

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

A. Background

1. Name of proposed project, if applicable:

Conversion from Raising Atlantic Salmon to Raising Sterile All-Female Triploid Rainbow Trout/steelhead at Existing Marine Net Pen Sites in Puget Sound, Washington

2. Name of applicant:

Cooke Aquaculture Pacific, LLC

3. Address and phone number of applicant and contact person:

P.O. Box 669, Anacortes WA 98221
Kevin Bright, Permit Coordinator (360) 391.2409

4. Date checklist prepared: Revised July 23, 2019

A draft SEPA Checklist was submitted to WDFW on April 25, 2019. After review and comment by WDFW, this revised SEPA Checklist, dated July 23, 2019, was prepared and submitted to WDFW, WDOE and WDNR along with the SEPA Additional Information documents, a Threatened and Endangered Species Effects Analysis, and other permit application supporting information. See Attachments A through E, identified in the list of environmental information prepared for the application (Section A.8 below).

5. Agency requesting checklist:

Washington Department of Fish and Wildlife

6. Proposed timing or schedule (including phasing, if applicable):

Permit approvals are sought by September 1, 2019 in order to transfer smolts currently growing at the Cooke Aquaculture hatchery in Thurston County to one or more of the marine net pen sites.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No. Cooke Aquaculture has no plans for future additions or expansion of existing operations at its existing Puget Sound marine net pen sites.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Finfish Aquaculture Plan of Operations, All-Female Triploid Rainbow Trout (Oncorhynchus mykiss).
Cooke Aquaculture Pacific, LLC (updated January 18, 2019).

Fish Escape Prevention, Response & Reporting Plan. Cooke Aquaculture Pacific, LLC (updated October 12, 2018).

Regulated Finfish Pathogen Reporting Plan, Cooke Aquaculture Pacific, LLC (updated January 25, 2017).

SEPA Checklist Attachment A: Troutlodge Triploid Testing Results (2018).

SEPA Checklist Attachment B: Additional Information: Response to WDFW Questions (July 23, 2019).

SEPA Checklist Attachment C: Rainbow Trout Net Pen Aquaculture Annotated Bibliography (July 23, 2019).

SEPA Checklist Attachment D: Threatened and Endangered Species: 1990 PEIS Update (July 23, 2019).

SEPA Checklist Attachment E: Curriculum Vitae for Don Weitkamp, Ph.D. and Walton Dickhoff, Ph.D., Technical Experts who Prepared the Annotated Bibliography, Contributed to the Additional Information Document (SEPA Checklist Attachment B), and Prepared the Threatened and Endangered Species Effects Analysis (July 23, 2019).

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No. There are no applications pending for governmental approvals of other proposals directly affecting the existing Cooke Aquaculture marine net pen sites.

10. List any government approvals or permits that will be needed for your proposal, if known.

Permit or Approval Required	Agency
Marine Finfish Aquaculture Permit Reapproval of existing permit (March 19, 2019) to change species cultured from Atlantic Salmon to all-female triploid (sterile) Rainbow Trout/steelhead	WDFW
NPDES Permit Modification for change of use to include alternate species such as sterile Rainbow Trout/steelhead and other possible native fish species at existing marine net pen sites ¹	Ecology
State-owned Aquatic Land Lease amendment to include culturing native fish species (all-female sterile Rainbow Trout/steelhead) at existing marine net pen sites	WDNR
Fish Transfer Permits to transport fish from the Cooke Aquaculture hatcheries to the marine net pen sites	WDFW

¹ Existing NPDES permits for the Fort Ward, Orchard Rocks, Clam Bay and Hope Island net pen facilities were renewed by the Washington Department of Ecology on July 11, 2019. Copies of the new NPDES permits are included by reference.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

Cooke Aquaculture Pacific, LLC (Cooke) is a Washington company that operates commercial marine net pens in Clallam, King, Kitsap and Skagit Counties, and two freshwater hatcheries in Thurston County. The company's facilities have been commercially raising and harvesting farmed salmon in the Puget Sound region since the 1970s. The net pen farms initially raised various types of salmonids including Coho Salmon, Chinook Salmon, Donaldson Rainbow Trout and steelhead trout. By the early 1990s, the Washington industry transitioned to raising primarily Atlantic Salmon. Cooke is proposing to change the fish species being cultured from Atlantic Salmon (*Salmo salar*) to domesticated stocks of all-female triploid Rainbow Trout/steelhead (*Oncorhynchus mykiss*).² While the common names Rainbow Trout and steelhead are often used interchangeably, this environmental review document and permit applications will refer to Rainbow Trout/steelhead, which is the single official common name given to this species by the American Fisheries Society several years ago. All-female triploid Rainbow Trout/steelhead have been selected to be raised in the existing net pen facilities because the use of mono-sex and sterile stocks of fish is recognized as means to significantly reduce potential genetic interaction with natural populations.

The Cooke Puget Sound marine net pen sites have all required State agency permits, and existing operations have been raising almost exclusively³ only Atlantic Salmon for the past 30 years. A recent change in Washington law (RCW 77.125.050), however, requires phasing out the farming of non-native finfish in marine net pen aquaculture. This change means that commercial marine net pen production in Washington will need to find a commercially viable native species of fish to grow in order stay in the business of growing seafood for human consumption. Rainbow Trout/steelhead are a native species to the Pacific Northwest region and have been commercially raised in Washington, primarily in freshwater facilities, for over 80 years if not even longer. Cooke is requesting a re-approval of their Marine Finfish Aquaculture Permit (WAC 220-370-100) from the Washington Department of Fish and Wildlife (WDFW) that will allow the company to start growing domesticated stocks of a mono-sex (all-female) sterile (triploid) Rainbow trout/steelhead (*Oncorhynchus mykiss*) at their marine farms. Cooke received the renewal of their Marine Finfish Permit from WDFW on March 19, 2019 to continue raising Atlantic salmon at the four farm sites with a valid Aquatic Use Permit from WDNR (Clam Bay, Fort Ward, Orchard Rocks and Hope Island). Other than transitioning to the commercial cultivation of a different species of fish, the company is not planning any alteration to the existing fish pen physical structures, locations, supporting equipment, or general current practices, methods, maintenance and cultivation techniques currently used for growing Atlantic Salmon in net pens. Domesticated stocks of triploid Rainbow Trout/steelhead have very similar physiological and metabolic requirements to those of domesticated stocks of Atlantic Salmon. The basic difference is that all-female triploid Rainbow trout/steelhead are known to be reproductively sterile, and thus convert their energy almost entirely to growth. By comparison, diploid populations of Rainbow trout/steelhead and Atlantic salmon will reach a certain age and begin to expend growth energy toward the production of gametes and secondary sexual characteristics (sexual maturation).

Raising native-stock fish species in marine net pens is consistent with the recommendations of the *Final Programmatic Environmental Impact Statement: Fish Culture in Floating Net-Pens* (Washington Department of Fisheries, January 1990). The Preferred Alternative in the Programmatic EIS (PEIS)

² Genetically, Rainbow Trout and steelhead are the same species (*Oncorhynchus mykiss*), but they represent two separate life strategies. Rainbow Trout are the resident form that stay in freshwater. Steelhead trout are the anadromous form that migrates to the ocean and back to natal rivers and streams to spawn.

³ Other species of salmonids such as Coho and Chinook Salmon, and steelhead trout have also been raised at some of these marine net pens and other facilities in Puget Sound in the past.

concludes that “*In areas where WDF determines there is a risk of significant interbreeding (with indigenous species) or establishment of harmful self-sustaining populations, the agency should only approve the farming of sterile or monosexual individuals, or genetically incompatible species.*” By farming a monosex (all-female) and sterile (triploid) stock of Rainbow Trout/steelhead, Cooke’s proposed change of species incorporates both methods of reducing the risks of genetic interference to indigenous populations or from escaped farmed fish establishing self-sustaining feral populations. WDFW has requested that a SEPA Checklist be prepared, along with Additional Information (e.g., response to the Department’s specific questions) for the Department’s consideration during their review of the Cooke Aquaculture application for re-approval of the Marine Finfish Aquaculture permit to authorize the species conversion. The additional information provided in SEPA Checklist Attachments A through E update the 1990 Programmatic EIS, and provide specific detailed information regarding potential change in environmental impacts that may occur as a result of the Cooke Aquaculture species conversion proposal.

The 1990 *Final Programmatic Environmental Impact Statement: Fish Culture in Floating Net-Pens* is adopted herein by reference, in accordance with WAC 197-11-630. The SEPA Additional Information document (Attachment B), supported by an Annotated Bibliography (Attachment C), addresses the potential environmental effects of the species change proposal on the subjects of escapement, competition, potential genetic interactions, and minor operational differences. The current status of Federally-listed species under the Endangered Species Act since the 1990 PEIS was issued, as well as State-listed species, is described in Attachment D, along with an effects analysis for both Atlantic Salmon culture (which has occurred throughout the years since the 1990 PEIS was issued), and an effects analysis for the proposed species conversion to rear all-female, triploid Rainbow Trout/steelhead. These documents update the 1990 PEIS.

Because the existing Cooke Aquaculture net pens have previously obtained the facility construction permits as well as Marine Finfish Aquaculture Permits, Clean Water Act Section 402 NPDES Waste Discharge Permits, and State-owned Aquatic Land Leases, there is no site selection or construction required to implement the species conversion proposal. There will be only minor operational differences to farm all-female triploid Rainbow Trout/steelhead rather than farming Atlantic salmon, with insignificant impacts to elements of the Natural Environment, and no change in impact to elements of the Built Environment as a result of implementing the species conversion proposal.

The company will use local stocks of Rainbow Trout/steelhead produced by Troutlodge hatcheries in Pierce County. Brood stock are cultivated in Washington specifically for the production of ova to supply both private and public aquaculture operations. Troutlodge, a Washington-based company, has been producing Rainbow Trout/steelhead eggs for sale to farms and public enhancement hatcheries throughout the world since 1945. Brood fish are raised in regulated pathogen-free conditions for their entire life cycle. The company utilizes a comprehensive health testing and disease-free certification program that exceeds World Organization of Animal Health (OIE) standards at their Washington facilities, allowing them to export live salmonid eggs throughout the world.

Troutlodge has been producing mono-sex (all-female) populations of Rainbow Trout/steelhead eggs since the mid-1990s. The all-female (XX only) ova are subsequently fertilized with X-only mono-milt. Triploidy is induced by mechanical pressure shock. For a short period of time, a high-pressure hydrostatic shock is applied to the newly fertilized eggs at a specified time point post-fertilization. The post-fertilization pressure treatment forces the fertilized egg to retain the third set of chromosomes that is normally ejected at this time. Pressure is then released and the triploid (3N) eggs are allowed to continue development. Ploidy is confirmed using a fluorescent nucleic acid label on either embryo or blood tissue using a flow cytometer at the Washington State University School of Veterinary Medicine. Testing results of Troutlodge triploid fish and eggs over a period of five (5) years (from 2013 to 2018) demonstrate a high rate of success in triploid induction (99.83% – 2,950 of 2,955 fish and/or eggs sampled (see Attachment A).

Cooke operates two freshwater hatcheries in the Scatter Creek area of Thurston County. The hatcheries raise and produce the juvenile fish that are eventually transferred to the marine net pens for final cultivation to the desired harvest size. Eyed all-female triploid Rainbow Trout/steelhead eggs would be supplied to the Cooke hatcheries from the Troutlodge hatchery under a WDFW Fin Fish Transport permit. The eggs would be hatched and cultured to a certain size in the Cooke hatcheries, and then transferred to the marine net pens after undergoing the necessary fish pathogen screening protocols, subject to review and approval by WDFW. Thereafter, a Fin Fish Transport Permit would be required from WDFW for each specified lot of fish to be transferred from Cooke hatcheries to the marine net pens.

Marine net pen cultivation and production protocols for Rainbow Trout/steelhead are basically the same as those used for Atlantic Salmon. Maximum cage density levels are expected to be managed at the same levels (approximately 0.9 to 1.2 lb/ft³ or 15 – 20 kg/m³), resulting in comparable maximum biomass levels that have historically been attained at each of the existing Cooke Aquaculture sites. Depending upon fish size at harvest (targeted mean weights of approximately 7 to 9 lbs or 3.5 to 4.2 kg), the fish population sizes at each marine net pen site are expected to be similar to stocking levels for Atlantic Salmon. The fish feed composition for marine-reared trout diets will be the same or similar to the currently-used marine salmon diets. Modern salmon and trout feeds are composed of highly digestible ingredients that are specifically formulated for optimal growth and feed conversion rates. No differences in water quality or sediment quality are expected to result from this change in species or the accompanying Rainbow Trout/steelhead-specific feeds that would be used. Additional information on feed composition, expected feed conversion rates, projected growth rates, projected pen densities and production cycles is provided in Section D of the SEPA Additional Information document (Attachment B).

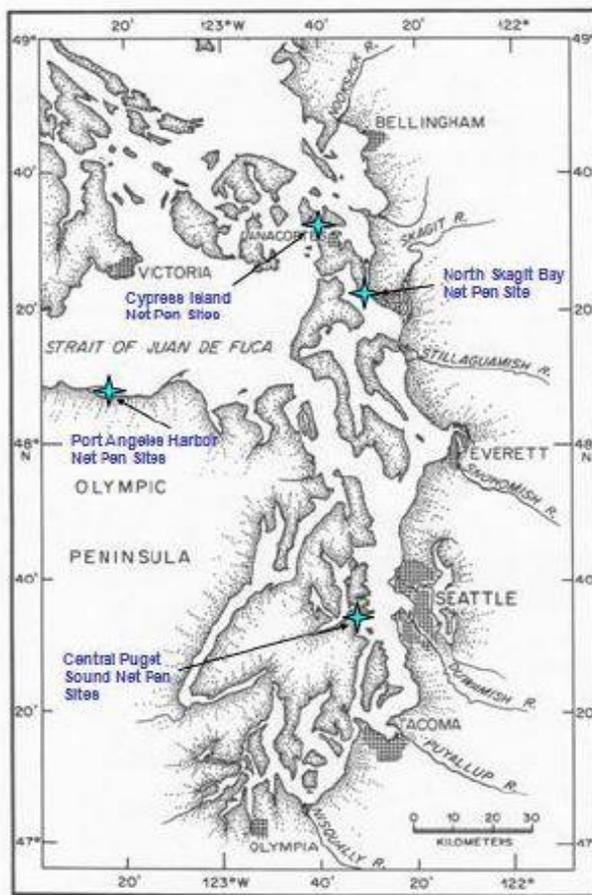
Equipment and all net pen support structures, stock nets, and predator exclusion nets will be the same or similar to what has been used for the cultivation and production of Atlantic Salmon. If the species conversion proposal is approved, the Rainbow Trout/steelhead produced in marine net pens will be harvested, processed, packaged and shipped fresh to seafood customers throughout the United States. Cooke is dedicated to producing a high-quality seafood in a sustainable and environmentally sound manner.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Floating commercial marine net pens owned by Cooke Aquaculture Pacific, LLC are located in the following areas:

Fort Ward, Orchard Rocks and Clam Bay – Rich Passage in Kitsap County on the south end of Bainbridge Island, WA.

Hope Island – Skagit Bay in Skagit County on the northeast side of Hope Island, WA.⁴



Vicinity Map

⁴ Cooke Aquaculture Pacific is working with the Department of Natural Resources to resolve State-owned Aquatic Land Lease issues with the Cypress Island net pen and the Port Angeles net pen facilities. If the situation is resolved, these net pen sites would also be transitioned to native species aquaculture.

B. Environmental Elements

1. Earth

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other

Not applicable.

b. What is the steepest slope on the site (approximate percent slope)?

Not applicable.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Not applicable.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There have been no indications of unstable soils at the existing marine net pen sites.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

No new construction is proposed; therefore, there would be no fill, excavation, or grading at the existing marine net pen sites..

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Not applicable. No new construction is proposed.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The "impervious surfaces" question is not applicable to the existing floating marine net pens, or to the change in species proposal.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Since no erosion or other impacts to earth would occur, no measures to reduce or control such impacts are proposed.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.**

Diesel-powered electrical generators (gensets) are used on the net pen sites to supply power to the feeding equipment. There is typically one genset for each net pen site. Typical hours of operation are from 7:00 AM to 5:00 PM. The generators may run continuously during that time or may be turned off during times when they are not in use. This represents no change from existing conditions, and would not be altered by the change in species proposal.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

No.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:**

The proposal to change the species of fish reared at existing marine net pen sites would cause no air quality impacts; therefore, no measures are proposed to reduce or control such impacts.

The diesel generators that are used are new models that use EPA Tier IV type engines and run on clean fuels. Gensets are periodically shut off when they are not in use. This represents no change from existing conditions and would not be altered by the change in species proposal.

3. Water

- a. Surface Water:**

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-around and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

Cooke Aquaculture existing floating net pens are located in the marine waters of Rich Passage in Kitsap County, Skagit Bay in Skagit County, Deepwater Bay in Skagit County and Port Angeles Harbor in Clallam County (see Vicinity Map in Section A.12, above).

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

The proposed project involves changing the species of finfish being reared at existing Cooke Aquaculture Puget Sound marine net pen facilities from Atlantic Salmon to an all-female sterile stock of Rainbow Trout/steelhead. These fish will be grown in the same existing net pen facilities that the Atlantic Salmon were grown in, using the same feeding and fish culturing practices that are currently employed at these facilities. There will be no in-water work or over-water work to construct or modify existing floating marine net pens.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

None. No new construction is proposed.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water withdrawals or diversions are required to implement the species change proposal, or to continue operations at existing floating net pen facilities.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No, not applicable.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

Existing permitted marine net pens will be used to rear all-female triploid Rainbow Trout/steelhead following the transition from Atlantic Salmon culture. Marine finfish rearing facilities in Washington State operate under the regulations and conditions of a National Pollutant Discharge Elimination System (NPDES) permit issued by the Washington Department of Ecology (Ecology). The Clean Water Act Section 402 NPDES Waste Discharge Permit establishes the basis for effluent limitations, water quality criteria, sediment management standards, and the technology-based standards for allowable discharges from the fish rearing facilities. Ecology issued updated the Cooke Aquaculture NPDES permits on July 11, 2019 for the Hope Island, Fort Ward, Orchard Rocks and Clam Bay net pen facilities. The permits set forth additional monitoring, reporting and recording keeping requirements for the protection of public and environmental health, *“This proposed permit (NPDES) includes all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Washington.”* Clam Bay NPDES Permit WA-0031526 Fact Sheet (dated July 11, 2019).⁵

Net pen operators manage nutrient waste with farm practices, efficient feeds and feeding practices, optimal pen configurations and farm orientation in order to optimize fish growth, waste distribution, and nutrient assimilation by the food web (Rust et al., November 2014). Impacts to water quality at salmon farm sites, including increased nitrogen, phosphorus, lipids, and turbidity or oxygen depletion have lessened significantly over the last 20 years as a result of a better understanding of siting requirements, improved feeding, better feed formulation, and better farm management practices (Soto and Norambuena 2004 in Rust et al., November 2014; McKinnon et al 2008 in Rust et al., November 2014; and Price and Morris 2013). Benthic impacts from U.S. net pens have been dramatically reduced over the last few decades, due to improved siting and better management practices (Rust et al., November 2014).

The primary discharge from marine salmonid net pen facilities, which includes Rainbow Trout/steelhead farms, is organic nutrients produced by the cultivated populations of fish that are being reared at the facility. These metabolic waste products are primarily composed of organic carbon, nitrogen and trace amounts of phosphorus. Switching from growing one species of salmonid (Atlantic Salmon) to a different closely-related species of salmonid (Rainbow Trout/steelhead) is not expected to result in changes to the composition or volume of waste discharge. Commercial salmon and trout diets contain the same or similar feed ingredients. Some commercial trout feeds tend to have slightly lower lipid- (fat) to-protein amounts in comparison to some salmon feeds. Cooke anticipates using the same commercial salmon feed for the all-female triploid Rainbow Trout/steelhead diets that

⁵ The NPDES Fact Sheets issued for all four locations with existing valid State-owned Aquatic Land Leases contain this same statement. The Fact Sheets are included by reference.

it is currently using to grow Atlantic Salmon at their marine net pen sites. Projected production cycles, the time from first fish in to last fish out (all harvesting completed), are anticipated to be less by several months compared to current Atlantic Salmon operations. This will be the result of both the expected growth rates for all-female triploid Rainbow Trout/steelhead being higher (faster growing compared to Atlantic Salmon), and the average harvest weight for Rainbow Trout/steelhead being smaller (approximately an 8-pound average weight for Rainbow Trout/steelhead compared to the approximately 11-pound average weight for Atlantic salmon). The overall amount of feed used during a production cycle and the period of peak biomass are anticipated to be less than with current Atlantic Salmon farming operations. In addition, because of the shortened production cycle for raising Rainbow Trout/steelhead, the frequency and number of fallowings will be increased over a given time period in comparison to the current Atlantic Salmon farming operations. Anticipated volumes of discharge from the marine net pens are therefore expected to be no more than and likely less than current peak levels. Additional information on feed composition, expected feed conversion rates, projected growth rates, projected pen densities and production cycles is provided in the SEPA Additional Information document (Attachment B, in the response to Information Request D.2).

b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

No groundwater is used and no water will be discharged to groundwater as a result of the species change proposal.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

No waste materials will be discharged into the ground.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Marine net pen structures are a grid constructed of steel support structures from which the nets are suspended in which the fish are grown. Approximately 75% of the structure is open, unencumbered surface area. The steel walkway structures are composed of permeable surfaces (open steel grating for the walkway grid). There is no stormwater collection at the marine net pen sites, and none required for the species change proposal.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.**

See the response to SEPA Checklist Questions B.3.a.6 above, and B.7.a below.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No drainage patterns would be affected by the proposed action.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Equipment used on the floating marine net pens has secondary containment provisions. Spill prevention, control and response procedures are posted at all sites. Spill kits are located on each site and employees are given instruction on spill response procedures.

Computerized feeding systems will be used to accurately keep track of how much the fish population is expected to eat, and how much feed is being fed (delivered) to the fish population in each pen. Fish feeding technicians will monitor each fish pen using both surface visual cues and underwater video cameras that allow them to ensure fish are being fed properly, without excess pellets sinking past the captive stocks and being lost into the environment. Fish feed is one of the most expensive costs in raising salmon. For this reason, the industry has researched and developed improved fish feeds, feed monitoring equipment, feed distribution equipment, computerized biomass growth programs, expected feed conversion rates, specific feed delivery rates, and several other tools and methods to maximize feed utilization for the growth of the fish stocks, while minimizing the chance of uneaten feed entering the environment. There would be no change to existing feed delivery systems or feed monitoring practices to implement this species change proposal.

4. Plants

a. Check the types of vegetation found on the site:

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

grass

pasture

crop or grain

orchards, vineyards or other permanent crops

wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

water plants: water lily, eelgrass, milfoil, other

other types of vegetation: Marine algae grows on the net pen structures such as floats, netting and anchor lines. This includes primarily green and brown algae species.

b. What kind and amount of vegetation will be removed or altered?

None.

c. List threatened and endangered species known to be on or near the site.

There are no threatened or endangered plant species on the existing marine net pen sites.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Since there will be no impacts to plants or marine algae that grows on net pen structures as a result of the species change proposal, no measures are proposed to preserve or enhance vegetation on the existing marine net pen sites.

e. List all noxious weeds and invasive species known to be on or near the site.

None.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: hawk, heron, eagle, songbirds, other: waterfowl, shorebirds
mammals: deer, bear, elk, beaver, other: marine mammals (see below)
fish: bass, salmon, trout, herring, shellfish, other: (see below)

Marine mammals, fish, birds and invertebrates can occur around existing marine net pen areas. These primarily include: whales, porpoise, seals, sea lions; several species of salmonids, baitfish, and ground fish; bald eagles, shorebirds and waterfowl. The occurrence of these animals will not be altered by the species change proposal.

b. List any threatened and endangered species known to be on or near the site.

Common Name	Federal Species Status	State Species Status
Humpback Whale	Endangered	Endangered
Southern Resident Killer Whale	Endangered	Endangered
Northern Sea Otter	None ⁶	Endangered
Eastern Pacific Stellar Sea Lion	None ⁷	None
Bald Eagle	None ⁸	None
Marbled Murrelet	Threatened	Threatened
Chinook Salmon (Puget Sound ESU)	Threatened	Candidate
Chum Salmon (Hood Canal Summer-run)	Threatened	Candidate
Chum Salmon (Puget Sound/Strait of Georgia ESU)	None ⁹	Candidate
Coho Salmon	Species of concern	None
Steelhead	Threatened	Candidate
Bull Trout	Threatened	Candidate
Eulachon	Threatened	Candidate
Flathead Sole	Species of concern	None
Green Sturgeon	Threatened	None
Pacific Cod	Species of concern	Candidate
Pacific Hake	Species of concern	Candidate
Pacific Lamprey	None	None

⁶ Northern Sea Otter presently have no Federal listing status. They are protected under the Marine Mammal Protection Act (<https://www.fws.gov/wafwo/articles.cfm?id=149489657>).

⁷ Eastern Pacific Stellar Sea Lion presently have no Federal or State listing status. They are protected under the Marine Mammal Protection Act (WDFW, August 2008 [updated January 2019]: Priority habitats and species list).

⁸ Bald Eagle presently have no Federal or State listing status. They are protected under the Bald and Golden Eagle Protection Act (WDFW, August 2008 [updated January 2019]: Priority habitats and species list).

⁹ WDFW, August 2008 (updated January 2019).

Common Name	Federal Species Status	State Species Status
River Lamprey	None	Candidate
Canary Rockfish	None ¹⁰	Candidate
Bocaccio Rockfish	Endangered	Candidate
Yelloweye Rockfish	Threatened	Candidate
Pinto Abalone	Species of concern	Candidate
Pacific Harbor Porpoise	None	Candidate
Gray Whale	None	Sensitive
Pacific Herring	None	Candidate
Black Rockfish	None	Candidate
Brown Rockfish	None	Candidate
China Rockfish	None	Candidate
Copper Rockfish	None	Candidate
Quillback Rockfish	None	Candidate
Redstripe Rockfish	None	Candidate
Tiger Rockfish	None	Candidate
Yellowtail Rockfish	None	Candidate
Walleye Pollock (South Puget Sound)	None	Candidate
Olympia Oyster	None	Candidate

A narrative description of each of these species is provided in SEPA Checklist Attachment C: *Threatened and Endangered Species: 1990 PEIS Update*, along with an effects analysis for both Atlantic Salmon culture (which has occurred throughout the years since the 1990 PEIS was issued), and an effects analysis for the proposed species conversion to rear all-female, triploid Rainbow Trout/steelhead.

WDFW raised several specific questions about the potential effects of the species conversion proposal on threatened and endangered species (TES). Responses to these questions are provided in SEPA Checklist Attachment B: *Additional Information: Response to WDFW Questions*, supported by an *Annotated Bibliography* (Attachment C). The *Annotated Bibliography* was prepared by technical experts who also assisted with preparing the response to WDFW questions in Attachment B, and who prepared the TES effects analysis in Attachment D. Curriculum vitae for these experts are provided in SEPA Checklist Attachment E.

c. Is the site part of a migration route? If so, explain.

Yes. The existing marine net pens are located in the marine waters of Puget Sound and while not blocking any migration corridors it is likely that marine fish species, marine mammals and other wildlife may pass by in the water adjacent to the net pens.

d. Proposed measures to preserve or enhance wildlife, if any:

The following measures are current practices at Cooke Aquaculture existing marine net pen sites and would continue to be implemented with the species change proposal.

- Monitor for organic enrichment of the substrate beneath the farm. This is required by the Clean Water Act Section 402 NPDES Waste Discharge Permit for the project.
- Implement fallow periods at marine net pen operations to allow for sediment and benthic organism

¹⁰ Genetic information collected by NMFS found that Canary Rockfish in the Puget Sound/Georgia Basin are not distinct from coastal Canary Rockfish, and therefore are not a Distinct Population Segment (DPS). To qualify for Federal ESA protections, a species must be discrete from the remainder of the species (NOAA Fisheries. 2017).

recovery periods from any excess nutrient enrichment. Fallowing for a period of 30 days or longer would occur after each single-stock generation is grown and harvested out. It is anticipated that the frequency of fallowing a site would increase as Rainbow Trout/steelhead grow-out cycles are anticipated to be shorter compared to Atlantic Salmon to reach the targeted market size.

- Use passive predator barrier netting surrounding each marine net pen for both avian and marine mammal deterrence.
- Tightly tension predator barrier nets and fish containment nets using a net weighting system to keep the net walls and floors tight. This minimizes the potential for underwater entanglement of marine mammals or diving birds.
- Efficiently plan vessel trips to minimize vessel traffic to and from marine net pen sites to reduce potential wildlife interactions or disturbance.
- Observe Federal regulations that implement a no-approach zone for killer whales and all other whales, dolphins, and porpoises when operating crew vessels approaching or leaving marine net pen sites.
- Implement the *Plan of Operation: All-Female Triploid Trout* (January 18, 2019), including updating the comprehensive Operational Procedures for Fish Escape Prevention, Reporting and Recapture and Regulated Fish Pathogen Reporting and Bio-security Plans.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electrical energy is supplied to existing marine net pen sites by diesel generators. The diesel generators run periodically during the work day to power feeding equipment or other small appliances. The species change proposal would require no change from these existing conditions.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Electrical generators are operated only as needed and would be turned off when not in use. The species change proposal would require no change to this practice.

7. Environmental Health

- a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Yes. All existing facilities utilize diesel fuel to operate various pieces of machinery located on the floating marine net pens and/or on support barges. There is a risk of spill when handling liquid fuels. Fuel is kept inside secondary containment structures and spill kits are kept on each site nearby these areas. Employees are trained in proper fuel handling, spill prevention, and cleanup procedures. The species change proposal would require no change to these practices.

- 1) **Describe any known or possible contamination at the site from present or past uses.**

None known.

- 2) **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

None.

- 3) **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

Primary hazardous chemicals used on the existing marine net pen sites are those contained within or used for the operation of various pieces of gasoline- or diesel-powered engines. These fuels, lubricants and coolants include diesel fuel, gasoline fuel, motor oils, hydraulic oil, antifreeze and other lubricants. Periodic maintenance activities on the cage structures are occasionally performed using paints or solvents. Necessary precautions and preventative measures are taken to keep these materials from entering the water. These materials are not stored on the floating net pens when not in use. The species change proposal would require no change to these current practices.

Medicated feed that contains antibiotics is used to treat specific disease events at the marine net pens. Medicated feed use is infrequent, and the prescribed medicated feed treatments occur in the form of either 5- or 10-day treatments depending upon the type of antibiotic used. There are currently only three types of antibiotics used at the marine net pens: Romet TC, Terramycin and Aquaflor. Currently, 100% of the fish are vaccinated at the hatchery for common pathogens prior to being transported to the marine net pens which helps to minimize the incidence of disease and the need for antibiotic treatments at the net pens. These practices would continue to be applied to the stocks of Rainbow Trout/steelhead. The amount, frequency or types of medicated feeds are not expected to increase. Annual medicated feed use has trended downward over the past 10 years (from 2008 to 2018).

- 4) **Describe special emergency services that might be required.**

There is no anticipated need for new or additional emergency services associated with the proposed change of species to be reared at the marine net pens. Employees working at the farm sites are currently trained in first aid and CPR. Emergency communication devices are located at all existing sites and in crew support vessels. First aid equipment, Automatic Electrical

Defibrillators (AEDs), fire suppression and firefighting equipment, sea survival equipment, and emergency oxygen delivery kits are kept at the sites and/or on board the various support vessels. Minor employee injuries are treated on-site. Medical transport, if needed, can be provided by company crew vessels and by coordination with local land-based Emergency Medical Technicians (EMTs). An emergency meeting point at appropriate shore-side facilities can be arranged with local EMTs if needed. In the event of a serious dive accident, the U.S. Coast Guard would likely be called for assistance to provide rapid helicopter transportation directly from a marine net pen facility to a hyperbaric chamber at Harborview Hospital in Seattle.

Emergency spill prevention, response plans and procedures are posted at each of the existing marine net pen facilities along with emergency spill notification telephone numbers for State and Federal agencies. Emergency spill kits are stored and readily available near fueling areas. In the event of an accidental fuel spill, a marine fuel spill response vessel service would be immediately contacted for assistance, and State and Federal notification procedures would be implemented (Washington Department of Ecology and U.S. Coast Guard National Response Center). Certain employees are HAZWOPPER certified and capable of deploying the on-site spill prevention kits and clean-up materials for initial spill containment response. No change to these procedures would be required to implement the species change proposal.

5) Proposed measures to reduce or control environmental health hazards, if any:

Cooke Aquaculture has developed a Spill Prevention, Control and Response procedure for the existing marine net pen sites. Employees are trained and familiar with proper spill prevention procedures. Spill kits are located on each of the farm sites, and emergency spill notification contact numbers are posted in numerous locations. Double containment is used for fuel tanks and hazardous materials located on the floating marine net pen sites. None of these conditions would require any change to implement the species change proposal.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Gasoline- and diesel-powered engines are the primary sources of noise associated with the operation of the existing marine net pen sites. The diesel generator engines are contained within sound enclosures and are considered the “run quiet” type of systems used for backup generators at hospitals and similar facilities. Hours of operation are typically normal working hours from 7:00 AM to 6:00 PM. None of these existing practices would be altered by the species change proposal.

3) Proposed measures to reduce or control noise impacts, if any:

Since there would be no noise impacts associated with the species change proposal, no measures are proposed to reduce or control such impacts.

Diesel generators associated with existing marine net pen facilities are operated only as needed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposed change in species to be reared would utilize existing permitted commercial net pen aquaculture facilities that have been in operation since the early 1980s. Adjacent upland properties are typically developed with residential homes. Exceptions include the Clam Bay facility (in existence since the early 1970s), located adjacent to property owned by the U.S. Government; the Port Angeles net pens located near U.S. Government property and within a working harbor area; and the Cypress fish pens located adjacent to State-owned uplands (see the Vicinity Map in Section A.12 of this SEPA Checklist). Residential development along the waterfront and adjacent to the net pens has continued to occur over the past 30 to 40 years in areas where residential development is zoned. The pens are anchored offshore and do not interact with nearby land uses. The species change proposal would be undetectable to adjacent land uses.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The Washington State Legislature has defined aquaculture as agriculture (RCW 15.85.010). As such, the existing marine net pen facilities could be considered working farmlands. The project application is to maintain the existing agricultural production of farmed fish by transitioning to a native sterile stock of fish species (Rainbow Trout/steelhead).

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

See attached drawings.

d. Will any structures be demolished? If so, what?

No structures will be demolished.

e. What is the current zoning classification of the site?

The existing net pen sites are all located in navigable waters that are designated Aquatic. Adjacent upland zoning is as follows:

- Hope Island Site: Adjacent upland zoning classification is Rural Residential (Skagit County).
- Fort Ward and Orchard Rocks Sites: Adjacent upland zoning classification is Shoreline Residential (City of Bainbridge Island).
- Clam Bay Site: Adjacent upland zoning classification is Military (Kitsap County).
- Port Angeles Site: Adjacent upland zoning classification is City (Clallam County).

- Cypress Island Site: Adjacent upland zoning classification is Public (Skagit County).

f. What is the current comprehensive plan designation of the site?

Adjacent upland comprehensive plan designations are:

- Hope Island Site: Shoreline of Statewide Significance
- Fort Ward and Orchard Rocks Sites: Shoreline Residential
- Clam Bay Site: Military
- Port Angeles Site: City
- Cypress Island Site: Public Open Space.

g. If applicable, what is the current shoreline master program designation of the site?

- Hope Island Site: Aquatic
- Fort Ward and Orchard Rocks Sites: Shoreline Residential
- Clam Bay Site: Military
- Port Angeles Site: Aquatic
- Cypress Island Site: Aquatic.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Unknown by applicant.

i. Approximately how many people would reside or work in the completed project?

Each net pen site is staffed with approximately 8 full time employees. There would be no change in the number of workers as a result of implementing the species change proposal.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Since there would be no displacement impacts, no measures are proposed to avoid or reduce such impacts.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Existing net pens where the change of species is proposed have all necessary land use permits and in-water permits in-hand, having operated at these locations since the mid-1970s and mid-1980s. The proposal does not create new impacts to existing or projected land uses or land use plans.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Since there would be no impacts to agricultural or forest land, no measures are proposed to reduce or control such impacts.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Since there would be no impacts to housing, no measures are proposed to reduce or control such impacts.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The Hope Island and Clam Bay net pen sites have an associated feeding barge that is moored to the fish pen structure. The approximate height of the feed barges is 14 feet above sea level. The net pen structures all have a perimeter barrier net that is approximately 6 to 8 feet above the water level. No change to these structures is required to implement the species change proposal.

b. What views in the immediate vicinity would be altered or obstructed?

The existing fish pens are located from approximately 600 feet to 1,500 feet offshore. They do not obstruct views. View obstruction would not be an impact of the species change proposal.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Since there would be no aesthetic impacts associated with the species change proposal, no measures are proposed to reduce or control such impacts.

The net pen structures use dark or grey materials to help minimize visual impacts. The farm sites are kept clean and orderly.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Existing marine net pen facilities are required by the U.S. Coast Guard to maintain navigation warning signal lights under a Private Aids to Navigation (PATON) permit. Each site has a small flashing

yellow navigation light that is automatically activated by darkness. The light flashes on every 7 seconds and only operates at night. There are no other surface lights used on the fish pens. No change to existing navigation lights would be required to implement the species change proposal.

Underwater lights (visible as a glow in the water above the sea surface) were used seasonally in Atlantic Salmon culture to suppress sexual maturation of the winter entry smolts during their second sea-winter in the 18- to 24-month rearing cycle. Underwater lights will not be used with the species change proposal to rear Rainbow Trout/steelhead because the all-female triploid fish do not go into sexual maturation.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

The use of lights on support vessels could be minimized if these vessels are used during the evening hours. There would be no change to this practice as a result of implementing the species change proposal.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Informal recreational opportunities nearby existing net pen facilities include recreational boating, fishing, wildlife viewing and beach combing.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No. The proposal to change the species reared at existing marine net pen facilities would have no effect on existing recreational uses. There will be no change to the size and/or location of existing net pen structures in order to implement the species change proposal; therefore, there would be no change to existing recreational opportunities adjacent to these facilities.

While existing facilities occupy space on the surface of the water, there is a massive amount of water surface area in comparison that is available for navigation and recreational opportunities around the fish pens.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Since the species change proposal would result in no impacts to recreation, no measures are proposed to reduce or control such impacts.

Potential conflicts between existing marine net pens and aquatic recreation opportunities are minimized by the use of navigation marker lights and the identification of these lights on NOAA navigation charts.

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.**

No.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

No.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

There would be no change to existing floating marine net pen sites to implement the species change proposal; therefore, there would be no cause for any impact to cultural or historic resources.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

Since there would be no impacts to cultural or historic resources as a result of the species change proposal, no measures are proposed to avoid, minimize, or compensate for loss, changes to, or disturbance to such resources.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.**

Employees use public roads to get to work and meet in the morning at nearby marinas or at a private company dock to access existing fish pens by boat. Young fish (smolts) are transported from existing Cooke hatcheries to a vessel in Olympia Harbor for transport to existing marine net pen sites. These practices will be the same with the species change proposal as they are with existing operations that rear Atlantic Salmon.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

No.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

None, not applicable.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).**

No.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

See the response to SEPA Checklist Question B.14. a, above.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?**

The Fort Ward, Orchard Rocks and Clam Bay sites are accessed from both the Bainbridge Island side of Rich Passage as well as the Manchester side of Rich Passage. Approximately 18 vehicle trips per day, 7 days per week occur on the Bainbridge Island side of Rich Passage. The company owns a dock facility located on Bainbridge Island as well as adjacent upland parking. Employees commute to work and park in the company parking lot where they can then be taken out to the Fort Ward, Orchard Rocks and Clam Bay net pens by company work vessels. A smaller number of employees at these facilities arrive via the Manchester side. Approximately 8 vehicle trips per day, 7 days per week occur on the Manchester side. The number of vessel trips to and from the Rich Passage cages each day varies but on average it is estimated to be 5 to 8 round trips per day. Trip generation at these sites would not change with implementation of the species change proposal.

The Hope Island employees arrive and park their vehicles in a parking lot at the Cornet Bay Marina located on the north end of Whidbey Island. The employees then board the company work vessel and are taken out to the Hope Island net pen site. Approximately 8 vehicle trips per day, 7 days per week occur. The number vessel trips to and from the Hope Island farm is estimated to be 2 to 4 round trips per day. Trip generation at this site would not change with implementation of the species change proposal.

The Port Angeles facility is accessed by boat. Employees park their vehicles in a parking lot adjacent to a small public boat launch located on Ediz Hook. A crew boat picks up the employees and takes them to the farm sites located just offshore of Ediz Hook. Trip generation at these sites would not change with implementation of the species change proposal.

The Cypress Island facilities are accessed by boat. Employees park their vehicles in a marina parking lot located in Anacortes. A crew boat picks up the employees and takes them to the farm sites which are located adjacent to Cypress Island. Trip generation at these sites would not change with implementation of the species change proposal.

Normal work hours on the existing marine net pen sites are 7:00 AM to 6:00 PM, seven days per week.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

No.

h. Proposed measures to reduce or control transportation impacts, if any:

Employees are encouraged to ride share to work in their personal vehicles. Once on the fish pens, the number of vessel trips are used efficiently. Multiple employees ride out to the fish pens at the same time and then return to shore at the same time. The efficient use of the vessels is encouraged. These existing practices will not be altered by the species change proposal.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No. The existing marine net pen facilities do not require typical land-based public services, and none would be required to implement the species change proposal.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Since there will be no impact on public services as a result of the species change proposal, no measures are proposed to reduce or control such impacts.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other (See below).

The existing marine net pen facilities are self-sufficient. There are no public utilities installed on these sites. Port-O-Lets are maintained on the farm sites for sanitary wastes. A work vessel brings the cleaned and serviced Port-O-Lets out to the farms each week and exchanges them with the used ones. The used Port-O-Lets are taken to an upland support facility where they are cleaned and serviced. The work vessel removes all solid waste (garbage) materials from the farm sites and transports it to nearby upland dock facilities. The shore-side facilities are serviced by municipal waste and recycling collection services. Electricity is provided by diesel electric generators. Bottled drinking water is provided on the sites for the employees. None of these existing practices will be altered as a result of the species change proposal.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None, not applicable.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:



Name of signee: Kevin Bright

Position and Agency/Organization: Permit Coordinator, Cooke Aquaculture Pacific, LLC

Date Submitted: July 24, 2019

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