

BURRARD INLET ENVIRONMENTAL ACTION PROGRAM
SHORELINE DEVELOPMENT (FORESHORE FILL) GUIDELINES
(Revised September 06, 2005)

A number of agencies having jurisdiction over, or an interest in, the management of Burrard Inlet including its seabed, foreshore and adjacent upland has agreed to act together within the Burrard Inlet Environmental Action Program (BIEAP) to make collective management decisions with respect to Burrard Inlet. These agencies include the Vancouver Port Authority (VPA), Fisheries and Oceans Canada (DFO), Environment Canada (EC), BC Ministry of Environment (MOE) and the Greater Vancouver Regional District (GVRD).

Shoreline Development Environmental Review

In regard to developments potentially affecting the waterfront, BIEAP input is provided through the coordinated project review process of the Burrard Environmental Review Committee (BERC), which involves those agencies with mandates or legislation of an environmental nature. BERC includes representatives from VPA, BC MOE, EC, DFO and Transport Canada.

In reviewing projects as members of BERC, the resource agencies have consistently applied the following guiding principles with respect to shoreline development in Burrard Inlet:

1. The shoreline, foreshore, and nearshore areas of Burrard Inlet are important habitat for fish and wildlife. Development activities involving these areas, including upland development, filling, dredging, and shoreline alteration, may have significant adverse impacts on fish and wildlife resources. Filling is of particular concern as it involves loss of shoreline, seabed, and water body living space. Filling can also result in the loss of marine riparian vegetation (vegetated areas primarily within 15 metres landward of the higher high water mark). Marine riparian vegetation provides fish habitat benefits related to water quality, soil slope stability, nutrient input, intertidal temperature regulation, and fish prey production.
2. It is recognized that certain facilities or operations necessary for shipping, berthing, and associated activities, are essential components of the federal, provincial, and local municipal economies. Accordingly, works involving significant impact to Burrard Inlet, including limited placement of fill into Burrard Inlet waters, may be considered if it can be demonstrated that they are necessary to support facilities or operations that are functionally connected to these port-related activities. In these instances, filling will be considered if it can be demonstrated that best efforts have been made to minimize the adverse environmental impacts associated with the filling through all reasonable measures including consideration of alternate location and alternate design, reduction of fill area to the greatest extent possible, and providing appropriate compensation for losses of fish and wildlife habitat.
3. For developments or activities not functionally connected to port-related activities such as berthing, shipping, etc., filling of marine waters is generally not deemed essential from a public perspective and is discouraged. In these instances, proponents are urged to consider modifications to the design and /or location of their proposed facilities to mitigate environmental impacts by minimizing or eliminating the need for fill. However, from time to time projects do arise which are not port related but for which it can be demonstrated that fill is necessary from a functional or engineering standpoint, and best efforts have been made to minimize both the fill and the associated adverse environmental impacts. In such cases,

limited filling of portions of Burrard Inlet may be considered, if the fill is to be accompanied by the excavation ('cut') of upland to create a replacement body of water, equivalent to that lost to filling, i.e., a cut and fill balance, and appropriate compensation for the loss of fish and wildlife habitat is provided.

These guiding principles should be considered by all parties proposing to undertake projects which may involve works within or adjacent to the waters and foreshore of Burrard Inlet. It is important to identify, at the earliest stage possible, port and non-port related activities associated with the project and to determine the locations, functional interrelationships, and areal extent of each, as they relate to any proposed filling of Burrard Inlet. The amount of shoreline alteration or new water coverage to which consideration will be given by the BERC member agencies will depend on the ability of the proponent to design in accordance with the guiding principles stated above.

BIEAP member agencies remain available for further discussion of these principles and their implications to the location and technical design of any proposed development. However to assist proponents with their consideration of these principles with respect to conceptual designs, the following guidelines are presented:

Use of Fill

- Marine Fill should only be considered for specific elements of a project that can be demonstrated to be functionally connected to port-related facilities or operations. Fill may also be considered where necessary to ensure appropriate habitat compensation. For other aspects of a project, proponents should consider upland structures located landward of the higher high water mark, or pile supported or floating structures wherever possible.
- Marine Fill proposed for aspects of the project not functionally port-related, if allowed, will likely be subject to the creation of a replacement body of water through excavation of an equivalent area of upland, i.e., a cut and fill balance must be maintained in relation to the water body
- In keeping with the foregoing point, alternatives to filling should be considered for public open spaces, including park or public walkway features. In this regard, municipalities may have significant requirements for park and public open space in connection with shoreline developments. Any fill for these purposes, if allowed, will likely be subject to an equivalent excavation of upland to ensure a cut and fill balance.
- There should not be any reduction in the overall length of the shoreline. Where fill is proposed, it should be designed such that there will be a significant increase in the shoreline length in order to compensate for loss of sea bed and water column associated with the filling.
- New shoreline should be designed to provide optimum conditions for colonization by local marine organisms and the establishment and growth of healthy and diverse marine communities. To this end, consideration should be given to factors such as slope stability and grade, suitability of materials to support marine growth, establishment of marine riparian vegetation, exposure to sunlight and shading, tidal elevation.

- Shoreline created as compensation for lost habitat should be designed for maximum production and habitat value. Features and areas designed specifically as optimum habitat should be incorporated into the shoreline wherever possible. Features should include gentle slopes (minimum 2:1 horizontal:vertical) faced with suitable materials, benches or berms incorporated into the shoreline at appropriate tidal elevations and incorporation of marine riparian vegetation. Alternative designs which may offer creative solutions to incorporating habitat features into the shoreline should be pursued. Solid vertical faces (i.e. caissons, bulkheads, etc.) will not be suitable for habitat compensation.
- Any proposal for fill or other shoreline works submitted for BERC review will also require an application pursuant to the *Navigable Waters Protection Act (NWPA)*. If additional information is required to complete a navigational impact assessment, the relevant Transport Canada area officer may contact the proponent directly.

Assessing Aquatic Habitat

Once the guiding principles have been applied to project design, consideration can be given to site specific measures and design details that will further mitigate impacts on habitat, and, where applicable, appropriate measures to compensate for habitat losses. To allow for productive discussion of these and related matters, and to enable BERC to properly assess the potential environmental impacts of a proposed development on a given site, it will be necessary for proponents to carry out detailed investigations, including field surveys, of current biological and physical features of development sites. The level of detail required will depend to a significant degree upon the scale and complexity of the project and the extent of pre-existing knowledge of the project area from an environmental standpoint. Nonetheless, this information should be provided to BERC in advance of discussion of detailed project design.

Biophysical surveys should be conducted by individuals suitably qualified in aquatic biology with a good understanding of marine biology and ecology, and demonstrated local experience in surveys of this kind. Knowledge of local fish and wildlife resources and their habitat requirements, and the concerns of BERC member agencies, is essential. When planning and conducting biophysical surveys, seasonal variation in community composition should be taken into account, and consideration should be given to conducting field surveys during periods of maximum production and diversity. Documentation of local biophysical features, including the findings of field surveys should include maps or drawings of sufficient detail and in an appropriate scale to allow comparison with drawings of proposed upland development, shoreline alterations or in-water works, including dredging.

If development impacts cannot be fully mitigated with respect to fish and wildlife issues, habitat compensation may be required. In the event that the final design involves the harmful alteration of fish habitat, proponents will be required to obtain an authorization under Section 35(2) of the *Fisheries Act*. This authorization will identify in detail all aspects of the project pertaining to habitat management including, but not limited to, the proponent's obligations with respect to implementation of measures to mitigate adverse impacts to fish and fish habitat, fish habitat compensation to be provided, environmental monitoring, and fish habitat compensation maintenance and remediation requirements. It should be apparent from the above discussion that

project approvals are greatly simplified by the avoidance of impacts upon productive habitat through appropriate project design and location.

Assessing Terrestrial and Upland Habitat

The impact of the project on migratory bird populations specifically those which currently use the site or which utilize areas adjacent to the site should be assessed

The impact of the project on habitat associated with significant adjacent shoreline features such as marshes, stream estuaries, riparian vegetation, cobble beaches, recreational areas, etc. should also be assessed. For example, the effects of the project on hydrology and water quality should be included where relevant.

Other Considerations

The potential of the project to involve disturbance of contaminated soils or sediments on or adjacent to the Burrard Inlet shoreline and consideration of options to appropriately manage these materials should be evaluated.

The potential of the project to adversely affect water quality in Burrard Inlet through ground water, surface runoff, or effluent during both construction and operational phases should also be considered.

Project Review and the Canadian Environmental Assessment Act

It should also be noted that the specifics of each development, and how they apply to federal agencies, may trigger a formal environmental assessment under the *Canadian Environmental Assessment Act* (CEAA). The following *triggers* on the CEAA “law list” may require the responsible authority to have an Environmental Assessment Environmental Assessment conducted of the proposed project:

- Section 35(2) of the *Fisheries Act* - DFO has CEAA responsibilities when issuing an Authorization pursuant to Section 35(2) of the Fisheries Act .
- Paragraph 5.(i)(a) of the *Navigable Waters Protection Act* - Transport Canada would be required to conduct a CEAA environmental assessment before issuing an approval pursuant to paragraph 5.i)(a) of the Navigable Waters Protection Act.

Every environmental assessment conducted under CEAA must include consideration and conservation of all species on Schedule 1 of the *Species At Risk Act* (SARA) and their critical habitat. SARA makes it an offence to kill, harass, capture, take, possess, collect, buy, sell, trade or destroy or damage the residence, for example the nest or den, of species at risk protected by SARA. Protection of critical habitat identified through the recovery planning process is also required.

Public Consultation

In the case of major projects giving rise to significant public interest, BERC will also wish to be satisfied that appropriate public consultation occurs, although it will not be responsible for this aspect of the process.

It should also be noted that all applications are available to the public on the BIEAP website. Any documents used in the review of the project are also publicly accessible at the BIEAP office.

BIEAP Application

An application for coordinated environmental review is available at www.bieap-frempp.org. Further information on the environmental review process and a reference library is also available at the web-site. A pre-application meeting with the Environmental Review Committee is also available to assist in developing an appropriate application. A pre-application meeting is encouraged for larger projects.