

Guide to the Pacific Freshwater / Landbased Aquaculture Application

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INTRODUCTION

Multiple agencies participate in the harmonized application review process. Fisheries and Oceans Canada (DFO) is the agency responsible for regulating, monitoring and licensing all marine finfish, shellfish, freshwater and land-based aquaculture operations in the province. DFO's responsibility includes most aspects of the aquaculture industry including, but not limited to: species cultured, production practices and volumes, fish containment, fish health, escape mitigation and fish habitat protection measures.

Transport Canada (TC) is the federal department responsible for reviewing and approving applications for the placement of aquaculture containment and/or structures within the navigable waters of Canada.

The Ministry of Forests, Lands and Natural Resource Operations and Rural Development is the provincial ministry responsible for managing Crown land, including the issuance of land tenures. This includes tenures for aquaculture facilities and ancillary uses on land covered by water, upland and foreshore. The Ministry is also responsible for the management and licensing of wild harvest and culture of aquatic plants.

The Guide to the Pacific Freshwater / Land-based Aquaculture Application ("the guide") describes the information required by the federal and provincial agencies to review an application for a freshwater or land-based aquaculture facility in British Columbia.

An application must be submitted for any of the following:

- A new freshwater or land-based aquaculture facility;
- An amendment to an existing federal aquaculture licence or provincial Crown land tenure, such as:
 - Change in species and/or production
 - Change in facility
 - Change in infrastructure

- A rebuild, repair or alteration of an existing aquaculture facility that has a *Navigation Protection Act* (NPA) authorization.

As applicable, the federal and provincial agencies will coordinate the review and assessment of applications, including government agency referrals, First Nation consultation, and public comments and work to synchronize decision making.

At the completion of the review process each agency will make its independent decision under the relevant legislation.

Please note, in addition to the harmonized application form, there may be additional authorizations required for a facility that need to be submitted on separate applications.

PRE-APPLICATION CONSIDERATIONS

It is in the best interest of the proponent to follow the recommendations below as this information may affect the feasibility of the proposal:

- Use the provincial [Natural Resource Sector Online Services](#) or the [iMapBC](#) mapping tool to identify interests or conflicts overlapping or in the vicinity of the proposed area;
- Review the [Federal Siting Guidelines](#) posted on the DFO website;
- Consult the [Introductions and Transfers Committee](#) (ITC) for advice on applicability of proposed species;
- Check marine [water classification and status of biotoxin monitoring](#) on the DFO website;
- Ensure the area is zoned for the intended use by contacting [local government](#) and reviewing [land use plans](#) or coastal and marine plans;
- Consider information sharing with First Nations.

CONSIDERATIONS FOR APPLICATIONS INCLUDING LAND-BASED SHELLFISH FACILITIES AND HATCHERIES WITH MARINE WATER INTAKES

Under the *Pacific Aquaculture Regulations*, Fisheries and Oceans Canada considers species as well as water classification during the review of licence applications.

Species Considerations

Sea Cucumber, Spot Prawn, Sea Urchin, Dungeness Crab

DFO is committed to developing a management approach that provides aquaculture opportunities while supporting the conservation and long-term sustainability of wild fisheries and ecosystems. DFO is working to develop phased, integrated approaches for the development of aquaculture involving new and emerging species. In developing these approaches, DFO will consider the following: science advice, existing policy, socio-economic factors and the risk associated with potential genetic, ecological and disease impacts.

Until these phased approaches are in place, DFO will not be considering applications for sea cucumber, spot prawn or sea urchin aquaculture under the *Pacific Aquaculture Regulations*.

Geoduck

In March 2017, DFO released the [Integrated Geoduck Management Framework](#) (IGMF). The Framework provides policy guidance for the integrated management of both wild and aquaculture geoduck fisheries in BC. The siting guidelines and [IGMF maps](#) are provided as a general guide for individuals applying for geoduck aquaculture licences.

Any questions or concerns regarding the IGMF can be directed to:

shellfish.aquaculture@dfo-mpo.gc.ca.

Species at Risk

Olympia Oyster

The Olympia Oyster (*Ostrea conchaphila*) is listed as a species of special concern under the *Species at Risk*

Act (SARA). The SARA Management Plan for Olympia Oyster, developed in 2009, recommends maintaining restrictions on wild commercial and recreational harvest. Further work must be undertaken to assess Olympia Oyster populations and genetic stocks, including potential impacts of Olympia Oyster aquaculture.

In keeping with the intent of the SARA Management Plan, DFO will not consider any applications for Olympia Oyster aquaculture at this time.

Northern Abalone

The Northern Abalone (*Haliotis kamtschatkana*) is listed as an endangered species under SARA. In order to cultivate this species, an exemption under Section 73 of SARA would be required and the cultivation would need to relate to the recovery of Northern Abalone.

The existing Recovery Plan does not include cultivation as a strategy for recovery, therefore DFO will not consider any applications for Northern Abalone aquaculture.

Water Classification and Biotxin Monitoring Considerations

Unclassified Waters and/or Where Biotxin Monitoring Does Not Exist

Approval of a shellfish aquaculture land-based or hatchery application, under the *Pacific Aquaculture Regulations*, is not possible if the marine water intake is in unclassified waters or in a location where biotoxin monitoring does not occur. Classification requires that water quality be surveyed and that actual and potential sources of pollution be identified. This minimizes the potential health risks associated with consuming bivalve molluscan shellfish and protects public health.

The classification of waters and biotoxin monitoring is the responsibility of the Canadian Shellfish Sanitation Program (CSSP). The CSSP is a federal food safety program jointly administered by the Canadian Food Inspection Agency (CFIA), Environment and Climate Change Canada (ECCC) and DFO.

The goal of the program is to protect Canadians from the health risks associated with the consumption of contaminated bivalve molluscan shellfish (for

example, mussels, scallops, oysters and clams). Under the CSSP, DFO is responsible for issuing licences that authorize harvest from contaminated areas, the enforcement of closure regulations and enacting the opening and closing of shellfish areas under the authority of the *Fisheries Act* and Regulations. Information about the [Canadian Shellfish Sanitation Program](#) is available online.

A proponent may make a request to the Pacific Region Interdepartmental Shellfish Committee (PRISC), requesting classification of a new area or biotoxin monitoring. The request must be in writing and include a detailed location description with coordinates and a map, a summary of the proposed aquaculture operation, species, and the techniques planned (i.e. shellfish hatchery operation with marine water intake). PRISC will consider the priority of new classification or monitoring requests in the context of work planning and resources available.

A proponent interested in having an area classified or monitored for biotoxins should provide the requested information, or direct any questions to shellfish.aquaculture@dfo-mpo.gc.ca

Up to date information on Pacific Region [biotoxin and sanitary closures](#) can be found online.

Restricted Waters

CSSP partners do not currently have decontamination data for scallops, mussels, Butter Clam, cockle or Geoduck Clam for relay or depuration processes; thus, approval of a shellfish hatchery aquaculture licence for the above-mentioned species under the *Pacific Aquaculture Regulations* is not possible in waters classified as Restricted.

Management of Contaminated Fisheries Regulations

For species other than those listed above, or for the culture of bivalve shellfish seed in hatcheries where the marine water intake is in waters classified as Prohibited, the applicant must apply for a licence issued under authority the [Management of Contaminated Fisheries Regulations](#).

For more information on the MCFR contact DFO at: DFO.depuration@dfo-mpo.gc.ca

ELIGIBILITY REQUIREMENTS

To apply for Pacific Freshwater or Land-based Aquaculture authorizations, an applicant must meet the following requirements:

Provincial Requirements

To be eligible for a Crown land tenure under the *BC Land Act*, applicants must be:

- Canadian citizens or permanent residents 19 years of age or older; or,
- Corporations that are incorporated or registered in British Columbia. Corporations also include registered partnerships, cooperatives or non-profit societies formed under the relevant provincial statutes.
- First Nations can apply through Band corporations or Indian Band and Tribal Councils. Band or Tribal Councils require a Band Council Resolution a) authorizing the council to enter into the tenure arrangement, and b) giving the signatories of the tenure document the ability to sign on behalf of the Band. For tenures which are to be registered in the Land Title Office, First Nations must apply through either a Band corporation or trustees. Band members can elect one or more trustees to hold a tenure on behalf of the Band. Verification of election must be by way of a letter signed by the Chief and councilors of the Band giving the full names of the trustees and stating that they were elected at a properly convened meeting of the Band. A Band Council Resolution is not required.
- In the case of aquatic land, non-Canadians or non-Canadian companies who are incorporated or registered in BC can apply if they own the adjacent upland. This provision applies to applications for commercial as well as private purposes.

Fisheries and Oceans Canada Requirements

To be eligible for an aquaculture licence under the *Pacific Aquaculture Regulations, Fisheries Act* (Canada), applicants must be:

- Individual(s) or companies legally entitled to operate a business in Canada; and
- Individual(s) at least 19 years of age.

Transport Canada Requirements

To be eligible for a *Navigation Protection Act* (NPA) approval, applicants may be:

- A federal, provincial, or municipal government; or
- A person, company, organization or Crown Corporation.

Change in Ownership

For a change in tenure ownership contact westcoast.landreferrals@gov.bc.ca and provide your contact information and tenure file number.

Once a tenure is transferred to a new owner, you must contact DFO at:

amdreferral.xpac@dfo-mpo.gc.ca to request a transfer of the federal aquaculture licence.

GLOSSARY

Access – Means the harvest of wild aquatic stock for aquaculture purposes (relay, ongrowing, brood stock, etc.).

Amendment – Means a change to an existing authorization.

Application Package – Means the Pacific Freshwater / Land-based Aquaculture Application and supporting materials required for submission of an aquaculture proposal under the *Fisheries Act (Pacific Aquaculture Regulations)*, *Navigation Protection Act* and/or *BC Land Act*.

Bivalve Shellfish – Means molluscs that have a two-part hinged shell, such as clams, oysters, mussels and scallops.

Chart Datum – Means the level of water from which charted depths displayed on a nautical chart are measured.

Containment Structures – Means net pens, bag cages, tanks or similar structures used to contain fish for the purpose of aquaculture.

Containment Structure Array – Means a group of containment structures physically attached to each other, or in the case of circular structures, up to a maximum of 60m apart.

Finfish – Means vertebrate fish.

Finfish Aquaculture – Means the growing and cultivation of finfish for commercial purposes in any water environment or in human made containers of water.

Freshwater Body – Means a natural freshwater body that connects to other water bodies, for example a man-made pond that connects to other bodies is “in a freshwater body”.

Grow-out – Means growing-out a product from juvenile to market size or harvest.

Introduction – Means the transport and release of live fish (seed, spat, eggs, juveniles or adults) into waters outside their present range, and includes movement of fish from a hatchery or other fish

breeding or holding facility to the marine environment.

Introductions and Transfers Committee (ITC)

– Means the Federal-Provincial joint committee responsible for reviewing applications for the introductions and transfers of fish and providing recommendations on issuance of the associated licences.

Isolated Pond – Means a pond (usually man-made) that does NOT have any connectivity to a natural water body.

Land-based – Means operations that are located on land and are enclosed (i.e. hatcheries, raceways or tank based grow-out facilities). Land-based systems can be flow-through or recirculating.

Recirculating Aquaculture System – Means “Closed” or “Recirculating Aquaculture Systems (RAS)” which re-use water with mechanical and biological treatment between each use.

Most systems use tanks for growing the fish, with water being recirculated through filters and pumped back into the tank.

Seed – Means a submarket size bivalve shellfish requiring a minimum of 6 months to reach market size under normal growing conditions, and that has been gathered from the wild or grown in a hatchery.

Shellfish – Means an aquatic shelled mollusc (i.e. an oyster or cockle) or a crustacean (i.e. a crab or shrimp).

Spat – Means the spawn or larvae of shellfish, esp. oysters.

Tenure - Means a provincial authorization issued under the authority of the Land Act to allow for use and occupancy of the provincially owned Crown land or Crown land covered by water.

Transfer – Means the movement of individuals of a species or population of live fish (seed, spat, eggs, juveniles or adults) from one location to another within its present range and includes transfers to or from a hatchery or other fish breeding or holding facility.

U-catch – Means fee-for-fishing businesses, where customers pay to fish in privately stocked ponds.

PART I – GENERAL INFORMATION

NEW APPLICATIONS VERSUS AMENDMENTS

There are two harmonized application forms:

1. New application – this form is required for any aquaculture site which has not existed previously.
2. Amendment application – this form is used to apply for changes to: the tenure area, species, production, and/or to infrastructure.

Unless otherwise indicated, the following sections apply to both new and amendment applications. Please note there is a small section pertaining only to amendments later in this document.

SITE GENERAL INFORMATION

Land Ownership and/or Tenure Type

Depending on the ownership or controlling interest of land in your area of interest, there may be different requirements.

Provincial Crown land:

- If you are intending to use Crown land or Crown land covered by water, a *Land Act* authorization is required. Applications for marine-based aquaculture sites are submitted using the harmonized application form. Crown upland sites, such as hatcheries, are applied for under the [Commercial or Industrial](#) policies.
- If there is an existing tenure in your area of interest and you have an agreement with that tenure holder you may require a sub-lease agreement approved by the province; contact westcoast.landreferrals@gov.bc.ca for more information.
- If the land is within a provincial park or conservancy, a [Park Use Permit](#) is required. Prior to completion of a harmonized application, it is recommended that you consult with BC Parks to assess feasibility of your proposal within a provincial park or conservancy.

Private land, Federal land or Harbour Authority:

- If your proposal falls within land that is not provincial Crown land you will need to contact the land owner or controlling interest (e.g. harbour authority) to obtain authorization to operate.

First Nations Reserve:

- First Nations intending to operate fully on Reserve land do not require a provincial authorization.

Legal Description

If surveyed, provide the legal description as provided by the Land Title Office, e.g., Lot 1 of Section 31, Township 12 W6M Kamloops Division of Yale District Plan 18411.

A legal description is found in the Certificate of Title. A copy of the Certificate of Title must be attached to the application along with a copy of your Registered Survey Plan, if available.

If not surveyed, provide metes and bounds as described in the document *iMapBC Instructions for Aquaculture Applications*, available on the province's [Land Use – Aquaculture](#) web page.

Global Positioning System coordinates for the center of the application area/tenure

Global Positioning System (GPS) are required to depict the general site location for aquaculture mapping purposes. For new applications record the center of the proposed tenure area, and for amendments record the center of the new total tenure area (existing and proposed).

These coordinates may be derived by:

- Differential GPS;
- GIS using digital mapping program i.e. iMapBC; or
- [Canadian Hydrographic Service](#) (CHS) charts.

Provide the latitude and longitude for the center of the proposed area in degrees decimal minutes or degrees, minutes, seconds.

Note: To convert Decimal Degrees to Degree Decimal Minutes:

For the latitude 45.57463° , 45 is the Degree Value 0.574639 can be converted to the Decimal Minutes value by multiplying by 60 = 45 Deg 34.478 Min ($45^{\circ}34.478'$)

To convert Decimal Degrees to Degrees Minutes Seconds:

Continue on with calculation above to convert the minutes value to seconds 0.478 can be converted to the Decimal Seconds value by multiplying by 60 = 45 Deg 34 Min 28.7 Sec ($45^{\circ}34'28.7''$)

On-line calculators are also available.

FIRST NATIONS CONSIDERATIONS

Canada and the Province of British Columbia are legally obligated to consult and, where appropriate, accommodate First Nations on decisions that could impact treaty rights or aboriginal rights and title ("Aboriginal Interests"). Federal and provincial decision-makers are responsible for ensuring adequate and appropriate consultation and accommodations.

Proponents are encouraged to engage with First Nations as early as possible in the planning stages to build relationships and for information sharing purposes. You may

use the province's [Consultative Areas Database](#) to identify which First Nations to engage.

For more information please review the provincial website: '[Consulting with First Nations](#)'; specifically proponents are advised to review: "[Guide to Involving Proponents When Consulting First Nations](#)".

For applications put forward by or on behalf of Indigenous or First Nations individuals, organizations or corporations contact freshwater.aquaculture@dfo-mpo.gc.ca for additional resource materials and information.

Why is the Government required to consult First Nations regarding my application?

The courts have determined that the Crown has a legal duty to consult First Nations and seek to address their concerns before potentially impacting treaty rights or asserted or established aboriginal rights and title ("Aboriginal Interests"). This duty stems from a constitutional obligation arising from the recognition of aboriginal and treaty rights in the Constitution Act, 1982.

What is an Aboriginal Interest?

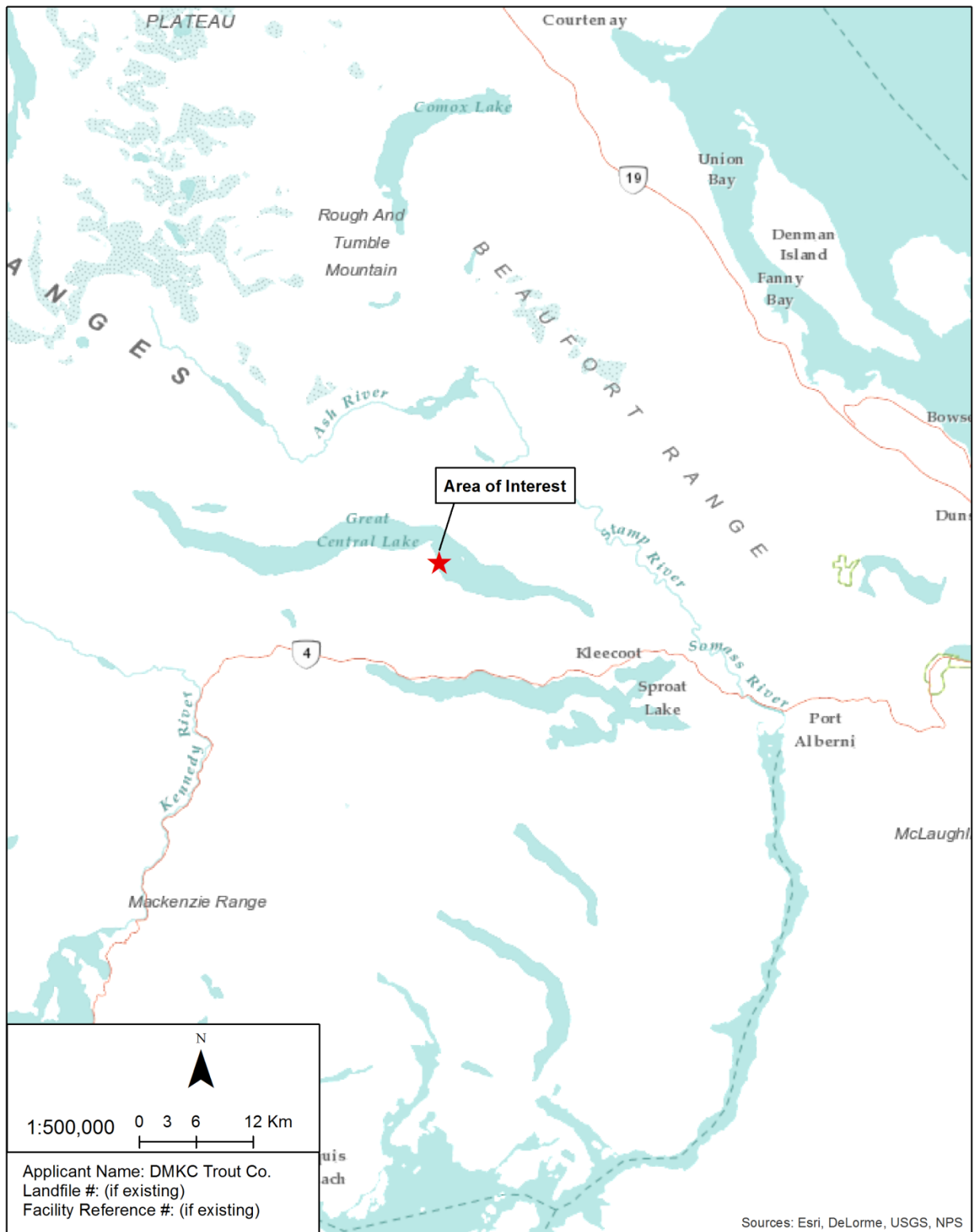
The term Aboriginal Interest refers to claimed or established treaty rights or aboriginal rights (including title). Aboriginal rights are practices or traditions integral to a First Nation culture at the time of contact. Examples include fishing, hunting and gathering plants. Aboriginal title is a subcategory of aboriginal rights that is a unique interest in land that encompasses the right to exclusive use and occupation of land for a variety of purposes. Treaty rights are held by a First Nation in accordance with the terms of a historic or modern treaty agreement with the Crown.

MAPS, DIAGRAMS AND ADDITIONAL REQUIRED DOCUMENTS

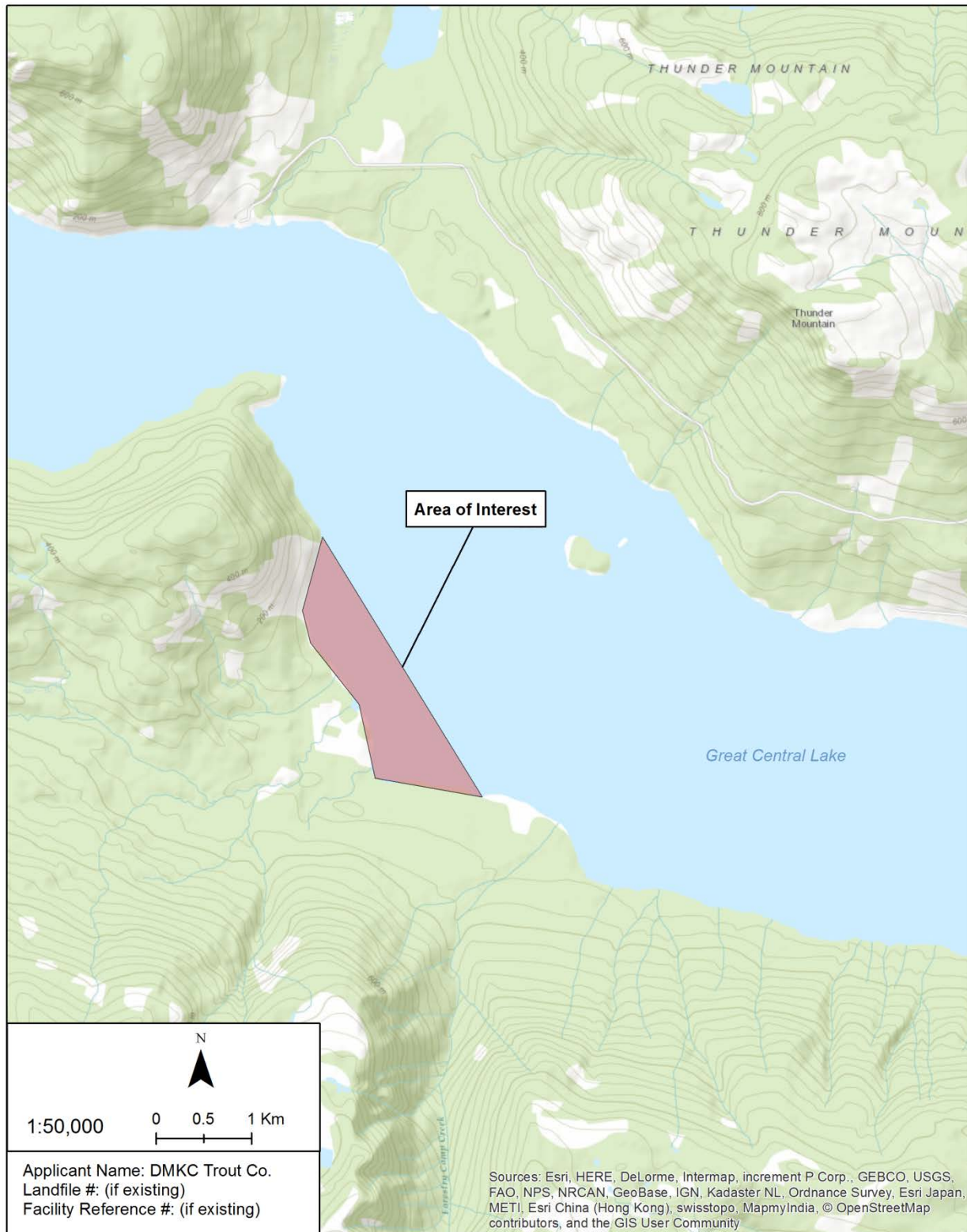
Mapping Instructions

Example maps and diagrams are provided below. For more detailed instructions on creating the general location, detailed location and application area maps using the [iMapBC](#) tool, and for instructions on how to create metes & bounds or corner point descriptions, refer to the document *iMapBC Instructions for Aquaculture Applications*, available on the province's [Land Use – Aquaculture](#) web page.

General Location Map – for all applications



Detailed Location Map for all applications



Operational Diagram Instructions - for lake based applications

Top View Operational Diagram (new and amendments)

- Using the [iMapBC](#) tool create a 1:5,000 scale map showing the area under application. Please include on the map the scale of the original map or chart i.e., 1:30,000 and ensure all details are noted relative to the 1:5,000 scale. (Note: distortion will occur during enlargement or reduction so modification may be required to fit the 1:5,000 scale).
- The diagram must include a north arrow and bathymetric contours of the lake.
- All physical structures associated with the proposed operation must be indicated on the diagram, including all containment structures, anchor lines, feed barges, living accommodations, mort floats, docking stations, miscellaneous work floats, etc.

The structures noted on the diagram must be the same information contained in the Infrastructure Information Table in the application.
- Containment structures should be labeled from 1 through n, beginning in the north-west corner and proceeding clockwise from there. If an alternate labeling system already exists for the facility, please provide an explanation when the diagram is submitted. These numbers must remain consistent through the length of a grow-out period
- A table with the latitude and longitude in degrees decimal minutes of each corner of the containment structure array(s) must be submitted. Geographic coordinates for proposed cage corners may be obtained using electronic mapping software; however the licence holder shall ensure a professional Global Positioning System (GPS) is used to obtain real-time (RT) differential or post-processed (PP) differential corrected (corrected dGPS) readings for each corner of the containment structure and submitted to DFO prior to transferring fish onsite.
- A table with the latitude and longitude in degrees decimal minutes of the proposed sampling stations or transects must be submitted. The location of the proposed sampling stations or transects must be established by the process outlined in the *Aquaculture Activities Regulations* and indicated on the 1:5000 (or appropriate scale) Habitat Map submitted with the application.

Note: The structures noted on the **top** and **side** view diagrams must be the same information contained in the Infrastructure Information table of the application.

Operational Diagram Instructions for all other applications

All diagrams are mandatory for new site applications as well as amendment applications.

General Location Map: A topographic map at a scale of 1:50,000 to 1:100,000 indicating the general location of the area under application, noting the location of significant geographic features, such as a lake, mountain, road, community, etc.

Detailed Location Map: A map with a scale between 1:20,000 and 1:40,000, showing the detailed location of the area under application.

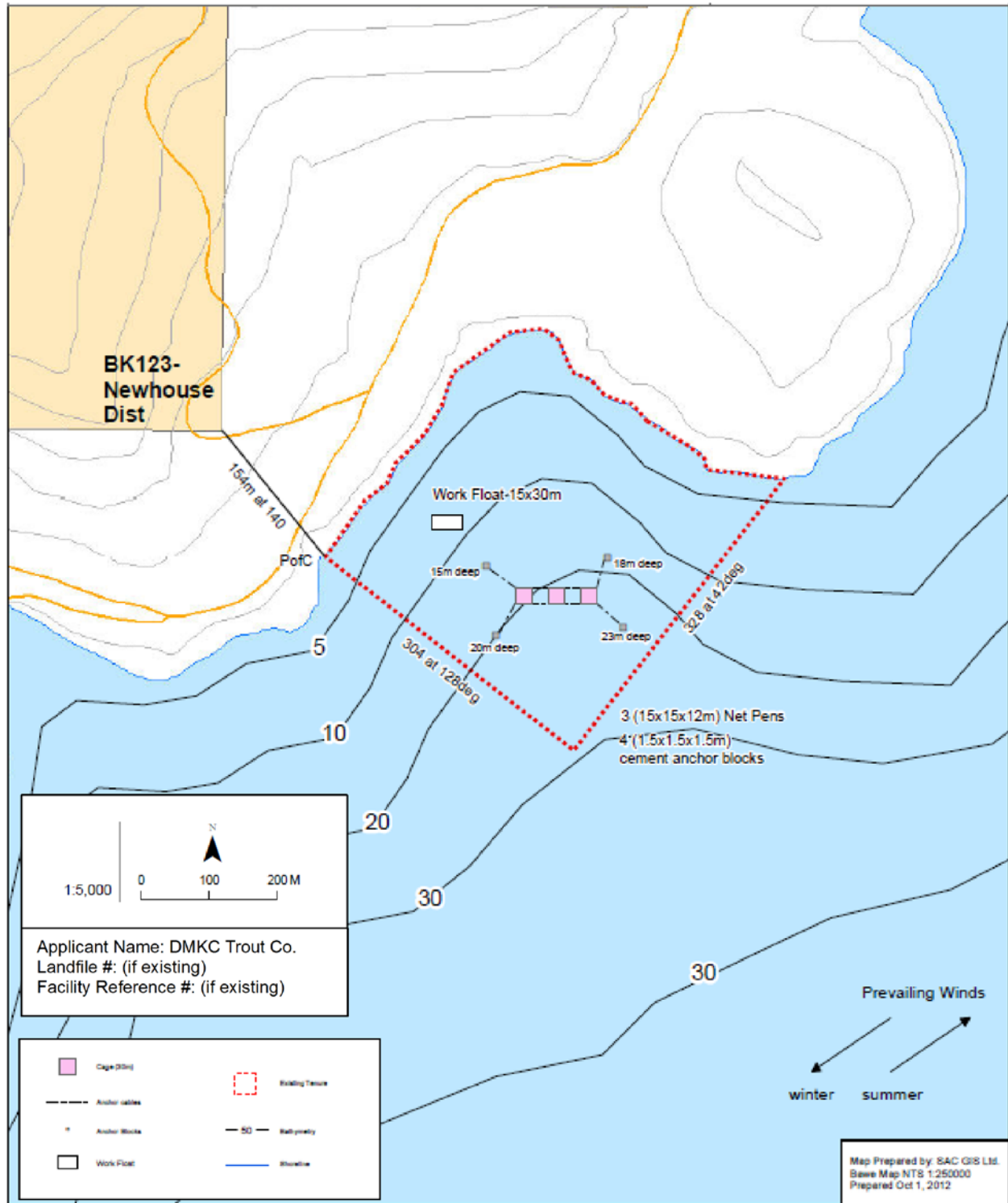
Top View Operational Diagram: A 1:5000 scale diagram showing the existing and proposed aquaculture facility area and infrastructure and boundaries.

Habitat Map: A 1:5000 map showing boundaries of the application area, infrastructure and including habitat characteristics from the habitat assessments (see page 17).

Note: The structures noted on the **top** and **habitat** diagrams must be the same information contained in the Infrastructure Information table of the application.

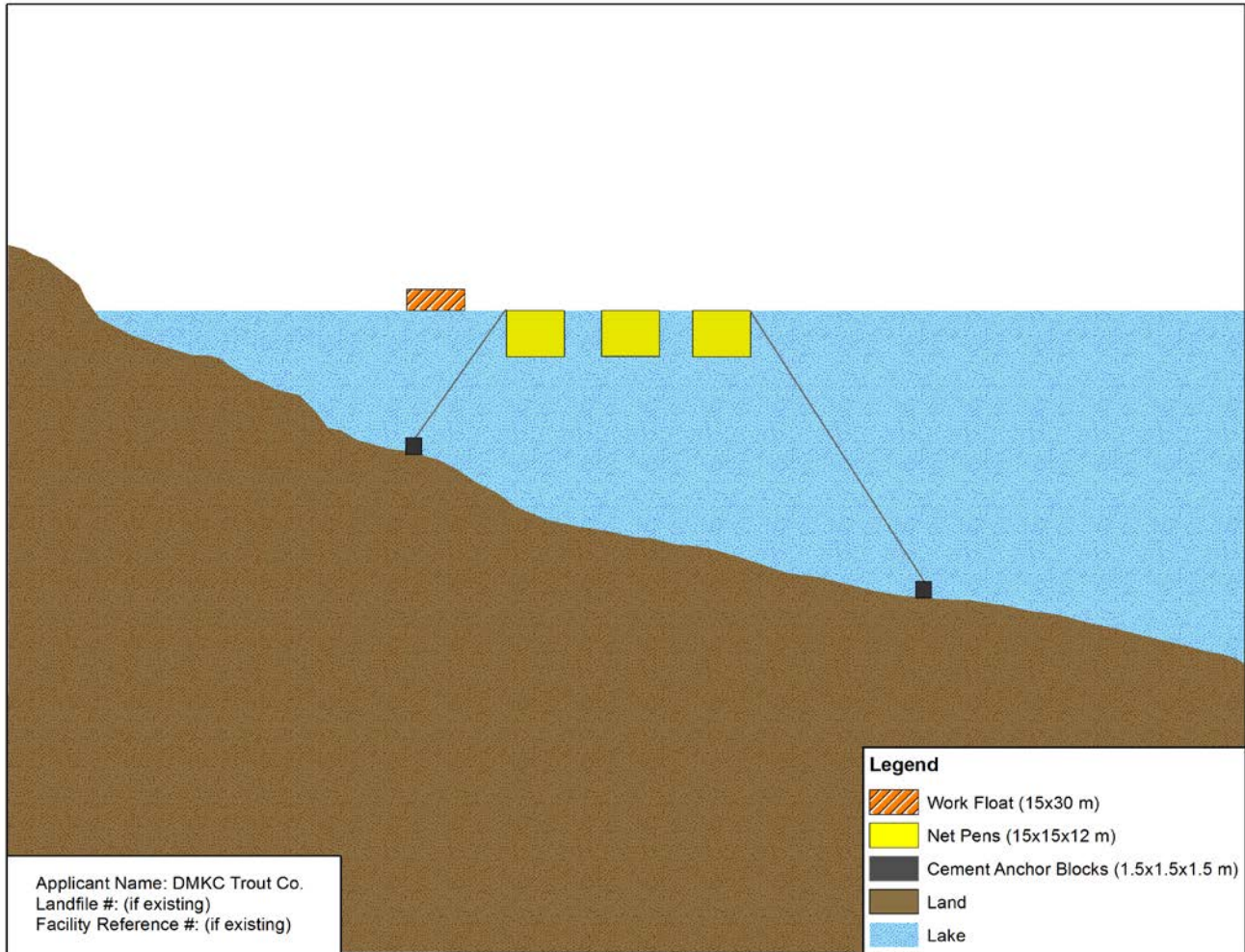
Top View Operational Diagram – for all applications

Top View Operational Diagram — Freshwater Lake Site



Side View Operational Diagram– for lake based applications only

Where possible, the lake bottom can be used as a reference provided detail is not compromised.



Habitat Map – for all applications

Contact freshwater.aquaculture@dfo-mpo.gc.ca to request more information on assessing the species and fish habitat characteristics present in a proposed or existing freshwater tenure area. For lake based sites, characteristics include bottom substrate type, depth contours, location and type of flora and/or fauna, fish habitat and existing fish species. Baseline dive and/or video transect locations and benthic sampling locations must be included. Current meter location, sampling locations and DEPOMOD max feed rate predictions should also be on this map.

Intensive Use Area of Site – for lake based applications only

For the purposes of calculating rent the Province separates the application into intensive use area and extensive use area. The intensive use area is the Crown land occupied by structures that have a physical presence on the surface of the water and includes a 30 metre buffer around those structures. The 30 metre buffer is intended to cover the area where anchor lines are likely to pose a restriction to navigation. The determination of the 30m buffer will vary depending on the layout of improvements, described below.

A worksheet with intensive use area calculations is required (see Part 1, section E of the application form). If more than one cage array option is proposed, i.e. arrays that would not be used concurrently, please submit one worksheet per cage array.

A sample worksheet and calculations are provided below. When completing the worksheet please follow these principles:

Cage Arrays:

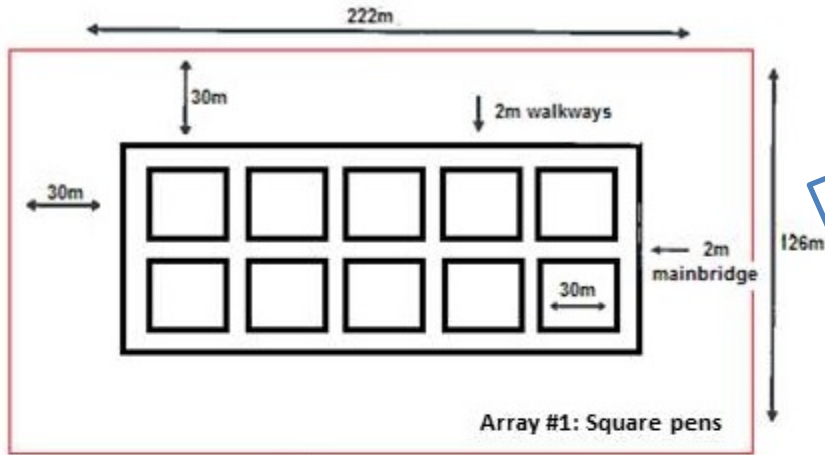
- List each cage array as a separate line item in the worksheet.
- Calculate the intensive use area for each cage array separately, including walkways and a 30 m buffer around each array.
- For circle cage arrays apply the 30 metre buffer around the outside anchor buoys of the grid array.

Ancillary Structures:

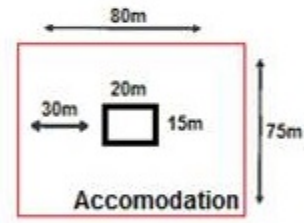
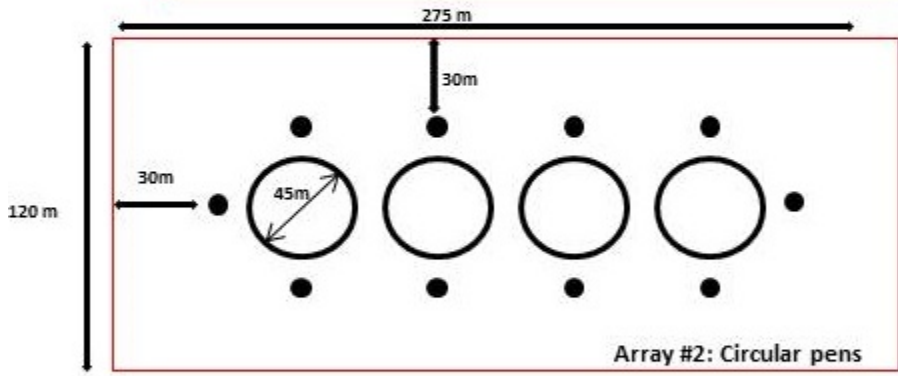
- List each structure as a separate line item in the worksheet.
- Calculate the intensive use area for each structure separately, including walkways, and with a 30 m buffer around each structure.
- If ancillary structures will be permanently grouped in the same location on the tenure, apply a 30m buffer to the perimeter of the grouping and list as a single item on the worksheet.

EXAMPLE: Intensive Use Area Worksheet

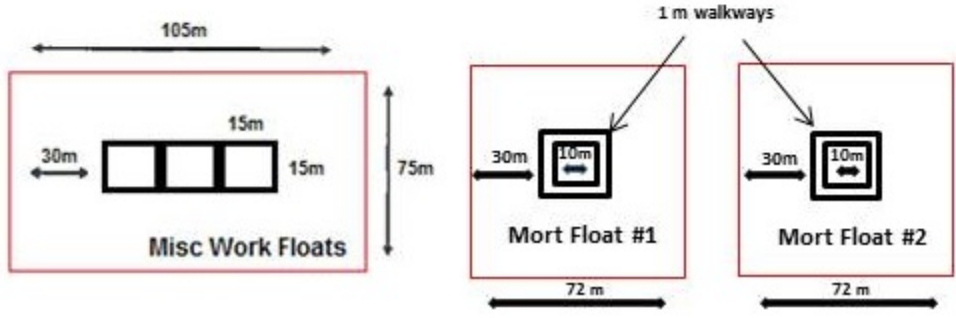
NOTE: This worksheet is required to fulfill application requirement Part 1 Sec. E1-7.



NOTE: For amendments: please label worksheet with the Crown land file number.



NOTE: If the site has multiple cage options, please submit one worksheet per configuration.



Improvement Description	Improvement Dimensions (m)	Quantity of Improvements	Intensive Use Area Calculation (m)	Intensive Use Area (m ²)
Array #1	30m X 30m	10	222m X 126m	27,972m ²
Array #2	45m	4	120m X 275m	33,000m ²
Accommodation	20m X 15m	1	80m X 75m	6,000m ²
Misc. Work Floats	15m X 15m	3	105m X 75m	7,875m ²
Mort Float #1	10m X 10m	1	72m X 72m	5,184m ²
Mort Float #2	10m X 10m	1	72m X 72m	5,184m ²
Total Intensive Use Area (ha*)				8.52ha (85,215m²)

* Rounded to two decimal places.

WATER USE

The *Water Sustainability Act* was passed in February 2016. Important changes include the regulation of groundwater in addition to surface water. If your proposal involves the use of a fresh water source you will need to apply for a Water Licence. More information can be found on the province's [Water Licences & Approvals](#) web page.

ADDITIONAL CONSIDERATIONS FOR AMENDMENT APPLICATIONS

Change in Tenure Area

Expansion

Applications to expand the current tenure boundary require an amendment. Please ensure that the Application Area Map and Top View Operational maps for amendments clearly indicate the existing tenured area and the new area being requested.

Reduction

Applications to reduce tenure area may be considered a minor amendment if there are no other changes to the authorization, such as changes in infrastructure. Applications for minor amendments do not require referrals to other government agencies or consultation with First Nations or members of the public. If an application to reduce tenure area involves other changes, such as a change in infrastructure, the full application package may still be required.

Relocation

All requests for relocation of aquaculture sites will be considered against the restrictions in the [Land Use Operational Policy for Aquaculture](#). Where proponents are requesting to relocate an aquaculture site from an existing location to an entirely new location that has not been previously used for aquaculture, the proposal should be submitted using the new application form. All other requests for relocation will require an amendment application (i.e. boundary shifts or relocating to a site currently used for aquaculture).

Change in Infrastructure

Incidental use

Changes to improvements within an existing aquaculture tenure area that are not considered by the Province to be substantial alterations are considered incidental aquaculture use.

Incidental use does not require a tenure amendment. More information on eligibility can be found under Section 8.1.1. of the [Land Use Operational Policy for Aquaculture](#). If your proposal is eligible under Incidental Use, you may select the check box in Section A2 – infrastructure of the amendment application form and are not required to complete Part II (Sections A and B), nor submit provincial application fees.

Cage Array Numbering

Applications for amendments within a grow-out period, where pen arrays are altered, must ensure each pen maintains its original number throughout the grow-out period.

PART II – INFORMATION FOR THE BC MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS AND RURAL DEVELOPMENT

The [Land Use Operational Policy for Aquaculture](#) applies to the siting and placement of improvements on tenures required for the cultivation of finfish, shellfish and marine plants on aquatic Crown land (including lakes) or foreshore. The policy does not apply to the use of Crown upland for aquaculture purposes, including hatcheries and trout farming. As such, the following Siting Considerations may not apply. Crown land for these uses may be authorized using the operational land use policies for Commercial or Industrial - General. Review the [appropriate policy online](#) prior to completing your application.

SITING CONSIDERATIONS

A number of siting considerations are defined in the provincial [Land Use Operational Policy for Aquaculture](#). Where proposals do not meet the established siting considerations, applicants must include a detailed explanation and justification for proceeding with the application. It is recommended that applicants work with relevant agencies when developing adaptive management strategies.

We recommend using [Natural Resource Sector Online Services](#) or [iMapBC](#) to identify interests or conflicts in the area. Refer to the document *iMapBC Instructions for Aquaculture Applications*, available on the provincial [Land Use – Aquaculture](#) web page for Instructions on using iMapBC to research a proposed area and create the necessary maps. This instructional guide demonstrates how to add additional layers to assist in answering the siting questions. For each of the siting considerations referenced below, the applicable iMapBC layers have been identified with a “/” denoting differences between layers and sub-layers. If polygons appear when the layers are added, more information can be found by right-clicking your mouse on the polygon and selecting ‘What’s here? (Identify)’.

iMapBC also has a measuring tool to allow you to determine distance between your proposed area and other interests, e.g. provincial parks.

Does your proposal infringe on the riparian rights of an upland owner?

[iMapBC layer: Land Ownership and Status/ Integrated Cadastral Fabric](#)

Landowners of waterfront property have the right to access their property along all points of the natural boundary, or waterfront; this is commonly referred to as riparian rights. Placement of improvements should not infringe on the riparian rights of the upland owner without their consent. This applies to both private and Crown land ownership.

If the upland is privately owned, and the application infringes on riparian rights, (i.e. infrastructure will be placed such that it impedes access to the upland), you must obtain a letter of consent from the landowner(s). To determine the name of the upland owner, find the Parcel Identification (PID) Number in iMapBC, then provide the PID to the Land Title and Survey Authority which will be able to identify the upland owner.

Upland owners are not obligated to provide consent. If consent is provided, it may be time limited and is non-transferable if the landowner changes.

When the Crown owns the upland, further discussions with provincial ministries may be required as any designations on the upland parcel need to be considered.

Applicants who are unsure about the legal rights of upland owners are encouraged to independently seek legal advice.

[Sample upland owner consent letter](#)

Is the intended use consistent with approved local government bylaws for land use planning and zoning?

[iMapBC layer \(s\): Administrative Boundaries / ABMS- Regional Districts, Island Trust, Municipalities](#)

Local governments have authority to approve broad objectives, policies and guidelines respecting land use and development. Local governments exercise their authority through zoning bylaws, permits and other instruments (such as an Official Community Plan).

Applicants should contact the applicable local government to determine whether Zoning or Rural Land Use Bylaws apply to aquaculture activities on the specific parcel under application. Local governments review aquaculture applications and provide comments in relation to their Official Community Plans.

If your proposal is not consistent with the current local government land use designations, zoning or bylaws, you are strongly recommended to contact the applicable local government to discuss your proposal prior to submitting an application. Your proposal may be subject to a rezoning process. If rezoning is required, please provide details and copies of any relevant correspondence between the applicant and local government. A positive decision by the Province regarding Crown land tenure does not guarantee that the activity can occur.

All tenure holders must abide by all applicable laws including zoning and bylaws.

Is the site situated greater than one km in all directions from a First Nation Reserve?

[iMapBC layer: Administrative Boundaries/ Indian Reserves Including Band Names](#)

Close proximity to a First Nations Reserve or community often indicates the presence of stronger aboriginal interests.

If the proposed tenure boundary is situated within one kilometre of a First Nation Reserve, proponents are required to obtain an Official Band Council Resolution supporting the application. Details of any relevant correspondence or communication should be provided to the Province.

The one kilometre distance should be measured from the edge of the First Nation Reserve to the nearest edge of the proposed tenure boundary. Proponents are strongly encouraged to communicate with First Nations early in the process.

Is the site situated greater than one km in a direct line of sight from existing federal parks, regional district parks, provincial parks, marine protected areas, and conservancies (or approved proposals for these)?

[IMapBC Layer\(s\): Administrative Boundaries/ Provincial Parks, Eco Reserves, etc.- Tantalís/ Conservancy Areas - Tantalís](#)

[IMapBC Layer: Base Maps/ Local and Regional Greenspaces](#)

The one kilometre distance should be measured in a direct line of sight from the park, marine protected area, or conservancy boundary to any surface improvement at the proposed aquaculture facility. Park information can be found on [BC Parks web page](#).

In general, aquaculture applications are not considered if they are within one kilometre of these parks, areas and conservancies. However, if the proposed site is within the one kilometre distance, proponents may be required to provide additional information to support the application including correspondence with the parks governing agency.

This siting consideration may be relaxed if an aquaculture proposal is within one kilometre of a park or conservancy greater than 1000 hectares in size, or if less than 1000 hectares in size, the proposed site is not highly visible from the park visitor-use areas. The approval to relax the siting consideration is subject to a site-specific review by the aquaculture tenure decision maker with input from the agency responsible for the specific park.

Applicants are advised to contact relevant agencies directly to determine if there are any approved proposals for federal, provincial or regional parks or marine protected areas, prior to submitting their aquaculture proposal.

Is the site situated greater than one km from ecological reserves smaller than 1000 ha or approved proposals for ecological reserves smaller than 1000 ha?

[iMapBC Layer\(s\): Administrative Boundaries/ Provincial Parks, Eco Reserves, etc. Tantalís / Ecological Reserves - Tantalís](#)

Applicants should determine the distance between the site applied for and any nearby existing or approved proposals for ecological reserves less than 1000 hectares. The one kilometre distance should be measured from the edge of the ecological reserve to the edge of the proposed tenure boundary at the site location.

For more information on proposed ecological reserves you may contact [BC Parks](#) directly.

Is the site situated greater than one km from the mouth of an anadromous salmonid bearing stream determined as significant by the Province?

It is strongly recommended that a new facility proposal be at least one kilometre away from any anadromous salmonid bearing streams. A proposal to locate within one kilometre of a salmonid bearing stream determined as significant by the Province requires a mitigation strategy reviewed by provincial Fish and Wildlife biologists.

The one kilometre distance should be measured from where the stream enters the lake to the edge of the proposed net cage location.

The applicant is responsible for determining whether streams within one kilometre of the proposed site have anadromous salmonid fish present. It is recommended to first determine if information about fish and fish habitat already exists. The following resources may be helpful:

- [Fish & Fish Habitat](#) information
- [Habitat Wizard](#): Habitat Wizard is a map-based tool that allows users to spatially access detailed fish, wildlife and ecosystem information online.
- [Fisheries Inventory Data Queries](#) (FIDQ): FIDQ provides easy access to BC lake, stream and fish data, as well as fish stocking data and downloadable bathymetric maps through a set of topic-based queries that extract information from the provincial BC Geographic Data Warehouse (BCGW).
- [Cross-Linked Information Resources](#) (CLIR): CLIR is a tool for searching several databases at once. You can find a variety of files (reports, studies, data, etc.) on a range of environmental and natural resource topics.
- [EcoCat Ecological Reports Catalogue](#) (EcoCat): EcoCat provides access to reports on ecological activities in British Columbia, plus related files such as maps, datasets and published inventories when available. Subject areas include: aquatic species and habitats, terrestrial species and habitats, floodplain mapping, reservoirs, ground water and vegetation.
- [Fish-stream Identification Guidebook](#): Additional information on the classification of fish streams is available from this Forest Practices Code guidebook.

If there is no existing information on fish presence you are required to undertake stream assessments on all streams within one kilometre of the proposed site.

Field surveys for fish-stream identification must be designed and carried out by Qualified Environmental Professionals. Persons trained to the level of expertise necessary for these surveys most commonly include biologists, biological technicians and environmental technicians.

Surveying must occur at the time(s) of year when anadromous salmonids are expected to be present and Qualified Environmental Professionals should be consulted to assess the appropriate sampling window.

Proponents are required to obtain a provincial [Scientific Fish Collection Permit](#) prior to commencing fieldwork as required under the *Wildlife Act*. To ensure that the data collected will be acceptable surveys must follow Resources Information Standards Committee's (RISC) [Reconnaissance \(1:20,000\) Fish and Fish Habitat Inventory: Standards and Procedures](#)

Is the intended use consistent with a local area Land Use Plan or Marine Plan?

Applicants are required to review any provincial land use or marine plans that are relevant to the application area. It is the applicant's responsibility to determine whether their proposal is consistent with those plans before submitting their application. If the intended use is not consistent contact Front Counter BC.

Further information on [Land and Coastal Marine Plans in BC](#) and the [Marine Planning Partnership for the North Pacific Coast](#) (MaPP) is available online. The [Marine Plan portal](#) on this site allows for detailed research about the MaPP study area.

ADDITIONAL CROWN LANDS INFORMATION

For applications made by more than one individual (Joint Tenant or Tenants in Common)

When more than one individual is identified as the proponent there are options for indicating the relationship between the parties:

- Joint Tenants (Land Tenure): In a joint tenancy situation, if one of the tenants expires, his/her interest in the land passes to the surviving joint tenant(s).
- Tenants in Common (Land Tenure): In a tenants in common situation, if one of the tenants expires, his/her interest in the land passes to his/her estate.

If a positive decision is made regarding your application, a multiple tenant relationship will be recorded on any subsequent legal documents. The preferred tenancy relationship must be declared when the application is submitted. Each person indicated in a multiple tenant relationship must meet the mandatory eligibility requirements. Applicants are encouraged to seek independent legal advice before choosing an option.

PART III – INFORMATION FOR FISHERIES AND OCEANS CANADA

INDIVIDUAL APPLICANTS

Fisheries and Oceans Canada (DFO) requests that all applicants provide their date of birth. This information will only be used by DFO as a means to correctly identify licence holders. If there is more than one applicant, insert the names of each applicant.

CULTURED SPECIES AND PRODUCTION

Species intended for culture other than species currently licensed by DFO (species in the ‘Other’ category) will require an in-depth review and/or risk assessment by the Introductions and Transfers Committee (ITC). Additional information on [introductions and transfers](#) is available on the DFO website.

For land-based or recirculating aquaculture system (RAS) aquaculture facilities, Fisheries and Oceans Canada (DFO) monitors the combined maximum annual production to ensure stocking densities meet fish health performance measurements.

For freshwater aquaculture facilities (i.e. lake or river based) DFO monitors the combined peak biomass to ensure that the aquaculture operations do not increase the benthic footprint or exceed established environmental thresholds in the last production cycle.

For amendments, indicate all currently licensed species and production in this section.

FACILITY OPERATION

Purpose of culture for each proposed species

Includes sale to food market, sale or transfer to another aquaculture facility, broodstock development etc.

Note: Aquaponics facilities might NOT require a Federal Aquaculture licence if the fish are not being sold to the food market or sold or transferred without sale to another licensed aquaculture facility. Please refer to the [Introduction](#) for more information.

Closed contained facility

“Closed contained facility” or “Recirculating Aquaculture Systems (RAS)” are those which re-use some or all water with mechanical and biological treatment between each use. Most systems use tanks for growing the fish, with water being recirculated through filters and pumped back into the tank. If you will be recirculating water on site, please check “yes” and indicate the percentage of the total circulation volume. If you will not be recirculating water on site, check “no”.

Effluent Treatment

As a condition of licence, a licence holder must meet provincial and federal requirements for treatment of effluent. An applicant may be asked to describe effluent treatment works include details on the following:

- Volume of effluent discharged (peak, minimum and average).
- Type(s) of wastewater treatment to be used.
- Disinfection technique to be used, if required.
- Proposed effluent quality objectives to be met.
- Proposed monitoring plans.
- Provisions for the collection and treatment of sludge material and site drainage.
- Management plans for overflows and system upsets.

A variety of technologies are available for the treatment and containment of solid and liquid wastes generated as part of land-based aquaculture operations. Effluent volumes, cost, and available land space are often primary considerations in choosing treatment systems.

Effluent treatment technologies that can be considered are:

Recirculating systems

In a recirculating system a portion of the process water is reused a number of times, after filtration or other treatment, before being finally discharged.

Filter or screening systems

Biological filtration removes suspended solids through bacterial action while mechanical filters provide a physical barrier (e.g. sand, screens) that traps particulate matter.

Settling ponds

Settling ponds are one of the simplest and most common structures used for particulate removal. The velocity of the effluent is slowed in a large tank or pond and the particulate matter is allowed to settle to the bottom for later removal. The following factors should be considered when evaluating the suitability of settling ponds:

- Ponds should be adequately sized to handle the flow from the facility along with storm events (e.g. 1 in 10 year storm) and site runoff. Flow into the ponds should be evenly distributed with minimal turbulence and resuspension of settled material.
- Settling ponds should be lined with an impermeable material such as compacted clay, concrete or synthetic materials.
- Sludge should be removed from the ponds at least once per year. Where possible two ponds should be constructed so that one can continue to receive wastewater while the second one is being cleaned and drained.

Infiltration ponds

Infiltration ponds are used as discharges from circulation, allowing drawn and used water to infiltrate back into the water table. The following factors should be considered when evaluating the suitability of infiltration ponds:

- Infiltration ponds should be designed to accommodate the peak discharge from the facility, along with storm events and site runoff during the highest water table period of the year.
- The permeability of the infiltration pond must be maintained over time and infiltration ponds should only be receiving pre-settled effluent.
- Where large volumes are being discharged, a professional attestation may be required.

WILD FISH, FISH HABITAT AND SITING CONSIDERATIONS

The [Fisheries Act](#) requires that projects avoid causing [serious harm to fish](#) unless authorized by the Minister of Fisheries and Oceans Canada. This applies to activities being conducted in or near waterbodies that support fish that are part of or that support a [commercial, recreational or Aboriginal fishery](#).

To protect fish and fish habitat, including [aquatic species at risk](#), their residences, and their critical habitat, efforts should be made to [avoid, mitigate and/or offset harm](#). Following the [measures to avoid harm](#) will help you comply with the *Fisheries Act* and the [Species at Risk Act \(SARA\)](#) SARA.

More information on measures to avoid harm to fish and fish habitat, please visit the [Projects Near Water website](#).

Modelling

Depositional Modelling

The location and intensity of lakebed impact from biological oxygen demanding (BOD) matter from all proposed containment structure arrays is required for all new site applications. For amendments, historic information will be accepted if it is still relevant and all elements below can be submitted. If there is a larger containment array being proposed, a change in location of a containment array, or an increase in tonnage that results in a new or bigger benthic footprint, new information is required. This can be achieved using acceptable models such as DEPOMOD.

Predicted BOD matter results for all proposed containment structure arrays should be submitted including:

- Diagram(s) of the farm's footprint(s) based on maximum feeding rate including the 1g, 5g and 10g C/m²/day contours;
- Diagram(s) of the farm's footprint(s) based on average feeding rate including the 1g, 5g and 10g C/m²/day contours;

- Carbon flux area summary table;
- Site information summary table; and
- All results and data products.

Wild Fish and Fish Habitat Surveys

Wild fish and fish habitat surveys to quantify fish species presence/usage of the area and assess the fish habitat present in order to determine the risk of potential impacts are required for all new site applications. For all amendments, historic data will be accepted if it was collected meeting the standards below and is from the area where new benthic impact is expected; otherwise new data must be collected. If you are unsure if your amendment requires new fish habitat surveys, please contact DFO.

Nearshore Benthic Survey

Information to be collected and reported:

- Video data of the lake bottom in the area along the foreshore of the tenure;
- Survey should include at least one transect parallel to shore (a zigzag pattern is recommended);
- Habitat and substrate type(s), and significant changes noted (include depths);
- Transect location(s);
- Presence of macrofauna, macrophytes, and critical or sensitive habitats (see C4 for more information on critical and sensitive habitats); and
- Observations must be submitted including a species list table and features identified on a habitat map.

Reference Station Data

Reference station data for comparison to aquaculture sites must be collected for all new site applications, but is not required for amendments. The following should be considered when choosing reference stations:

- They should be located between 0.5 and 2.0 km away from the proposed farm site;
- They should not be exposed to BOD matter deposition from any farms sites or other anthropogenic sources;
- The depth should be within +/- 25m of the proposed farm sampling stations; and
- The topography, lake bottom type and sediment grain size should be similar to the proposed site.

If any of the above cannot be met, a written explanation must be provided and the next best alternative site(s) assessed.

Sediment Sampling

Sediment sampling to assess the baseline conditions of the lake bottom is required for all new site applications. For amendments that propose new containment arrays or new array locations, historic or operational monitoring will be accepted if it was collected meeting the standards below and is from appropriate locations; otherwise new data must be collected. Information to be collected and reported:

- Sediment sampling from the lake bottom at 0m and 30m from the proposed location(s) of the containment structure array(s) paralleling the nearest shoreline;
- Sediment sampling at two reference stations for new sites;
- Location (latitude/longitude using dGPS), depth, date and time of sampling;
- Physical parameters of sediment including colour, odour, texture, gas bubbles, flocculent organic matter, estimation of surface coverage of bacterial mats, fish feed, fish feces, presence of macrofauna and macrophytes, terrigenous material and farm litter;
- Chemical parameters of sediment including free sulfides, redox potential, total volatile solids, sediment grain size, and a total metals package;
- A photo of each sediment sample;
- For new sites, biological samples in which biota is taxonomically identified to at least the level of family with all major taxa identified to the level of species, and counted
- Observations must be submitted including sampled and observed data and sampling locations identified on a map.

Sensitive and Critical Habitat Survey(s) or Data

Additional surveys are required for all new sites and some amendments as described below. Other surveys are only required if critical or sensitive habitats are identified in the wild fish and fish habitat surveys. If not already described in the following sections, the information to be collected and reported includes:

- A map showing location(s) of the critical or sensitive habitat(s);
- Transect locations and a depth profile for any transect assessed;
- Video data; and
- Observations must be summarized in a species list table and features identified on a habitat map.

Stream Surveys

An inventory of streams/rivers within 5 km of the proposed site to determine wild salmonid usage must occur for all new site applications. For amendments that propose an increase to production or the addition of new species, historic data will be accepted if it was collected meeting the standards below although historic numbers should be updated if new data is available; otherwise new surveys are required.

Information to be collected and reported:

- The names and locations of all streams within 5 km of the site and a map showing their location; and
- Existing information regarding salmonid species presence and usage for each stream; or
- Where no existing information exists, a survey of the stream must occur to identify salmonid species present, estimate population numbers, and locate salmonid habitat.

MANAGEMENT PLANS

For examples of management plans and reporting templates, refer to the appendices in the [Freshwater/Land-based Conditions of Licence](#) available on the DFO website.

Health Management Plan (HMP)

Industry submitted Health Management Plans (HMPs) in their draft form are initially considered proprietary information and will not be released as part of the referral process. If an application is approved, the finalized HMP forms an appendix of the Freshwater/Land-based Aquaculture Licence and becomes publicly available.

New sites require complete HMPs and associated Standard Operating Procedures (SOPs) which contain detailed operational elements used to implement the HMP. Amendments that have new species, additional risk elements, or a proposed coordinated health management approach linked to other farms require updated SOPs.

A fish health management plan with the operation's proprietary standard operating procedures (SOPs) is required for applications for these species and/or culture methods:

• Finfish destined for marine grow-out	• Signal crayfish
• Lake net pen	• White sturgeon
• Arctic char	• Whiteleg shrimp
• Sablefish	

Templates for HMP's and SOP's are also available by contacting:
freshwater.aquaculture@dfo-mpo.gc.ca

- Applicants planning to conduct aquaculture activities with the species and/or culture methods listed above shall submit:
- required for applications for these species and/or culture methods:
 - a) Part One: An HMP addressing the principles, concepts and required elements of fish health management; and

- b) Part Two: HMP-SOPs may be facility-specific or practiced at all Licence Holder's facilities. These SOPs are considered 'evergreen' documents that will change regularly and they are considered proprietary.
- c) Single licence holders submit one HMP and one set of HMP-SOPs;
- d) Multiple licence holders may submit one HMP, identifying each of the licences to which the HMP applies; and, if necessary, identifying which HMP-SOPs are facility-specific (i.e. applicable to individual licences).

Escape Prevention and Response Plan

- Applicants shall submit to the Department an Escape Prevention and Response Plan. The plan must contain all of the following elements: equipment design to prevent escapes, net and infrastructure inspection, maintenance and record keeping, and the response to a fish escape or suspected escape.

PART IV – INFORMATION FOR TRANSPORT CANADA

SITING CONSIDERATIONS

Upon request, clients may be requested to provide additional information; a review pursuant to the *Navigation Protection Act* (NPA) may require additional information that is specific to Transport Canada's mandate for marine/lake navigation. The NPA does not apply to land based projects.

ADDITIONAL TRANSPORT CANADA INFORMATION

Waterway Name

Pursuant to the schedule of the Navigation Protection Act (NPA), certain waterways (Lakes, streams, rivers) are applicable to the act. Please see the [NPA schedule](#) to determine if your project is within one of those waterways.

The name of the water where the planned work is located *must* be included on the application. Both the official name and any local names should be noted. If the waterway has a very common name, e.g. Fish Lake, or any name which might be confused for another location, please add an identifier, e.g. "23 km west of Hwy 2 at 8th Line Rd", or include clearly written directions to the site as one of your supporting documents.

Width (m) and Depth Range (m)

The width and depth can be roughly determined by using Google Earth, Topo Maps, [Canadian Hydrographic Service](#) navigational charts (if the subject waterway is charted) or actual measurements. In charted waterways, these measurements should refer to a chart datum (the measured elevation bench mark noted in the legend of the chart) and on uncharted waterways it should reference the normal or ordinary water level.

Nearest Community

If the proposed work is in an area that has not been surveyed, indicate the nearest community and provide the distance from the nearest kilometre post, if applicable.

New, Existing or Modification of an Existing Work

New: If your work is a new proposal that has not yet been constructed or received an authorization under the *Navigation Protection Act* (NPA).

Existing: If the work has been constructed but does not have an NPA authorization.

Modification: If the work is for the rebuild, repair or alteration of work that has an NPA authorization.

Photographs

Photographs can be very useful in determining the navigability of the waterway and the potential impacts of the works. If taking pictures of a waterway to assist the Navigation Protection Program (NPP) in making a determination, please include photographs that are representative of the waterway.