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.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:
Vashon Kelp Forest

2. Name of applicant:
Michael Kollins/Vashon Kelp Forest, LLC

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

906 18th Avenue East

Seattle, WA 98112

206-295-2927

4. Date checklist prepared:
June 8, 2022

5. Agency requesting checklist:
King County, Permitting Division

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

Planned installation start date: September 30, 2022

Planned kelp farm production start date: December 15, 2022

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
No.

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

Permit applications and supporting documentation including underwater field survey, critical area report, visual impact analysis report and Endangered Species Act Biological Evaluation.

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. None known.

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

- *Washington DNR Use Authorization for State Owned Aquatic Lands*
- *U.S. Army Corps of Engineers Section 10 Authorization*
- *King County Shoreline Permit*
- *U.S. Coast Guard – Private Aids to Navigation (PATON)*

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. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed project is a mariculture farm that will grow sugar kelp (Saccharina latissimi), bull kelp (Nereocystis luetkeana) and other native kelps to Puget Sound. The project is design to support rebuilding native kelp forests in Central Puget Sound by providing a source of propagules to support naturally occurring kelp beds in the vicinity, while providing a learning

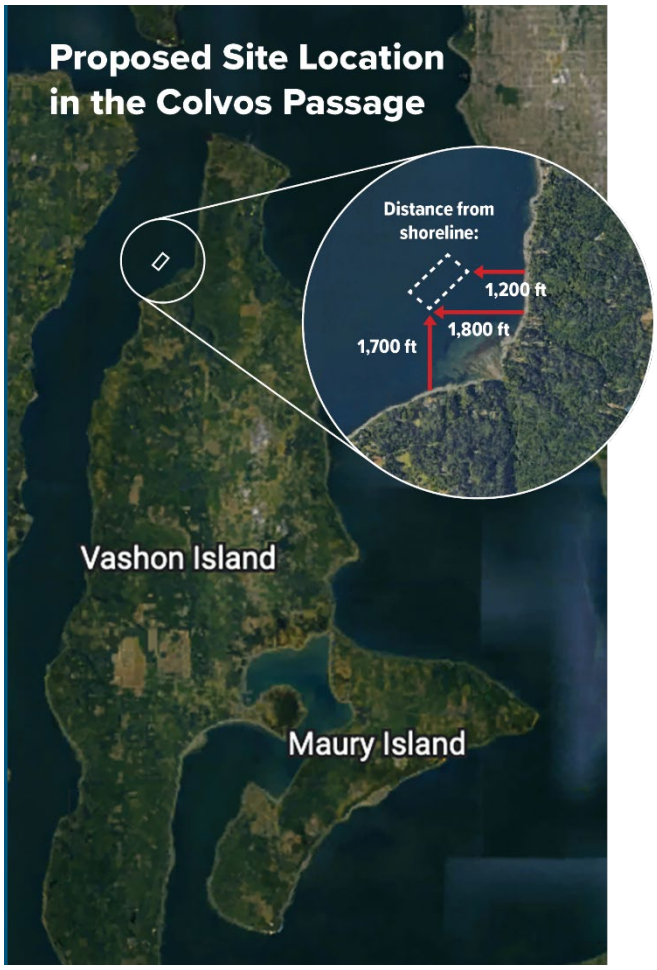
platform for collaborating with local univerisities and non-profit organizations. These efforts will be supported by growing kelp for harvest for commercial uses including a range of food and non-food products.

The project will cover a 10 acre (435 feet wide by 1000 feet long) subtidal parcel at water depths ranging from approximately -45 ft to -100 ft MLLW. Helical screw anchors will be installed into the seabed along the north and south boundaries of the farm to anchor kelp lines. These anchors will support near surface lines that will be held approximately 7-feet below the water's surface using dropper buoys. A total of 22 to 32 kelp growing lines will extend along the long axis of the project extending approximately 1,000 feet from anchor to anchor. A total of 8 marker buoys containing Coast Guard specified Private Aids to Navigation (PATONs) will be located around the boundary of the site (4 buoys evenly distributed along each 1000 foot long edge). Kelps will be raised in annual crops on the kelp growing lines.

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.

The site measures approximately 1000-feet by 435 feet (10 acres) and the shoreward boundary of the site is between 1200 and 1800 feet west of the Vashon Island shoreline along Colvos Passage. The site occurs at depths ranging from approximately – 60 feet to -100 feet MLLW.

NE corner: 47.486444 N, 122.485361 W
NW corner:47.487222 N, 122.486694 W
SE corner: 47.484361 N, 122.488056 W
SW corner: 47.485111 N, 122.489361 W
(DD NAD 83)



B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

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

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

Seabed slopes are between 2% and 8%

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.

Seabed soils are sand and fines/mud.

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

N/A

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.

Approximately 6.25 to 10 cubic feet of anchor structure will occur for installation of 52 to 72 helical anchors. Anchors will be attached to kelp lines and US Coast Guard required PATON buoys.

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

No.

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

N/A.

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

None.

2. Air [help]

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.

Vessel motor operations and surface support for divers (e.g., compressors and/or generators).

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:

Use of modern 4-stroke outboard engines on work vessels.

3. Water [help]

a. Surface Water: [help]

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

Project site is in Puget Sound (saltwater) along Colvos Passage between Vashon Island and the Kitsap Peninsula. Site occurs at a depth of -45 ft to -100 ft MLLW

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 project includes installation of helical anchors into the seabed, and a combination of floating line-end and PATON buoys and line floats that support near-surface (7-feet below the surface) kelp growing lines. Plans attached.

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.

Approximately 6.25 to 10 cubic feet of anchor structure is anticipated for installation of 52 to 72 helical anchors to support the project.

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

No.

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

N/A. The project occurs in tidal waters.

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.

No.

b. Ground Water: [help]

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.

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 material will be discharged.

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.

No runoff.

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

No.

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

No.

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

The project does not affect surface drainage patterns.

4. Plants [help]

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
_X___water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

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

No vegetation will be removed.

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

No threatened or endangered plant species known to occur near the site.

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

N/A.

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

No noxious weeds or invasive plant species known to occur near the site.

5. Animals [help]

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: osprey, scoters, sea gulls
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other harbor seal

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

Fish:
Bull trout (Puget Sound/Coastal DPS) (*Salvelinus confluentus*), Chinook salmon (Puget Sound ESU) (*Oncorhynchus tshawytscha*), steelhead (Puget Sound DPS) (*Oncorhynchus mykiss*), coho salmon
(Puget Sound/Strait of Georgia ESU) (*Oncorhynchus kisutch*), bocaccio rockfish (Puget Sound/Georgia
Basin DPS) (*Sebastes paucispinis*), and yelloweye rockfish (Puget Sound/Georgia Basin DPS) (*Sebastes ruberrimus*)

Birds:
Marbled murrelet (WA/OR/CA DPS*) (*Brachyramphus marmoratus*)

Marine Mammals:
Killer whale (Southern resident DPS*) (*Orcinus orca*)

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

Colvos passage is a major connection between south Puget Sound and areas north (including Central Puget Sound, Admiralty Inlet and Strait of Juan de Fuca). Marine fish, birds and mammals that move between South Puget Sound and these northern areas, including species that migrate to the Pacific Ocean, may move through Colvos Passage.

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

The aquaculture facility will grow kelp which provides habitat and food for wildlife. In addition, the farm may act as a source of kelp for adjacent areas, potentially supporting regional kelp beds where suitable substrates exist. To avoid harming wildlife, kelp will not be harvested during periods when fish eggs are present on kelp.

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

Colvos passage is in Puget Sound. Several noxious and invasive species of concern have been identified in Puget Sound. Species that may occur near the site include tunicates Styela clava which has been found in Elliott Bay, Didemnum vexillum which has been found on Maury Island. Green crab (Carcinus maenas) have recently been detected in Puget Sound and Hood Canal and are a recognized invasive species of concern. Field surveys from 1998 and 2000 led by Washington DNR identified 21 exotic species associated with nearshore structures in Elliott Bay. The only exotic species deemed abundant from those surveys was a freshwater or brackish hydroid, Corylophora caspia, which was found at a marina near Duwamish River Turning Basin.

6. Energy and Natural Resources [help]

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.

Gasoline and Diesel fuels. Energy will be used to support outboard engines, generators, and compressors. Solar energy may be used to support PATON lights.

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:

Limit lighting to required PATON buoy lights.

7. Environmental Health [help]

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.

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

None.

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.

Fuels and oils common to boat operations.

4) Describe special emergency services that might be required.

Marine emergency response vessels.

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

None

b. Noise

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

Maritime recreational and commercial transport. Natural wind-wave noise.

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.

Boat operations, compressor and generator operations.

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

Standard engine shielding for boat motors.

8. Land and Shoreline Use [help]

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 site is currently a marine seascape that is used as a visual amenity by adjacent shoreline properties and used for recreational navigation and in/on-water recreation.

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?

No.

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.

None.

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

No.

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

N/A.

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

N/A. Adjacent uplands are identified as Rural Areas. King County Comprehensive Plan contains policies addressing aquaculture (S-716 through S-727). These policies recognize that aquaculture is a water dependent use that should be an allowed use of the shoreline (S-716). Additional policies address potential siting and environmental interests.

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

Aquatic shoreline environmental designation because the site is more than 200 feet from the ordinary high water mark (OHWM) and adjacent to Rural shoreline.

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

T*he site is an aquatic area and is adjacent to a type S shoreline of the state.*

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

None.

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

None.

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

None.

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

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

None.

9. Housing [help]

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:

None.

10. Aesthetics [help]

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

Navigational PATON Buoys (8) may extend up to approximately 5-feet above the water's surface around the site perimeter. Support vessels will regularly be seen transiting to/from the project site.

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

Existing views of the area are of a marine seascape.
Buoys will be visible during the day and at night (due to PATON lighting) in an area with existing offshore buoys.

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

1. *Limit lighting to required PATON markers. Limit night-time vessel operations.*

11. Light and Glare [help]

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

Lighting is limited to lights associated with Coast Guard PATONs. These provide flashing night-time lighting on buoys to indicate to mariners the presence of potential obstacles to navigtation.

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:

None.

12. Recreation [help]

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

Recreational navigation and fishing.

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

The project may limit opportunities for fishing or crabbing withing the project parcel. These activities may cause entanglement of gear with the kelp farm lines.

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

While recreational fishing opportunities within the array may be limited, it is expected that fishery resources may utilize the kelp for rearing, spawning and/or feeding. This may support fishing opportunities in the project vicinity.

13. Historic and cultural preservation [help]

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.

An underwater video survey of the project site and engagement with tribes that have connections to the project site.

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.

None.

14. Transportation [help]

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.

The site will be accessed by boat. An approximately 25-foot workboat will travel to the site from permanent moorage in Quartermaster Harbor, Vashon Island. Additional trips may be between the site and Eagle Harbor (Bainbridge Island) and Bremerton. During installation of the gear, commercial divers may come from nearby marinas (e.g., Seattle, Bremerton, Bainbridge Island or Tacoma) to support the project.

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.

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.

No.

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 project is anticipated to generate up to 5 vessel trip to/from the site per week during operations. This data is based on activity at similar aquaculture facilities.

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:

None.

15. Public Services [help]

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.

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

None.

16. Utilities [help]

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

None.

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.

C. Signature [HELP]

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: DocuSigned by: Michaelkollins 7CA0BCB4529F4F1...

Name of signee MichaelKollins

Position and Agency/Organization Founder, Vashon Kelp Forest

Date Submitted: 7/23/2022

CONFLUENCE
ENVIRONMENTAL COMPANY

To: Michael Kollins, Vashon Kelp Forest, LLC

From: Phil Bloch

Date: June 8, 2022

Re: Vashon Kelp Forest Project: King County Greehouse Gas Worksheet Calculations

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The King County Greenhouse Gas Emissions Worksheet (King County 2022) provides a framework that is not directly applicable to the Vashon Kelp Forest Project. With no analogous structures or transportation activities in the worksheet, this memo uses information contained in that worksheet to meet the intent of calculating embodied and transportation emissions of greenhouse gasses.

1.0 EMBODIED EMISSIONS

Embodied emissions are greenhouse gas emissions associated with manufacturing, transport, and installation of project components. The main embodied emission greenhouse gas source is likely to be associated with ropes used in the project. Approximately 10,000 meters of line will be used as part of the project. Mammut Sports Group AG created a life cycle analysis (LCA) for climbing ropes (Bradford et al. 2021) that consist of the same basic materials as the lines proposed here. That analysis found that approximately 0.78 kg CO_2 equivalent was emitted per meter of line produced and distributed. Therefore, this project is anticipated to generate approximately 7,800 kg CO_2 equivalent due to lines. Additional sources of greenhouse gas emissions for other project components are anticipated to be small and no basis for calculation was identified.

2.0 TRANSPORTATION EMISSIONS

The project causes an average of one 40-mile round trip per day using an approximately 25-foot work vessel. Assuming operations are approximately 50 weeks/year, that suggests the workboat will travel an average of approximately 10,000 miles/year. Using stated fuel economy for similar vessels of approximately 2.5 mpg (Boston Whaler 2020), that suggests an annual fuel consumption of approximately 4,000 gallons of gas. The King County greenhouse gas worksheet identifies emissions from transport, refining and combustion of gasoline of 11 kg (24.3 lbs) CO_2/gallon of gasoline. Therefore, the project is anticipated to generate approximately 44,100 kg (97,200 lb) CO_2 per year.

3.0 REFERENCES

Boston Whaler. 2020. 2020 Model Year Boston Outrage 250 Speed and Fuel Consumption Chart. Available online at: https://bostonwhaler.imgix.net/wp-content/uploads/2016/08/18153607/250-OUTRAGE-2020-PERFORMANCE-DATA.pdf. Accessed June 7, 2022.

Bradford, S., Rupf, R. and Stucki, M., 2021. Climbing ropes—environmental hotspots in their life cycle and potentials for optimization. Sustainability, 13(2), p.707.

King County. 2022. Greenhouse Gas Emissions Worksheet. Available online at: https://kingcounty.gov/depts/local-services/permits/infosheets-forms/permit-application-forms-title.aspx#G. Accessed June 7, 2022.