



ENVIRONMENTAL REVIEW
OF PROPOSED PORT DEVELOPMENT
PRINCE RUPERT, B.C.

prepared for
PROVINCE OF BRITISH COLUMBIA

by
HOWARD PAISH & ASSOCIATES LTD.
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Fairview site.



Ridley site.

BACKGROUND

Since 1965 Prince Rupert has been looking towards expansion of its harbour facilities. A literature survey shows that in that year C.B.A. Engineering proposed the construction of a general cargo terminal at the Drydock site and a bulk cargo terminal at Ridley Island. With the establishment of a National Harbour status for Prince Rupert in 1972, Wright Engineers Limited was retained to investigate the feasibility of further port development within the jurisdictional boundaries of the National Harbours Board at Prince Rupert. This report suggested possible port locations at:¹

1. The Drydock Site
2. Fairview
3. Ridley Island
4. Flora Bank - Kitson Island

and has formed the basis for subsequent environmental studies by the Department of Environment and its consultant, F.F. Slaney and Co. Ltd.,

The reports referred to thus far are entitled:

C.B.A. Engineering Ltd., Sept. 1969,
"Feasibility Report of the Ridley Island Bulk Terminal"
for the City of Prince Rupert Port Development
Commission,

Wright Engineers Limited, Aug. 1972,
"Port Development Prince Rupert", Project 694
for National Harbours Board,

¹ See Map 1 in envelope on back cover.

Background (cont'd.)

Department of Environment, Fisheries Service,
Northern Operations Branch, May 1973,
"A Biological Assessment of Fish Utilization of the
Skeena River Estuary, With Special Reference to Port
Development in Prince Rupert" - Draft report,

F.F. Slaney & Company Limited, April 1973,
"Preliminary Environmental Effect Assessment,
Superport Development, Prince Rupert Region",
Volume 1, Summary, Conclusions, and Recommendations,
and Draft Report for Department of Environment, Canada.

In our assessment of the environmental studies done to date
(the Department of Environment and Slaney reports), we have taken into
consideration the earlier engineering reports, the recommendations of
which have been used as the basis for the environmental assessments, as
well as our own familiarization from a brief on-site visit to the Prince
Rupert area on May 29 and 30, 1973.

GENERAL CONSIDERATIONS OF ENVIRONMENTAL STUDIES

The area investigated for potential dock sites by Wright Engineers was limited to the waterfront from the north end of Prince Rupert to the estuary of the Skeena River, and site selection was made on the basis of physiographic characteristics. The Drydock and Fairview sites are within the City of Prince Rupert, and all four are in the area of jurisdiction of the National Harbours Board. The Drydock and Fairview sites were reviewed for general cargo and some bulk handling, and the Ridley and Flora Bank sites were reviewed as bulk terminals.

We find this traditional approach to development location to be a poor basis for sound environmental assessments. We point out that environmental considerations should have played a significant role in the early site selection, and from this, a more complete costing of alternative sites could have been attained. As it now stands, with sites determined from purely physical, economic, and land ownership bases, the environmental considerations are left as secondary. While it is true that the Wright Engineers report brought out the high risk to the environment of development on the Flora Bank - Kitson Island site, it failed to place adequate and early enough emphasis on the environmental hazards of development anywhere near the Skeena estuary. We do not feel that alternate port sites were considered with proper thoroughness, and

General Considerations of Environmental Studies (cont'd.)

it is our opinion that this engineering report and its recommendations form a poor basis for an adequate environmental assessment of the port needs for Prince Rupert.

The environmental studies done by the Department of Environment and F.F. Slaney & Company, based on the Wright Engineers recommended port sites, have generally agreed that of the two recommended bulk handling sites, Ridley Island would offer a lower environmental threat than the Flora Bank - Kitson Island site. The Department of Environment report concludes:

"... the effects of construction of such facilities at Ridley Island would not be of biological significance insofar as fisheries resource maintenance is concerned."

This conclusion was shared by the Slaney report, with both groups reasoning largely from the point of view of low potential of the area. While we certainly agree that the Ridley site poses a smaller threat to the Skeena estuary than does the Flora Bank - Kitson Island site, we do not accept the premise that these are the only two alternatives. Also, we do not agree that the effects at Ridley would be of no biological significance for fisheries, and do not accept both reports' apparent de-emphasis of the Ridley site's potential from environmental and ecological points of view.

SPECIFIC CONSIDERATIONS OF ENVIRONMENTAL STUDIES

1. We are in general agreement with both the Department of Environment and Slaney reports regarding the high ecological and economic value of the Skeena River estuary, particularly the Flora Bank, De Horsey Bank, and Inverness Passage areas. We agree with both reports' recommendation that because of these values, no port development take place on the Flora Bank - Kitson Island site.

The Skeena River system has an enormous capacity for producing fish, particularly salmon, which are of economic significance to not only Prince Rupert, but the whole of the Province. Of great importance is the ability of this river, with proper protection and maintenance, to continue to produce these fish for an indefinite period - much longer than the lifetime of any port facility.

The Department of Environment has, over the past few years, invested something in the order of \$10 million in the Skeena system to increase fish production. There appears as well to be a good chance for a major salmon hatchery located on the Skeena. With this degree of investment, it is clear that some sort of rational planning must be instituted. Protection must include the estuary, as it provides a vital rearing and feeding area for young salmon, particularly on Flora and De Horsey banks and in Inverness Passage (Department of Environment measurements).

Specific Considerations of Environmental Studies (cont'd.)

In this context, it is our opinion that the Ridley Island - Porpoise Harbour area be considered a part of the Skeena River estuary complex.

2. A more thorough investigation of possible port sites, had it included environmental factors, may not have been restricted in area to those under present National Harbours Board jurisdiction. If environmental studies are to be used to steer developments towards sites of least environmental effect, then it is clear that they must take a "macroscopic" rather than "microscopic" view of the problem, particularly at the early feasibility stage. Restricting environmental studies to areas predetermined by engineering and economic considerations is the "microscopic" approach.

In the case of Prince Rupert, it appears to us that the terms of reference given for the environmental studies were too restrictive and possibly too late. Clearly, for an environmentally highly sensitive area such as the Skeena estuary, and indeed all estuaries, development should proceed in sequence, beginning with a demonstrated need for development followed by a careful environmental assessment. This, along with sound regional and local planning, would establish development locations with the least environmental effect and would provide the environmental cost of development at any location in the total region.

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Specific Considerations of Environmental Studies (cont'd.)

environmental study would have recommended on strictly environmental grounds a port location as far as possible from the Skeena estuary, with a re-examination of all sites within the original terms of reference as well as an examination of areas outside the Prince Rupert waterfront area, or National Harbours Board jurisdiction. Land ownership should not be the sole criterion in defining areas for study. If the true environmental costs were used in a general re-assessment of all potential port sites in the Prince Rupert area, it is highly likely that those sites removed from the estuary would appear more feasible than when first assessed.

3. The Slaney report describes development at the Ridley site to be:

"... in accordance with present and projected land use strategy of the Prince Rupert region ...".

We disagree with this land use strategy which directs heavy industrial activity southwards, to southern Kaien Island, Ridley Island, Port Edward, and generally towards the Skeena estuary. We feel there has been insufficient study to justify this direction of development and to quantify the effects that any development would have on the estuary. We point out that the Ridley Island site is only a little over two miles from Flora Bank - the area considered by the Department of Environment

Specific Considerations of Environmental Studies (cont'd.)

to be of greatest fisheries significance in the estuary. We cannot accept, therefore, on the basis of information at hand, the claim in the Slaney report that:

"The site's aquatic environment is not critical to the maintenance of the Skeena River Estuary's viability".

In determining the environmental costs of such development, it is extremely important to consider the environmental threat in proper perspective.

Industrial development towards the south would appear to conflict with the probable direction of future recreational activity. (Recreational needs or uses were not dealt with in either the Department of Environment or Slaney reports.) At present, most of the sport fishery, crabbing, and other water-related recreation is done in the area south of Fairview to Smith Island, in the Skeena estuary. This area probably holds the Prince Rupert region's best recreational potential, offering a diversity of beach and gentle-sloping upland types - in contrast to the steeper-sloping rocky shoreline found further to the north.

4. Both the Department of Environment and Slaney reports suggest a low biological potential for the Ridley Island site due to the presence of the Colcel effluent discharge pipe at the site. It was suggested on this basis that a port location at the site would therefore have

Specific Considerations of Environmental Studies (cont'd.)

little significant effect. While we agree that at present the immediate area is nearly biologically barren, we do not view this as a necessarily permanent condition. Reported future changes in mill operations and changes in effluent characteristics to meet Pollution Control permit standards prompt a re-assessment of the area in terms of its potential. We found the Ridley location to offer good ecological diversity, including a sand beach (one of the few in the entire Prince Rupert region), schist formations of particular interest and attraction, a tidal bay, and an attractive gentle-sloping upland supporting a variety of wildlife including deer, bear, and eagles. In general, the north end of Ridley Island offers an attractive area for potential recreational opportunity in the Prince Rupert region; however, the realization of this potential is contingent upon the elimination of the present mill discharge into the area.

5. Of possible considerable importance from an environmental point of view is the origin of fill material and apron riprap for port development at any of the sites. Sources of these materials were not located in any of the studies reviewed; however, some mention was made in the engineering studies of Skeena River estuary gravels and sands as a possible source of fill. Particular attention should be paid to this problem and, if necessary, areas of low sensitivity should be chosen for these sites.

Specific Considerations of Environmental Studies (cont'd.)

It appears probable that local materials, at least at the Fairview site, are unsuitable for apron riprap. Alternative quarry sites should be chosen so as to avoid environmentally sensitive areas.

6. Disposal of organic overburden from any potential port site may present a problem. This material is generally unsuitable for fill material and environmentally suitable disposal sites would have to be found.

CONCLUSIONS AND RECOMMENDATIONS

In areas of known high ecological value, such as the Skeena River estuary, environmental studies should be an integral part of initial feasibility studies of any proposed development. This ensures maximum consideration of all factors, including environmental costs, in determining relative costs of alternate sites. Without an initial broad-based overview assessment, not even relative environmental costs can be determined.

The environmental studies carried out by the Department of Environment and its consultant, F.F. Slaney & Company Ltd., were too late and restrictive in scope to provide anything more than environmental descriptions of three alternate sites - Fairview, Ridley Island, and Flora Bank - Kitson Island.

While we are in general agreement with these descriptions, we feel there is inadequate information to justify any development close to the Skeena estuary. Consequently we do not agree with both reports' conclusion that development at the Ridley site would pose no significant threat to estuary viability.

We recommend therefore a re-assessment of all potential port sites with environmental considerations playing an integral part. We suggest that the capability of the existing waterfront area, including the Drydock site, be reviewed considering the possibility of incorporating

Conclusions and Recommendations (cont'd.)

all future general cargo handling into this area. If this appears feasible, the Fairview site may become more attractive as a potential bulk terminal. It should be mentioned at this point, that the Fairview site is soon to be developed as a general cargo dock, with contracts for initial site preparation to be let in the immediate future.

Examination of a map shows other possible sites for port location. We mention these as ideas only, with no environmental, engineering or economic assessments having yet been made. The suggested sites are solely for illustration of regional perspective; none, in fact, after detailed analysis, may prove feasible. These locations include:²

1. Digby Island, where flat backup land is available, but bridging would be necessary.
2. Tsimpsean Peninsula to the west of Prince Rupert Harbour, again where flat backup land is available, but where extension of rail services would be necessary; possibly via the east side of Kaien Island, across Fern Passage to Pepin Point where a crossing would provide access to the west side of Prince Rupert Harbour. It is understood that a transportation link to Port Simpson has been proposed. This access

² See Map 2 in envelope on back cover.

Conclusions and Recommendations (cont'd.)

corridor may facilitate a rail link to Pepin Point. Depths throughout Prince Rupert Harbour appear adequate for ship passage and port location.

3. The south end of Work Channel, about 14 miles east of Prince Rupert. This would require a rail link from the mainline via Lachmach or McNeil rivers, a distance of seven or eight miles.

We bring these possibilities out in order to indicate the kind of regional perspective we feel should have been adopted in the original site considerations, and which can yet be introduced as part of a more comprehensive regional port site evaluation.