legislature with the creation of STEP.

Identify any plan or other document that identifies this priority.

25-Year Recreational Angling Enhancement Plan:
Strategies to Enhance Recreational Angling:

- Use hatchery fish, where appropriate, to enhance recreational fisheries.
- Educate the public regarding fish, fisheries, and the natural

Big Creek Hatchery Tule Fall Chinook Hatchery Genetic Management Plan: Identifies Astoria High School in Purpose(Goal) of Big Creek Hatchery Fall Chinook Program

Big Creek Hatchery Coho Hatchery Genetic Management Plan: Identifies Astoria High School in Purpose(Goal) of Big Creek Hatchery Coho Program

Is this project part of an approved Salmon-Trout Enhancement Program (STEP) activity?

Yes

Yes, Astoria HS Fish Hatchery is an approved STEP activity. The school's Fish Propagation Project was renewed by ODFW for another 5-years in 2021.

This project is intended to benefit the following species:

Fall Chinook Salmon

Coho Salmon

Rainbow Trout

This project will benefit anglers or fishery by providing:

Education/Outreach

Hatcheries/Propagation/Liberation

Education/Outreach

This project will:

Teach the public about fish (ecology, life history) and/or fish habitat needs

Teach the public about watershed health and it's relation to the health of fish populations

The main focus of this project is to:

Support established education program

Is this education/outreach associated with ODFW efforts?

Yes

STEP

This education/outreach effort will target:

Youth (< 18 years old)

Number of people targeted by this proposal:

65

Estimate the average amount of time that each attendee will participate in the proposed effort.

144

Explain the duration/frequency of the proposed outreach effort.

Astoria High School offers a two-year Aquatic Biology Program utilizing an experimental approach to science education, which has had tremendous local support and involvement. On average each student will spend 144 hrs. in the program during the school year. The unique curriculum covers salmonid biology, culture techniques, ecology, watershed dynamics, and experimental aquaculture research. Approximately 65 students per year are enrolled in the program. Of these, an estimated 5% historically go on to a fisheries-related or natural resources

career, with 10-15% going into some biological field.

Will the developed materials be available for use by other organizations or the public(i.e curriculum, teaching techniques, educational strategies, materials)?

No

Hatcheries/Propagation/Liberation

Hatchery Name:

Astoria High School Fish Hatchery

This is a:

STEP hatchery

As a result of this request hatchery production will:

Maintain

This project will:

- Restore, rehabilitate, modify, or replace existing production/acclimation facilities
- Add new or upgrade production/acclimation facilities/capacity.
- Improve safety of hatchery operations
- Improve staff efficiency of hatchery operations
- Improve effectiveness of hatchery operations (i.e. improve survival or return to angler)

Fish produced at this facility are for:

- Sport harvest
- Commercial harvest

Project Description

Schedule

Activity	Date	RE Funding
ODFW site survey	10/2022	No
Engineering survey and initial drafts	12/2022	No
Request for Proposals	02/2023	No
Demo old structures	06/2023	No
Reconstruction of head tank structure, concrete raceways, hatchery plumbing, walkways, and drainage system with grating. Installation of ADA access.	08/2023	No
Installation of new fiberglass/plastic composite rearing tanks, new incubation system, and complete final plumbing	10/2023	No
Construct an ADA-accessible ramp from deck to the Underlab area and rearing area.	10/2023	No
Submit Completion Report	11/2023	No

Permits

Permit	Secured?	Date Expected
	No	

Project Design and Description

Please describe in detail the methods or approach that will be used to achieve the project objectives.
 Lee Cain has provided the initial design ideas, which have been modified through discussion with ODFW staff and consultation with Astoria School District staff and Cardno (civil engineering services).

Engineering

Does the project involve capital improvement, engineering, site grading or other construction?

Yes

Part of an ODFW program like STEP

Project Management and Maintenance

What is the life expectancy of R&E funded construction, structures, equipment, supplies, data or fishery?

Life expectancy of funded construction expected to last a minimum of 40 years and equipment 30 years.

Who is responsible for long term management, maintenance, and oversight of the project beyond what is funded by R&E.

Students and staff are responsible for daily maintenance activities at the facility in addition to minor needs like small plumbing repairs, etc. Long term maintenance needs will be the responsibility of Astoria School District Maintenance Department.

Will the project require ongoing maintenance?

Yes

Ongoing maintenance needs consist of cleaning rearing tanks, incubation systems, and drainage troughs following use.

Is there a plan to collect baseline data and to conduct monitoring efforts to measure the effectiveness of the project?

No

Project Funding

Funding

Have you applied for OWEB funding for this project?

No

Has this proposal, or similar proposal for this project location, previously been denied by OWEB or other funding source?

No

Other Funding Source	Type	Secured	Dollar Value	Comments
Redd Zone Inc	In-Kind	Secured	17000	
Astoria School District High School Success Funds	Cash	Secured	135000	
Astoria High School Staff	In-Kind	Secured	35000	
		Total	187000	

Budget

Item	Unit Number	Unit Cost	In-kind or non-cash contributions	Funding from other sources	R&E Funds	Total Costs
PROJECT MANAGEMENT						
Astoria High School Staff	0	0.00	35000	0	0	35000
		Subtotal	35000	0	0	35000
IN-HOUSE PERSONNEL						
			0	0	0	0
		Subtotal	0	0	0	0
CONTRACTED SERVICES						
Survey, Engineering & Design	0	0.00	0	84466	0	84466
Demolition	0	0.00	0	17750	17750	35500
Permitting	0	0.00	0	4025	0	4025
Head Tank/Structure & Plumbing	0	0.00	0	5000	500	5500
Concrete Raceways, Sidewalks & Predator Fencing	0	0.00	0	0	74750	74750
Concrete Flooring, Drainage Gutters & Coverings	0	0.00	0	269	62981	63250
ADA-Compliant Ramps & Walkways	0	0.00	0	17250	12250	29500
		Subtotal	0	128760	168231	296991
TRAVEL						
			0	0	0	0
		Subtotal	0	0	0	0
SUPPLIES/MATERIALS						
			0	0	0	0
		Subtotal	0	0	0	0
EDUCATION/OUTREACH						
			0	0	0	0
		Subtotal	0	0	0	0
EQUIPMENT						
Fiberglass/Plastic Composite Rearing Tanks	0	0.00	0	0	13200	13200
Heath Tray Incubation Systems	0	0.00	0	6240	0	6240
Deep Matrix Incubation Systems	0	0.00	17000	0	0	17000
		Subtotal	17000	6240	13200	36440
FISCAL ADMINISTRATION						
			0	0	0	0
		Subtotal	0	0	0	0
		Budget Total	52000	135000	181431	368431

Internal Review Results

Review Score: 1.5 out of 3

(0 = Do Not Fund, 1 = Strengthen Proposal, 2 = Recommend, 3 = Strongly Recommend)

Specific Review Team Comments

This rearing system has been in need of upgrades for many years. Project will provide educational opportunities for many years. Suggest getting a letter from the school that commits to the program for the long term to justify the investment

AHS hatchery and educational curriculum is a great program to support. 65 students per year, 144 hours of exposure/education per participant. Upgrade would make facility ADA-accessible for students/faculty/visitors with physical limitations. Strengthen application by providing more information on fisheries methods, benefits, hatchery operation. Are the fish CWT to monitor return and contribution to fisheries? In-kind and match approx. 1/2 of overall project.

Pursue additional funding sources to help with the project, this is an expensive project that contributes minimally to sport or commercial fishing.

This is a lot of money to ask for from R&E and it is a STEP program. This project appears to almost entirely be for education of students in the program and doesn't appear to provide much benefit to the angler or the resource (due to the assumed low numbers of fish released). It would be easier to review if more info on the benefits of the hatchery in terms of fish numbers were given, especially for that high of a price tag

Specific Review Team Questions

What proportion of students continue on to a career in fisheries?

The primary purpose of the Astoria High School STEP Program is education, not recruitment, though some students have pursued careers in the natural resource field. It is difficult to get exact data on careers students choose after high school, but an estimated 5% of our students historically go on to a fisheries-related or natural resources career, with 10-15% going into some biological field. Examples of a few of our program graduates include the current District Fish Biologist for the Coos Coquille Watershed, the Gnat Creek and Umatilla Hatchery Managers, and the Environmental Education Specialist for the Tillamook Estuaries Partnership, an Assistant Project Leader of the Chum Reintroduction, and a Fisheries Technician for Idaho Fish & Game. In addition, many of our students are from commercial fishing families and continue that after high school. But to be clear, the main benefit that the program provides is the increased awareness and understanding of fisheries resources that it develops in the students and community to be good stewards. These students go on to lives that are affecting (and affected by) fisheries and natural resource issues. They receive a solid grounding in the science behind these issues and so can be a better informed and engaged citizenry. This program is also regularly involved in collaborative educational research projects with partners such as Warrenton High School Fisheries Inc. (WarHF, Inc.), Clatsop County Fisheries (CCF) Project, Skipanon Watershed Council, National Marine Fisheries Service (NMFS), Columbia River Estuary Task Force (CREST), North Coast Watershed Council Association, and others. These are made possible in a large part because of the hatchery facility, and will be enhanced and increased by the proposed improvements to efficiency, capacity, accessibility and safety.

Can this project be done in stages? Can you prioritize elements that need to be replaced first?

Due to site constraints and conditions it would result in program interruption and suspension of

the class if this project was done in phases. In order to rear fish and provide adequate access all elements would need to be completed as one project.

What does the in kind contribution of high school staff (\$35k) actually include? Is this the cost to administer the actual program or is it actually related to the proposed hatchery replacement?

The majority of this contribution goes towards the project planning/design by the district head of maintenance and educational staff, project oversight, and fiscal administration. It is directly related to the proposal.

Additional Files

Budget Information

Maps

Photos

[AHS facility](#)

Hatchery diagram and photos

Design Information

[AHS Fisheries-SD-2023-01-06](#)

AHS Hatchery redesign blueprints

[RoughDiagram_AHS Fisheries-SD-2023-01-06](#)

Edited blueprint

Management Plans and Supporting Documents

[Site Map](#)

Map

Permits and Reviews

Partnerships

[AHS_LetterofSupport](#)

Letter of Support

[letter of commitment](#)

Letter of commitment

[ODFW Commitment Letter](#)

Letter

Public Comment

Administrative Documents

[Signature Authorization Page](#)

Signature Authorization

Completion Report

Objectives and Accomplishments

Site Survey, Engineering & Design. Conduct survey of facility, develop, and produce plans for remodel.

Did you meet the objective? Yes

Yes, the engineering plans were developed and used for project construction and implementation.

Demo of existing facility. A portion of R&E funds will be used to remove hatchery infrastructure including head tanks, rearing ponds and tanks, incubation, and flooring.

Did you meet the objective? Yes

Yes, the demolition and removal of the existing infrastructure happened as planned.

Replace upper head tank with new frame, tank, and plumbing (keeping high-pressure gravity feed to Underlab area). Re-plumb and establish gravity feed to the lower tanks and incubators.

Did you meet the objective? Yes

Yes, the new Head Tank was installed, and plumbing was connected to the underlab.

Construct two sequential concrete raceways in the upstream area with sidewalk along one edge. This will reduce the difficulty of cleaning and facilitate anti-predator fencing in addition to addressing the current erosional sagging of the south side.

Did you meet the objective? Yes

Yes, this objective was met. Two new concrete raceways were installed, with a sidewalk, and new handrail.

Pour new concrete flooring throughout the lower hatchery area and connecting to deck stairs creating even walking surfaces.

Did you meet the objective? Yes

Yes, the old floor was demolished and a new floor was poured, making it much safer for students and staff working in the underlab.

Rebuild drainage systems for facility and cover with walking grids to reduce safety hazards.

Did you meet the objective? Yes

Yes, new grating was installed over the drainage systems. This significantly reduced the safety hazards from the old system.

Replace old metal rearing tanks (rusting) with a new assortment of fiberglass/plastic composite raceways and round tanks. This will increase rearing and experimentation capabilities.

Did you meet the objective? Yes

Yes, new 6' diameter, fiberglass rearing tanks were installed.

Install new incubator systems (new Heath trays + Redd Zone Deep Matrix recirculating unit). This replaces aging equipment in addition to increasing experimentation capabilities.

Did you meet the objective? Yes

Yes, the incubator system was installed.

Construct an ADA-accessible ramp from deck to the Underlab area and rearing area.

Did you meet the objective? Yes

Yes, a new ADA accessible ramp was fabricated and has been installed at the facility.

Comments

The project was a success. Thank you for the help!

Grantee agreed to forfeit all remaining funds.