Oregon Department of Fish and Wildlife
Salmon and Trout Enhancement Program

Fish Propagation Project Application

New: **Renewal:**

Project Name: Munsel Creek Coho Salmon Program

PART 1 – APPLICANT INFORMATION

Applicant: Florence STEP Group

501(c)(3) tax exempt status: **Yes** X **No**

Contact Name: Terry Barrett

Address: 87729 Sandrift Street

Florence Oregon **Zip:** 97439

Phone: 970-471-4796 **Email:** Tkbarrett4@yahoo.com

Signature: Terry R Barrett **Date:** 12-1-2021

A goal of the Salmon and Trout Enhancement Program (STEP) is to achieve the recovery and sustainability of Oregon's native stocks of salmon and trout. Through STEP, Oregonians can submit a proposal to ODFW and the Fish and Wildlife Commission to conduct a project consistent with this goal.

The following sections of the STEP Fish Propagation Project Application will ask you to provide the information needed to thoroughly review your proposed project and determine if it is consistent with STEP goals. The review will also determine whether a project is consistent with the Native Fish Conservation Policy (NFCP) and contributes to the broader goals of the Oregon Plan for Salmon and Watersheds (OPSW) to restore salmon runs, improve water quality, and achieve healthy watersheds.

As a STEP volunteer, become familiar with these important plans and policies that guide and direct STEP activities. As you complete this application, consider and explain how your proposed project will help STEP to achieve its goals and will contribute to Oregon's efforts to recover native fish and establish healthy watersheds.

PART 2 – TYPE OF REARING PROJECT AND OBJECTIVE

Fish Species to be Reared: Coho Salmon

Intent of Rearing Project (check only one):

- [X] **Type 1** Increase fishing and harvest opportunities
- [ ] **Type 2** Enhance existing natural production
- [ ] **Type 3** Restore fish to vacant habitat
- [ ] **Type 4** Develop broodstock

Note: OAR 635-009-0125 defines STEP fish propagation projects as the following:

Supplementation – A project involving continued planting to maintain or increase fish abundance where natural production is insufficient to meet management objectives (Type 1)
Rehabilitation – A project in which fish are released to rebuild a currently depressed run (Type 2 and 3)
Broodstock Development – A project in which reared fish are released and the resulting adults return to a recapture facility to provide an egg source for management program (Type 4)

Project Start Date: 11/01/2021 **Project End Date:** 11/01/2026

Project Duration:

If Type 1: [X] 5 years

If Type 2, 3, or 4:

[ ]	3 years	Coho salmon
[ ]	4 years	Chum salmon
[ ]	5 years	Chinook salmon
[ ]	4 years	Steelhead
[ ]	4 years	Trout

Note: Projects that continue beyond the above-listed time periods must apply for renewal at the end of that time period.

Describe how the proposed project *(please answer a/l that apply):*
(a) Addresses ODFW fish management needs as outlined in sub basin fish Management, species, recovery or conservation, or other plans *(please Cite specific plan, goal, objective, etc).*

The primary goal of this program is educating students and volunteers about salmon biology, critical life stages, and habitat requirements, which is strongly aligned with the aims of the Oregon Plan for Salmon and Watersheds. This program also abides by the goals and guidelines of the Oregon Coast Coho Conservation Plan, Native Fish Conservation Policy, and Coastal Multi-Species Conservation and Management Plan. This propagation project minimizes interactions with wild populations while providing hatchery Coho salmon for harvest.

(b) Will contribute to fisheries. Identify the fisheries and note any current special regulations such as "adipose fin-clipped only" that would affect the proposed project operation.

The Oregon ocean sport Coho fishery allows for the retention of adipose fin-clipped Coho salmon in the summer. Fish reared through this program are adipose fin-clipped and therefore available for harvest throughout the entire ocean Coho salmon season.

Current sport fishery regulations for the Siuslaw River allow for the retention of adipose fin-clipped Coho salmon that are incidentally caught during the in-river Fall Chinook fishery. As a secondary goal to education, this program will produce adipose fin-clipped Coho that could provide small harvest opportunities in the ocean and Siuslaw River sport fisheries.

(c) Addresses the factors limiting adequate natural production in the basin *(lack* of *spawning habitat, poor rearing habitat).* Also, please cite any information that supports that determination.

As identified in the Coastal Multi-Species Plan, habitat protection and recovery strategies generally prioritize areas that have the greatest potential for good to high quality habitat and water quality. These areas are generally located elsewhere in the Siuslaw Basin. Munsel Creek has a sandy bottom throughout the entire basin which greatly limits its potential for Coho spawning habitat. Volunteers have done some gravel augmentation projects in Munsel Lake tributaries to improve spawning habitat. Florence STEP also educates students about water quality and the effect of stormwater runoff and pollution on eggs and juvenile fish, which has been an issue at this STEP facility in the past.

(d) Contributes to other STEP, OPSW, and salmon and/or watershed recovery needs (education, citizen participation, other social benefit, etc.).

Trapping and spawning adults, incubating eggs, and rearing and releasing fry are all hands-on operations that attract volunteers to the Florence STEP Group. A nationally recognized "stream team" program at Siuslaw Middle School also utilizes this facility as a tool to teach students and volunteers. The Munsel Creek Coho Program aims to increase interest and participation in fish habitat protection and watershed restoration efforts throughout the basin.

(f) Is addressed under an existing Hatchery Genetic Management Plan or Hatchery Management Plan.

The Munsel Creek program is addressed under its own Hatchery Genetic Management Plan.

(g) Is consistent with the goals of the Hatchery Management Policy and the NFCP *(please answer all that apply):*

a. *Fosters and sustains opportunities for sport, commercial, and tribal fishers consistent with the conservation* of *naturally produced native fish.*

This program may provide a small bolstering effect for the local ocean sport fishery and provide for an incidental fin-clipped Coho fishery in the Siuslaw River. The program is consistent with Oregon state management plans and native fish policies by posing very little risk to native fish populations. Munsel Lake does not support a natural Coho population due to its natural lack of spawning habitat. Fish produced by this program are isolated from wild Coho populations, which reduces the risk of competition for rearing or spawning resources as well as genetic interactions between wild and hatchery stocks.

b. Contributes toward the sustainability of *naturally produced native fish through the responsible use* of *hatcheries and hatchery-produced fish.*

This program is isolated from most naturally producing native fish populations. This preserves the genetic integrity of native populations because juvenile wild fish do not have to compete with hatchery stock for limited resources. Returning adults produced from this program also bring back marine derived nutrients to the watershed, which may benefit the assemblage of naturally produced fish. Additionally, public education from the Munsel Creek program regarding watershed health and fish habitat directly benefits the sustainability of naturally produced native fish populations.

c. Maintains genetic resources of *native fish spawned or reared in captivity.*

Genetic impacts to the wild Siuslaw Coho population are minimized by homing instincts and through careful selection of the healthy brood stock. Wild Coho salmon from the Siuslaw Basin were used to establish the hatchery population and originally selected to represent the adult

return timing and spawning timeline of the wild Coho population. With NOAA Fisheries approval, wild Coho are still used for brood stock when hatchery fish are not available.

Fish are reared in plastic circular tanks that are supplemented with some natural live food. All fish are released in Munsel Lake at the summer parr stage. Once released, fish depend entirely on natural food sources. These rearing conditions provide more natural selection pressures on juvenile fish than a hatchery rearing environment, including recognition and competition for natural foods and predator awareness. These practices help maintain a robust hatchery stock that is well-suited to its natural environment.

d. Minimizes adverse ecological impacts to watersheds caused by hatchery facilities and operations.

Hatchery fry releases can impact wild fish populations. However, spatial separation of Munsel Creek Coho from Siuslaw wild Coho, along with the small size of the program, lessens these risks. The Munsel Creek program minimizes the potential impacts on wild Coho salmon by releasing fry into Munsel Lake, which does not have a naturally occurring Coho run due to the lack of natural spawning gravel in its mainstem and tributaries.

The number of fry released from this propagation program has also been taken into consideration, as fry may interact with naturally produced fry downstream in the Siuslaw River, or those that move upstream into Munsel Creek. Potential interactions between hatchery and wild fish have been minimized by setting the maximum release number at 10,000 fed fry. Coho fry released into Munsel Lake are also isolated from native fish populations by water temperature differences between the lake and creek in summer months. Cooler water temperatures (and increased food availability) in Munsel Lake encourage Coho fry to stay in the lake, rather than migrate into Munsel Creek. This naturally occurring thermal block lasts for 3-4 months each year and minimizes interactions with naturally-produced fish in Munsel Creek.

PART 3 – LOCATION OF REARING PROJECT OR FACILITY

County: Lane **Basin or Watershed:** Siuslaw

Stream: Munsel Creek

And one of the following:

Road Address: 24th Street and Willow Street, Florence OR

River or Stream Mile: 2.0

Legal (Township / Range / Section): T18S/R12W Sec 22

UTM Coordinate: Zone 10 N 0412305E 4871193N

Please include a map showing the project location within the watershed.

Other salmon, steelhead and/or trout species present in basin:

Species	Run	Hatchery or Naturally Produced?	State or Federally Listed?
Coho		Natural	Federally threatened
Chinook	Fall	Natural	
Coastal Cutthroat	Resident and Anadromous	Natural	
Chum		Natural	
Steelhead	Winter	Natural and hatchery	

List all other propagation programs in the basin or watershed:

Species	Responsible Agency or Organization	Number Released	Program Objective
Steelhead	ODFW/Florence STEP	85,000	Provide for hatchery steelhead harvest opportunities.
Steelhead	ODFW/NW Steelheaders	15,000	Provide for hatchery steelhead harvest opportunities.

If other propagation programs exist, what is the relationship of the proposed project to these other programs?

There is no longer a strong working relationship between the Munsel Creek Hatchery and the Siuslaw winter steelhead program. Florence STEP volunteers do incubate a small number of winter steelhead eggs at the facility for the Egg to Fry Program, but the Munsel Creek Hatchery is no longer used to incubate winter steelhead eggs for the 85,000 lower Siuslaw Basin release. Instead, eggs and milt are transferred from the Whittaker Creek trap directly to the Alsea Hatchery after spawning.

PART 4 – OPERATION

PART IV - OPERATION

Please explain the proposed operation including the following *(where applicable)* or attach a copy of the existing Hatchery Genetic Management Plan (HGMP) or Hatchery Management Plan (HMP):

(a) Source of brood stock.

Initially 100% of the brood stock was from Siuslaw stock 38W. The program now utilizes mostly returning hatchery Coho, when they are available. Wild Coho are used when hatchery returns do not cover brood stock needs.

(b) Number of eggs needed.

Approximately 12,000

(c) Number of brood stock (males and females) needed.

5 Males and 5 Females

(d) Mating procedures.

Fish will be spawned in a 1:1 ratio in a 3x3 matrix.

(e) Number of fry needed.

10,000

(f) Number of fingerling needed.

NA

(g) Number of pre-smolt needed.

NA

(h) Number of smolt needed.

NA

(I) Anticipated or historical losses at each stage.

Historical losses at the egg stage have ranged from 45 percent in the late 1990's to about 18 percent from 2006 to 2010. There was a 100 percent egg loss in 2013 due to unknown water quality issues in Munsel Creek. The high iron content of Munsel Creek used to be a challenge to manage during the egg incubation stage, so the water source for egg incubation was switched to city water and later rain water via a storage basin. Many facility improvements have been made over the years and new technology is always under consideration to improve operations. Egg loss is anticipated to stay around the 18 percent range for the foreseeable future. Fry loss is usually around 5 percent. Fish are inventoried at the fin-clipping event, and total fry loss is calculated from that number.

(j) Anticipated or historical number of adult returns resulting from rearing project.

When this project was first implemented, fish were not marked. Currently all Coho juveniles released into Munsel Lake are marked with an adipose clip to identify them as hatchery fish available for harvest. Past trap records show an average of 30-50 fin-clipped Coho salmon returning to the Munsel Creek trap each year, and it wasn't uncommon to capture wild Coho salmon as well. For the past several years, Coho returns to the Munsel Creek trap have been minimal and sometimes completely absent, even when fry were released 3 years prior.

(K) How returning adults will be collected.

Brood stock is captured at the Munsel Creek trap and held in PVC tubes until spawned. When there are inadequate returns to the Munsel Creek trap, in-river capture methods may be utilized to obtain brood stock. Coho salmon may also be collected at the Whittaker Creek trap in the future to meet brood stock needs.

(I) Disposition of collected adults.

Both wild and hatchery adults not used for brood stock are passed upstream. There are several locations in the Munsel Creek system where artificial spawning channels have been created for returning adults. Adults used for brood stock are kill spawned, and their carcasses are placed in Munsel Creek for nutrient enrichment.

(m) Other projects that may receive eggs or reared fish from this project.
No other projects will receive eggs or reared fish from this project.

Release Program (summarize proposed fish releases):

Number Released	Date of Release	Size (fish/lb) or Stage	% Marked	Release Location
10,000	**May 2022**	**fed fry**	**100**	**Munsel Lake**
10,000	**May 2023**	**fed fry**	**100**	**Munsel Lake**
10,000	**May 2024**	**fed fry**	**100**	**Munsel Lake**
10,000	**May 2025**	**fed fry**	**100**	**Munsel Lake**
10,000	**May 2026**	**fed fry**	**100**	**Munsel Lake**

If fish are marked, please describe the type of mark and the reason for marking.
100 percent of fish are marked with an adipose fin-clip so they are identifiable as hatchery fish that can be retained as part of the sport fishery.

PART 5 – FACILITY INFORMATION

Please describe - or provide attachments that describe· the facility including:
(a) Design - include a diagram or sketch that shows structures, water diversions, water distribution system, settling ponds, fish ladders, adult traps, etc.
See Appendix A.

(b) Water supply· identify source, quantity available, quantity needed, and provide existing water quality and temperature (daily, weekly, monthly) data.

The City of Florence installed a metered water service to the hatch house in 2016. Treated city water can be used for egg incubation, but rain water is currently collected and utilized during the egg incubation process. The facility can also obtain up to 60 gallons of water per minute from Munsel Creek. Pumps are enclosed in a 1/16-inch mesh screen box. Munsel Creek originates from Munsel Lake and seepage from 10 miles of dunal aquifer. The Munsel Creek Hatchery, as a STEP facility, is not required to have a water right. Water temperature and chemistry are not affected by the hatchery operations employed at the site. The water quality at the hatchery is at times low in pH and oxygen due to seepage of water from the dunal aquifer and heavy organic loading in the creek. Munsel Creek has very high iron content all year and produces an iron oxide flocculent when aerated. The water quality profile of Munsel Creek may limit the production of Coho in both the natural and hatchery environment. Hatchery intake screens are consistent with NMFS screening guidelines to minimize the risk of take/entrainment of wild juvenile fish during water withdrawal. No juvenile fish or fish parts have ever been found in the header tanks where water is pumped. Water temperature is recorded continuously during hatchery operation. Temperatures range from the low 40's to the low 60's.

(c) Incubation, rearing, and/or brood stock holding facilities· dimensions, capacity, water required, etc.

The Munsel Creek Hatchery is now using the Redd Zone chilled fog incubation system and a "Best Fry" Deep Matrix Incubator (added in August of 2016). The "Chilled Redd" single door

unit uses only 2 gallons of water per day and is capable of incubating 150,000 Coho salmon eggs. Rain water will be used for egg incubation. Two 24V circulation fans and a nebulizer run off of a 24V transformer. The Redd Zone "Best Fry" Deep Matrix Incubation unit was also added in August of 2016 for Coho alevin. This unit will be fed by creek water at 6 gal/min.

There are also two stacks (20 trays) of Heath incubators that will be stored as a backup system for the Redd Zone incubator. Each stack receives six gallons of water per minute. Incubating water temperatures range from 40 to 54 degrees F. When in use, the inflow is monitored daily and maintained at 6 gallons/min. Filters and egg trays are cleaned daily to remove silt and debris. A maximum of 6,000 Coho eggs are placed in individual incubator trays. The facility also has two 500-gallon circular tanks used for fry rearing. Each tank is equipped with an electric feeder and receives water from Munsel Creek.

Florence STEP transports up to 10,000 fin-clipped fry from the rearing tanks to upper Munsel Lake in a small liberation tank with a 12-volt aerator. Transport time is less than twenty minutes.

Back-up systems at the hatchery include a low-water alarm and automatically reduced flows if the system loses its water supply. Three volunteers who are familiar with the system are on an emergency phone list to respond to the facility within 20 minutes of any alarms.

(d) Adult trapping, holding and handling facilities.
Coho brood stock are collected at the adult trap on Munsel Creek. This is a gorilla cage/raceway design trap. Gorilla cage traps are made of steel pipes with a fyke at the entry point. If needed, brood stock can be collected from the lower Siuslaw River using a seine net. If adults are not spawned when captured, they are held in PVC tubes placed in quiet water areas with fish oriented upstream. Brood stock are spawned at the trap site and their eggs and milt are transported to the Munsel Creek hatchery facility for fertilization.

(e) Water treatment (if applicable) and discharge process. Please also note whether a National Pollutant Discharge Elimination (NPDES) Permit is required.

Eggs are treated with a weak iodine solution once a week to control fungus. Formalin treatments are no longer used due to concerns with water quality. If a bacterial pathogen requires treatment with antibiotics, a drug sensitivity profile will be generated when possible. Fish health monitoring will be carried out by Florence STEP volunteers under the direction of ODFW. No egg or fry treatments (other than the weak iodine solution) will be used without prior approval from ODFW. No NPDES permit is required.

(f) Known existing or potential disease issues or considerations.
There have been no known disease issues with Coho at the Munsel Creek facility.

(g) Process for disease monitoring.
Fish are observed for signs of disease while feeding. Mortalities are removed from the rearing tanks as soon as possible. ODFW fish pathologists are consulted if high mortality or unusual fish behavior is observed, and fish are treated per pathologist's prescription.

(h) Anticipated facility operation and maintenance costs.
Operation and maintenance of the Munsel Creek facility costs between $200-500 annually. Much of this cost is covered by Florence STEP members and local citizens who donate money, time and equipment/materials.

Documents attached that demonstrate legal access to the site or property rights:

Lease(s)	☐	Access Agreement	X
Option(s)	☐	Water Right	☐
Easement	☐	Other written Authorization	☐

Attach a written statement from the appropriate local planning authorities of the county or jurisdiction within which the proposed facility is located stating whether the proposed operation is in compliance with all local comprehensive land-use and/or estuary plans.

> Note: It is the responsibility of the project sponsor to obtain all water rights, access agreements, easements, use permits or any other permits needed to undertake the project.

PART 6 – PROJECT MONITORING AND EVALUATION

Please explain how this project will be monitored and evaluated and by whom (volunteer, ODFW or other) including:

(a) Monitoring for disease.
Fish are observed for signs of disease while feeding. Any mortalities are removed. ODFW fish pathologists are consulted if high mortality or unusual fish behavior is observed, and fish are treated as per pathologist's prescription.

(b) Monitoring of juvenile survival and/or distribution (if applicable).
Fry survival is monitored on a daily basis during feeding and calculated when fish are inventoried during fin-clipping prior to release into Munsel Lake.

(c) Monitoring of adult returns to this or other collection facilities (if applicable).
Adult returns will be monitored at the Munsel Creek trap downstream of the incubation and rearing facility.

(d) Monitoring of adult returns to natural spawning areas (if applicable).
NA

(e) Contribution to sport or commercial fisheries (if applicable).
NA

(f) Estimated monitoring costs.
There are no additional monitoring costs beyond the estimated costs for operation and maintenance.

If this is a project renewal, please identify or provide a summary of past monitoring information including:

(a) Results of disease monitoring (please attach appropriate reports).
No Coho disease issues have been observed or recorded at this facility.

(b) Results of any surveys (juvenile, adult trapping, spawning, creel, etc).
NA

(c) Reports, management plans, technical documents, or journal articles that reference the project.
NA

Please identify any potential social consequences resulting from project returns and how those will be monitored or evaluated.

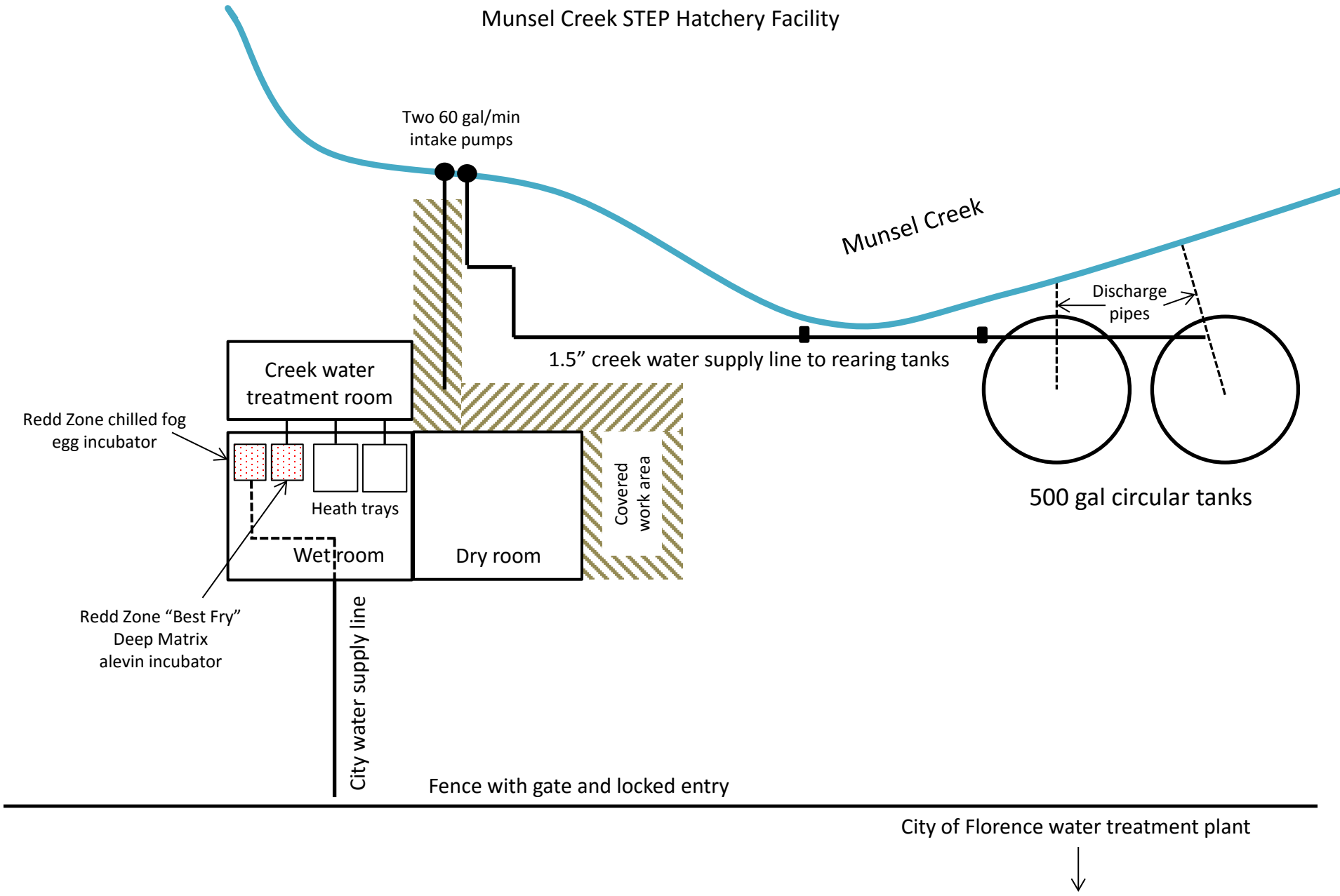
To date no negative social consequences have occurred as a result of this program, other than vandalism to the Munsel Creek trap from transient campers in the area.

PART 7– OTHER SUPPORTING INFORMATION

Please attach additional documents or provide information that details the project history, how the project may have evolved from the original design, or any changes / improvements that have been made to the operation.

The Redd Zone chilled fog incubator was added in August 2016. It uses only 2 gallons of water per day. Stored rainwater is used for egg incubation, with treated city water as a back-up source. The “Chilled Redd” single door unit is capable of holding 150,000 Coho salmon eggs. Water hardened eggs are loaded on trays, slid into position and oxygenated by continuous 100% humidity. The Redd Zone “Best Fry” Deep Matrix Incubation unit was also added in August 2016 to aid in the development of Coho alevin. This unit is fed by creek water at 6 gal/min. Each incubator comes equipped with an appropriately sized hatch plate for the species being raised.

Appendix A


Munsel Creek STEP Hatchery Facility
Two 60 gal/min
intake pumps
Munsel Creek
Discharge
pipes
1.5” creek water supply line to rearing tanks
Creek water
treatment room
Redd Zone chilled fog
egg incubator
Heath trays
Covered
work area
Wet room
Dry room
500 gal circular tanks
Redd Zone “Best Fry”
Deep Matrix
alevin incubator
City water supply line
Fence with gate and locked entry
City of Florence water treatment plant

Oregon Department of Fish and Wildlife
Salmon and Trout Enhancement Program

ACCESS AGREEMENT

This Agreement is entered into this 15th day of October 2021, by and between the City of Florence, hereinafter called **Grantor** and the State of Oregon, acting by and through its Department of Fish and Wildlife, hereinafter called **Department.**

Whereas Grantor owns certain real property described in the attached Exhibit A and,

Whereas the Department wishes to authorize a Salmon and Trout Enhancement Program (STEP) project at a project site which is located on that property described in the attached Exhibit A. The STEP program is described at http://www.dfw.state.or.us/STEP/.

In consideration for this agreement, grantor shall be allowed to receive the benefits of the STEP project in exchange for the access conferred by this agreement.

Terms and Conditions of this Agreement

1. Grantor herein grants the Department and its representatives access to the project site, which is located on that property described in Exhibit A for the purposes of operating a STEP project.
2. Grantor reserves the right to use the property described in Exhibit A for any and all purposes which do not preclude, restrict, or interfere with the purpose of this Agreement. With prior notice, the Department will agree to access adjustments to accommodate the primary uses of the land (potable water treatment, Public Works operations, and active park).
3. This Agreement is for the term of five (5) years beginning on the 1st day of November, 2021 and ending on the 1st day of November, 2026 or until such time as the STEP project is terminated by the Department, whichever occurs first. If the project is terminated prior to the expiration date, access for the Department and its representatives will remain in effect for as long as fish or eggs under artificial propagation remain on the project site. The Department will inform the City of Florence of its plan for removing fish, eggs, and all improvements at the time the project is cancelled.
4. The Department wishes to utilize potable water for their hatchery operation. Grantor will provide a metered water service at its expense and Florence STEP will reimburse Grantor for any water usage at Grantor's current commercial water rates on a monthly basis. During extended periods of no water usage, Grantor will not invoice the Florence STEP group.
5. The State of Oregon agrees to be responsible for any danger or third party liability which may arise from the installation, maintenance, and operation of the STEP facility subject to the limitations and conditions of the Oregon Tort Claims Act, ORS 30.260 and through 30.300 and the Oregon Constitution Article XI Section 7, to the extent of liability arising out of negligence of the State. Provided however, the State shall not be required to

indemnify or defend the Grantor for any such liability arising out of wrongful acts of the Grantor, its employees, agents, or invitees.

6. Either party may terminate this Agreement by providing written notice 120 days in advance to the other party. Upon termination, all rights and obligations of the Department to use the City of Florence property will cease. If the project is terminated, access for the Department and its representatives will remain in effect for as long as fish or eggs under artificial propagation remain on the project site. The Department will inform the City of Florence of its plan for removing fish, eggs, and all improvements at the time the project is cancelled.
7. This agreement does not provide access for the public to the facility area or other property of the Grantor.
8. The primary Department contact for the STEP project will be Christine Clapp, Mid Coast STEP biologist, (541) 961-6386.

Agreement Binding
This Agreement is binding on and inures to the benefit of the parties and their respective successors or assigns.

Grantor:
ERReynolds

Erin R Reynolds
NAME(S)

Florence City Manager
NAME(S)

Date 11/9/2021

Department:

Christine Clapp
NAME

Mid Coast STEP Biologist
POSITION

Date 11/10/2021

Attachment: Exhibit A – Property Description

Exhibit A

Location of the Munsel Creek STEP facilities in Florence, Oregon