THE CHALLENGE OF THE GORGE

SMITH

AN OPEN LETTER TO THE PEOPLE OF GREATER VICTORIA

During the past few weeks there has been a spontaneous and virtually unanimous expression of public opinion in favour of preserving the Gorge Waterway for recreation. This public outcry was prompted by the threat of further pollution which would have almost certainly resulted in the Gorge becoming nothing but a weed-clogged and smelly drainage ditch.

Now that we have been assured that a solution to the problem of further pollution is forthcoming, it becomes a community responsibility to clean up the Gorge completely and develop it for recreational use.

We prepared this brief a few months ago for presentation to the committee studying proposals for commemorating the Canadian Centenary in this area. It is being given wider distribution at this time because there is an obvious interest and, we believe, a real desire throughout Greater Victoria to meet "the challenge of the Gorge."

If the Centennial Grant can be made available for the first two projects on this waterway - wonderful! These projects would be

1. A removable or hinged dam at Gorge Bridge - the "Centennial Key" to the future of the Portage Inlet and Gorge Waterway and

2. A beach development at the Trans-Canada Highway, a "Centennial Gateway" to our city.

If the Centennial Grant is not available, then another way should be found to proceed with this work. To this end you are urged to use your influence and ideas. Should you wish to give your active support to the Portage Inlet and Gorge Waterway development, or, if you desire more information (perhaps a speaker for one of your meetings) please let us hear from you.

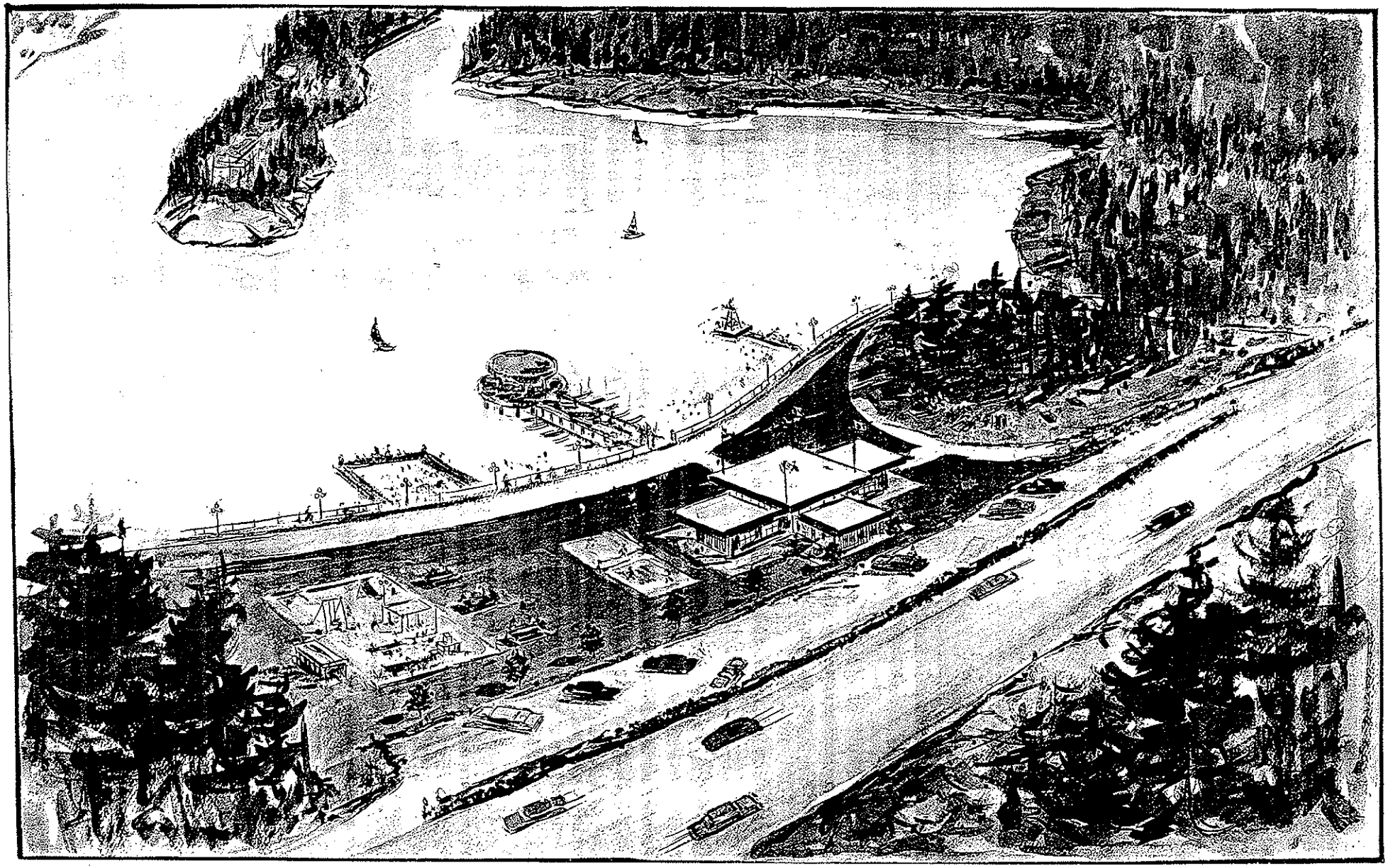
Yours truly,

R. M. Faulks

R. M. Faulks
196 Werra Road
479 - 5577

L. Smith

L. Smith
137 Kingham Place
479 - 5610



THE PROPOSAL

1. The construction of a hinged or removable dam at Gorge narrows with suitable platforms for pump operation and attractive walks and viewpoints.

   Purpose of the dam

   A. To control water levels in the Gorge and Portage Inlet for short periods to facilitate dredging and
   B. To permit creation and improvement of beaches, promenades, parking areas, ramps, docks and any other facilities the community may wish, according to a comprehensive overall plan for Gorge waterway improvement and
   C. To restore the unique reversible falls.

2. Cost of this proposal - It is suggested that the dam (possibly $25,000) and initial beach improvement be paid for by Centennial grant. Subsequent improvements to be paid for out of Capital Improvement District grants, by interested groups, and by property owners.

3. Administration - It is suggested that some body such as the Capital Improvement District Commission be charged with guardianship of the overall plan for improvement of the Gorge and that no work either public or private be undertaken except by permit from such body thus ensuring that no changes would be made in the Gorge which might conflict with the overall improvement scheme.

DESCRIPTION

The Gorge and Portage Inlet are the upper reaches of Victoria Harbour. The waters wind like a river through many miles of residential area touching in the process the City of Victoria, the Municipalities of Saanich and Esquimalt and the Unorganized Area of View Royal. Much of the shoreline is privately owned but about two miles remain for public use and several large undeveloped waterfront properties could be acquired. (See attached map)

In spite of the urbanization of the area the Gorge remains picturesque and natural in appearance. Native trees and grassy slopes line its banks. Its bays are sheltered and secluded. There is still an abundance of waterfowl. Federal authorities have declared it a bird sanctuary. Fishermen and small boys delight in the annual herring and cut-throat trout runs. Occasionally sea otters and raccoons are seen on the waterway.

Two freshwater streams, the Colquitz and Craigflower, empty into Portage Inlet from Swan, Beaver and Thetis Lakes. Both these streams are spawning grounds for cohoe salmon.

Outstanding feature of the Gorge is a reversible waterfall at Tillicum where the waterway narrows to thirty-five feet. (This reversible fall, partially destroyed on June 13, 1960, by blasting of submerged rock, could be restored by the plan now being proposed).

These are the features that make the Gorge waterway attractive. There are other features that make it unattractive.

The bottom of the Gorge is covered with a black slimy mud that varies in depth from several inches to several feet in the areas which would be developed for recreational use. In deeper water this mud supports a heavy growth of eel grass which at low tide obstructs the passage of small boats and canoes. At certain times of the year heavy mats of slimy algae grow in the creeks and shallow areas and float out into the waterway interfering further with recreation.

At low tide vast mud flats are exposed and a strong odour of decaying algae and marine life pervades the area.

Nuisance from the mud flats is only apparent in the hot summer weather. During the winter low tides occur at night, there is a minimum of algae and, without the sun, the marine life does not decay.

In assessing the Gorge reference must be made to sewage pollution. A float test engineered by Mr. R. Bowering then Chief Provincial Public Health Engineer and conducted in 1958 by the Victoria/Esquimalt Health Department proved beyond question that the polluted waters of Victoria Harbour do not reach the Gorge and Portage Inlet. Bacteriological tests since that time show that the waters are of excellent quality in the summer months. This quality deteriorates and marked turbidity develops with the onset of the rainy season, but during this time high bacteria counts are not a hazard to swimmers and exposed mud flats are not a nuisance.

The only unsatisfactory feature of the Gorge that causes community concern is the shallowness of the water with resultant exposure of mud, weeds and algae in the summer months.

HISTORY

First reference to the Gorge in the Provincial archies dates back to a period still vivid in the memory of many Victorians. The period of the first Gorge Park with its swimming, canoeing, a floating tea shop, a picturesque catwalk under Tillicum Bridge and the Japanese Tea Gardens. This was a period during which the Gorge was such an obvious asset that the community was prepared to overlook the fact that except for the small beach at the park the Gorge was in fact pretty well unusable for recreation because of its muddy bottom.

From its peak of popularity the Gorge began to decline. The population of Victoria and Saanich was growing beyond the sewered area. Faulty septic tank installations in increasing numbers permitted seepage to reach the Gorge. The smell of sewage effluent mingled with the smell of the mud flats. Eventually people stayed away from the Gorge and the facilities deteriorated. The War came and the end of the Japanese Gardens. The sand on the swimming beach was not renewed - the mud flat returned and the wooden walk under the bridge became dangerous and

ultimately disappeared. The Gorge died as so many waterways on this and other continents have done, a victim of careless sewage disposal.

There followed several attempts to resurrect the Gorge. Notable among these was the proposal to construct a canal from Thetis Cove in Esquimalt Harbour with locks at both the canal and Selkirk Waters. Purpose of this proposal was to provide a constant flushing action to push the contaminated water from the Gorge and replace it with water from Esquimalt Harbour. This proposal was given very serious study and a comprehensive survey was made and an engineering report prepared in 1951, by the Water Rights Branch of the Provincial Department of Lands and Forests.

It was never acted upon presumably because of three major objections:

1. Cost - The initial cost was to be in the neighbourhood of $800,000 (1951 prices) and there would be a permanent annual maintenance cost for staff and machinery to operate the locks.
2. The water in Thetis Cove was polluted. Before this water could be used to flush the Gorge Esquimalt Harbour would have to be cleaned up.
3. The proposal would have interfered with one of the outstanding natural features of the Gorge - the reversible falls at Tillicum.

The first successful move to return the Gorge to active service came with the installation of sewers in Saanich in 1956 and the removal of much of the septic tank effluent. Sewer projects in Esquimalt followed and in 1958 the Gorge was again declared fit for swimming.

Almost immediately beach improvement commenced. The Kinsmen Club provided the money and Esquimalt Municipality the engineering skill to build the new Gorge Park and the public returned after many years to enjoy the only warm salt water in the Greater Victoria area.

But even as the Gorge was struggling to come back the old enemy too was returning. The population of the area was continuing to grow. Again building was being permitted beyond the sewered areas. Again septic tank effluent was creeping towards the Gorge. An apprehensive community turned to small treatment plants in preference to septic tanks which so often seemed to be faulty. But the discharge from the treatment plants also entered the water to nourish the weeds and algae and so limit the usefulness of the Gorge for recreation. The community was in doubt. Was it sensible to continue efforts to improve the Gorge if the water was to receive an ever growing flow of effluent? Why bother if the weeds were destined to win in the end?

To add to these doubts three questions have been raised in connection with the proposal to improve the perimeter of the Gorge with earth moving equipment. They are:

1. It is too late. Hasn't most of the Gorge been bought up and developed?
2. Would there be sufficient use of the Gorge to justify the expense of public development?
3. If deepening is indicated why not just dredge in the orthodox way?

Answers to these questions follow:

WHO OWNS THE GORGE?

It has been stated that the Gorge is gone--that too much of it is now privately owned to be worth bothering about.

This is not true. No one owns the Gorge.

Private individuals who own property around the Gorge own land to the high water mark only. The water, the sea floor under the water and the vitally important foreshore, (the land that is exposed at any but the highest tide), is owned by everyone.

When the tide is out, anyone is free to walk around the Gorge, just as one can now walk along any beach on the waterfront. At the moment this is not a practical thing to do because the foreshore is composed of a sticky, slimy mud. However, if this mud were removed and replaced with sand, as at Kinsmen Park, the foreshore would be as pleasant as any other sandy beach.

A few foreshore rights have been granted on the Gorge and Portage Inlet. During tenure of these rights the holder can exclude the public from the specified portion of the foreshore. Total frontage alienated in this manner is negligible.

The question of access to the foreshore and the water is not a problem. At present there are 41 public accesses, some over 1,000 feet long. It would be an easy and inexpensive engineering task to build up the most suitable of these access points with mud and clay, creating recreational areas, parking lots and necessary facilities.

In addition to these public accesses there are many properties not yet built on and so presumably available for public use if money was made available for land acquisition. Among these properties are some with extensive enough acreage for waterfront park development.

Any islands created with dredged material, for public use, could be lineal or crescent shaped to provide maximum length of sandy beach.

It is unreasonable to suggest that the Gorge be left to the exclusive use of the few people who own land around it. Also, suggested schemes to hold water in the Gorge permanently to the high water level should be questioned because they would further cut off the foreshore.

WOULD THE GORGE BE USED?

The question has also been raised as to the need for Gorge development. It has been suggested that people wouldn't use the Gorge in sufficient numbers to justify the effort and expense of reclamation.

This of course is a matter for speculation. But, if the popularity of Kinsmen Park is any indication, then it can be prophesied that people from all over Greater Victoria would flock to the Gorge if clean, sandy beaches were created around its perimeter and the water deepened where needed.

On hot Sunday afternoons it is estimated that approximately two thousand people crowd into the Kinsmen Park. As many as five hundred persons have been counted in the water at one time. This even though many people in the area are still not aware of the fact that the Gorge has been re-opened for swimming.

Salt water has always been preferred by many swimmers. The Gorge is the only warm salt water in the entire area. The temperature of the Gorge water reaches 80°F—the same temperature as the Crystal Garden Swimming Pool. The Gorge is sheltered from the winds that detract so much from the enjoyment of salt water beaches around Victoria.

Lakes in the area are no longer as popular as they used to be. Increasing pollution problems and the increased growth of algae and the occasional reporting of swimmer's itch all tend to reduce the use of the lakes for swimming.

WHY NOT JUST DREDGE?

The need for a dam has been questioned on the grounds that the mud could be dredged from the Gorge with a suction dredge and the shoreline built up with the material recovered.

It is submitted that the construction of a dam would assist the dredging operation by retaining water in shallow areas so the dredge could operate continuously rather than just at high tide. Later the dam could be used to hold the water at the low tide level so beach construction could proceed.

Many private attempts at waterfront improvements have been made; the one obstacle that has proved to be almost insurmountable is the returning tide. If the proposed dam was constructed at Tillicum this private work could continue during the periods the dam was in place holding back the tide for periods of one or two weeks each year. (See attached report by Dr. D. V. Ellis, Biology Department, University of Victoria).

The value of private improvement efforts should not be underestimated. All urban areas benefit tremendously from the evening and weekend and holiday activities of the private property owner. It is this effort that cuts the grass and plants the flowers. In this area, private effort

is a significant supplement to the efforts of public parks departments to beautify the environment and earn for Victoria the title "City of Gardens."

This is the position now in 1965.

Again there is talk of flushing the Gorge with water from Esquimalt Harbour. This time the suggestion is a pipe line under the road and railway into which water would be pumped in sufficient quantity to change the entire Gorge Waters once a month. The opponents of this scheme feel that this proposal, like the canal scheme, would result in adding cold, polluted water to the warm, bacteriologically safe water of the Gorge.

The best proposal is that a serious large scale attempt be made to tackle the features of the Gorge that limit its usefulness:

1. The mud flats.
2. The algae and weeds.
3. The absence of adequate recreational facilities such as beaches, parking areas, and restrooms.

It has been demonstrated by the various private efforts around the Gorge and by the new Kinsmen Gorge Park that the mud can be removed and replaced by sand.

Since the algae grow in shallow waters much growth would be prevented by any deepening carried out. Weeds as well as mud would be removed by dredging.

This algae and weed control measure should be supplemented by rigid pollution control in the entire Gorge drainage basin. It is submitted that there is more likelihood that this will be done if Gorge improvement works are continued, and the public build up an investment in this recreational asset.

It is not proposed to set out here a detailed plan for the provision of facilities. However, it is suggested that such a plan be made and that nothing either private or public be permitted that would conflict with it.

An obvious place to build a park and sandy beach (with adequate parking) would be where the Trans-Canada Highway touches Portage Inlet. Mud and clay from the inlet could be used to build this area out into any shape and size desired. A peninsula could be made with sandy bays on either side useful for both swimming and small boat anchorage. Such a development would provide a "first impression" for tourists similar to the outstanding approach to the City of Penticton.

Similar peninsulas could be created at other road endings around the waterway.

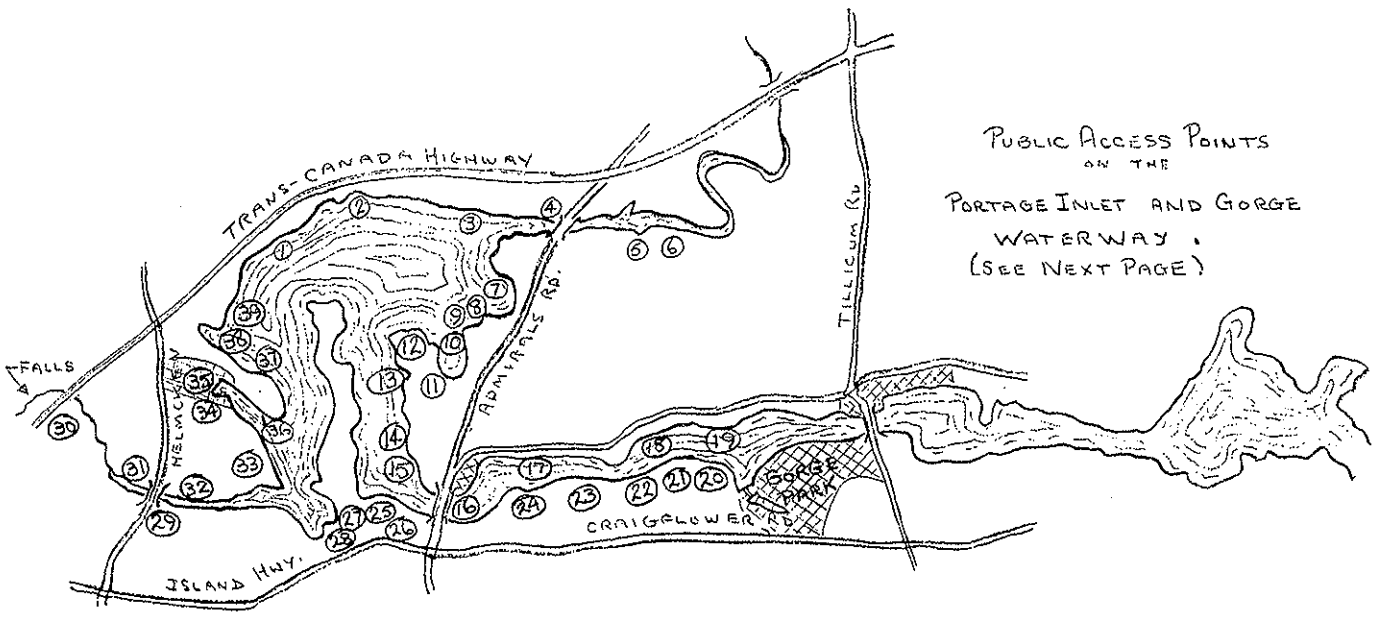
Promenades could be built up to link some of the road endings, providing a park-like perimeter.

Islands could be created to add to the enjoyment of both swimming and canoeing and as safe nesting grounds for waterfowl which now fall prey to dogs, cats and raccoons.

Boat ramps and docks could be constructed. Deep holes could be dredged for skin divers. Underwater gardens and aquariums could be created.

It is presumed that the dam would normally lie on the bottom of the sea and the water would flow back and forth under the Gorge bridge as it does now. The base for the dam could be set at the height of the original rock so that the reversible falls could be restored. A system of plastic or rubber rollers could be incorporated in the base to prevent damage to boats attempting passage through the narrows at the wrong tide. The dam would be closed each year so that the improvement work could progress. This could become an exciting annual event to challenge the ingenuity and industry of many interested people in the Greater Victoria area. It is the kind of programme that could grow in enthusiasm year after year using more and more of the community's earth moving equipment and with an ever increasing number of citizens taking part.

The history of this waterway is not one of which Greater Victoria can be proud. The future could be much brighter. It is submitted that Canada's Centenary could be marked in part in this area by initiating a logical, "step by step" plan for the Gorge-Portage Inlet area, thus ensuring that improvement will continue in the years ahead. The extent of the ultimate development would be limited only by the imagination and resourcefulness of present and future citizens.



PUBLIC ACCESSES TO PORTAGE INLET

	Location	Frontage in Feet
		900
1	Trans-Canada Highway	66
2	Wilkinson Road	60
3	Grange Road	192
4	Admirals Road (Inc. Colquitz Rd. N.)	66
5	Austin Avenue	66
6	Dysart Road	66
7	Arundel Drive	9
8	Westing Road (Footpath)	33
9	Westing Road	20
10	Garry Road	40
11	Murray Drive (East)	66
12	Ashley Road	40
13	Murray Drive (West)	40
14	Dunkirk	80
15	Murray Drive (South)	132
16	Admirals Road (at Craigflower Bridge)	2600
17	Craigflower Bridge to Adelaide Avenue	500
18	Austin Avenue to Dysart	900
19	Heath Drive to Gorge View	40
20	Forshaw Road	10
21	Shirley Road	66
22	Garthland Road	66
23	Delwood Road	66
24	Aral Road	10
25	Brigadoon Place	20
26	Craigowan (East)	60
27	Shoreline Road	10
28	Craigowan (West)	132
29	Helmcken Road (Bridge)	200
30	Trans-Canada Highway (Craigflower Cr.)	230
31	Gull Road	15
32	Caton Place (Lane)	66
33	Midwood Road	500
34	Helmcken Park	600
35	Tidewater Road	70
36	Crane Road	50
37	Polly Road	100
38	Stillwater Road	33
39	Chancellor Avenue	
	TOTAL	8220 ft.

This figure does not include the Esquimalt Gorge Park which has approximately 3000 feet.

COPY

University of Victoria
Department of Biology
Victoria, British Columbia
April 20, 1965

Mr. L. Smith
137 Kingham Place
Victoria, B. C.

Dear Mr. Smith:

At your request I have prepared a report on the biological effects of damming the Gorge.

I must stress that prediction of the biological effects of human control is an uncertain business. Biological environments are so complex that upsetting the balance in one way usually has quite unforeseen side effects. The opinions expressed here are made on the best data obtainable, and I hope that they are not too ill-founded.

Yours sincerely,

(Signed) D. V. ELLIS
Associate Professor

Biological Effects on Portage Inlet of
Damming the Gorge

A Report Requested by Mr. L. Smith
and based on information supplied

D. V. Ellis, Ph.D.
Associate Professor
Biology Department
University of Victoria

April 19, 1965

Introduction

This report is based on the understanding that the plan for damming the Gorge consists of a wall which can be laid flat on the bottom and raised into position to control water levels. Raising in this way will be used to prevent tidal inflows during periods of low river run-off so that water levels may be kept low in Portage Inlet. In this way beach cleaning, etc., by interested parties will be facilitated and the recreational use of the Inlet increased.

Specific questions asked were:

1. What biological effects might this lowering of water levels have on the biology of Portage Inlet?
2. How can deleterious effects be minimized?

Report

The important biological stocks of larger organisms inhabiting Portage Inlet are herring, clams and waterfowl. There are minor stocks of trout and salmon. Oysters occur as juveniles but apparently not as adults. The inlet is a minor breeding and feeding place for waterfowl in summer. Other stocks of biological importance may exist but are not immediately apparent, and there has been no opportunity of surveying the inlet to locate them.

The annual season of biological activity as expressed by the stated stocks is shown in Figure 1. There is considerable activity in winter when herring arrive from the open sea apparently in October, remain through the winter, and spawn in March amongst the eel-grass beds. The young hatch in April, feed in the Inlet until the end of May when they school and migrate out to sea. A large number of winter resident waterfowl also feed in the Inlet from late August to March.

In summer there is an active period from late June to August when clams and oysters spawn. This period is the common spawning time of many marine organisms, and for want of better information we can assume that any unknown biological stocks which may be of food and other value to the known stocks are most likely to spawn at the same time.

From Figure 1 it can be seen that there are two periods of low biological activity. A low occurs in early June between the departure of young herring and commencement of shell-fish spawning. A second low occurs in September between settlement of shell-fish spat and arrival of the winter herring and waterfowl.

The intention of closing the Gorge Dam will be to prevent salt water from entering Portage Inlet at high tide; such salt water intrusions are believed to occur naturally, and indicate that a mass of salt or brackish water permanently occupies deeper parts of the Inlet. Normally this salt water mass will be overlain by freshwater from river run-off.

Control of water level during periods of low stream run-off should have the effect of lowering water levels by removing the upper freshwater layer. The underlying brackish water layer should remain unaffected, and hence marine and estuarine organisms inhabiting deeper water should not be affected by temporary control.

Shallow water organisms however will be exposed and suffer from dessication. The deleterious effect will depend in part on the length of period of lowered water levels.

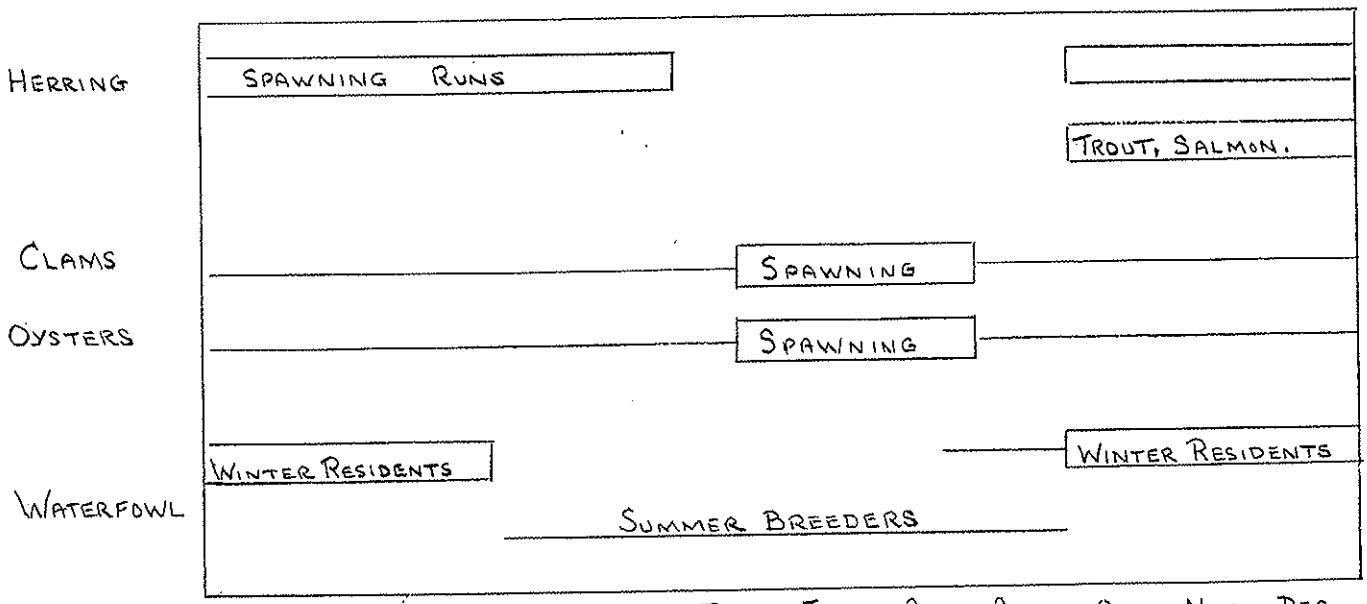
An obvious serious effect of lowered water levels will be on the beds of eel-grass in the Inlet. These are the preferred spawning habitat for Pacific herring, which deposit their eggs on the fronds. There has been no opportunity to survey the distribution and depth of these beds in Portage Inlet, but in fully tidal water they normally lie from +6 to -2 ft. tidal levels. The plant can withstand only about 6 hours of dessication. Any control which drops water levels below the depths of the eel-grass beds for more than a few hours will probably eliminate both eel-grass and hence herring from the Inlet.

However short periods of control maintaining water levels so that parts of the beds remain submerged will retain some root-stocks so that the eel-grass can repopulate the temporarily exposed beds. The temporary control should utilize the June low activity period to provide seven months regrowth before the March spawning of the herring.

Recommendations

The deleterious effects of lowering water levels in Portage Inlet as specified in this report should be minimized by:

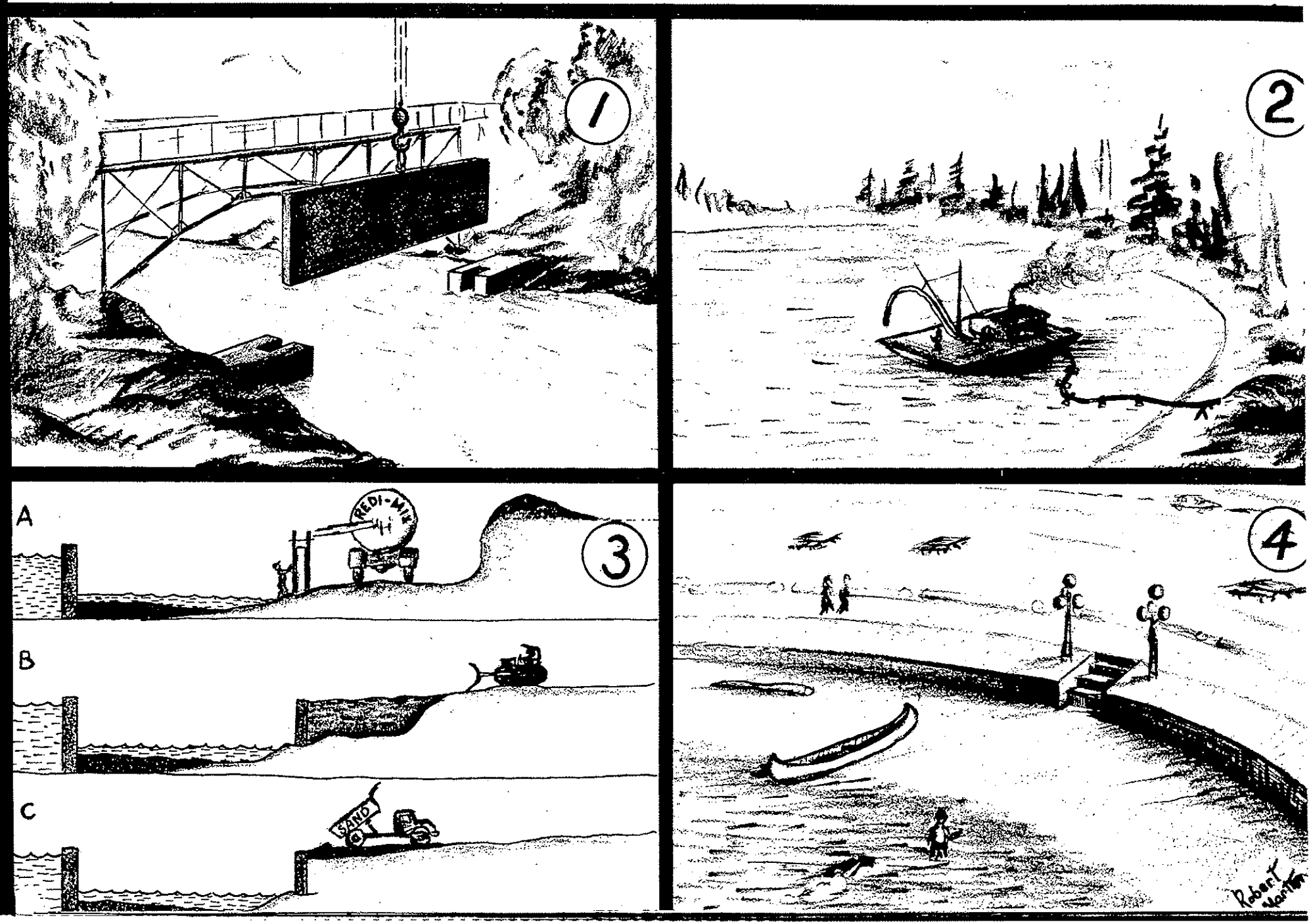
1. Controlling levels during the period June 1 - 15
2. Controlling levels for short periods, preferably no more than one week at a time.
3. Controlling levels so that deeper portions of the eel-grass beds are not exposed at any time.



WIDENED BARS INDICATE MAJOR STOCKS OR BIOLOGICALLY IMPORTANT PERIODS.

MINIMUM BIOLOGICAL ACTIVITY OF THESE STOCKS OCCURS FROM MAY TO EARLY JUNE AND THROUGH SEPTEMBER.

FIGURE 1.


1
2
A
REDI-MIX
3
B
C
SAND
4
Robert Wanton

RUSSELL E. POTTER & ASSOCIATES LTD.

Consulting Engineers

603 COURTNEY STREET VICTORIA, BRITISH COLUMBIA TELEPHONE 385-5933

July 15, 1965

Mr. Lloyd Smith,
137 Kingham Place,
Victoria, B. C.

Re: Proposed dam at Gorge Bridge and beach development at Portage Inlet as submitted to the Centennial Committee by Mr. Richard Faulks and yourself.

Dear Sir:

The dam could be a very simple structure similar to the moveable dam once used at Grand Forks, B.C. In this installation we used hinged timber sections which are easily raised and lowered by hand. A similar structure could be installed at Gorge Bridge together with attractive walks and platforms for viewing the falls for less than $50,000.

The main development for your centennial project would be the beach and park development in Portage Inlet at Trans-Canada Highway, approximately 1800 feet of beach frontage. This would involve removal of approximately 180,000 c.y. of clay from the floor of the inlet to provide the required fill material. Rather than the dredging illustrated in your sketch, I would suggest a dragline operation. Sufficient fill material could be obtained by removing the mud flat in the Chancellor beach area. Two drag-lines could be operated simultaneously to pile the clay at the west end and scrapers could be used for filling and levelling. Approximately 10,000 c.y. of fine sand would be required to cover the beach. I would suggest a 6% slope below water level which would give a one hundred foot length of beach under shallow water.

Parking facilities could be provided on both sides of the Trans-Canada Highway. The provision of a parking lot across the highway connected by an overpass is perfectly feasible. It is an intriguing idea and could result in a very attractive centennial arch or gateway for the city.

The following estimate of costs is, of course, tentative. Some items such as the provision of playground equipment are very flexible. Items such as the elevated parking lot could be eliminated altogether without impairing the basic dam-beach project.

.....2

I have no hesitation in giving whole-hearted support to this proposal. I think it is a practical idea and one that could well come within the financial and time limits of the centennial project. I think improvement of the Gorge could well arouse an enthusiastic response from the people of this area. Further I think we would be negligent if we put off much longer the development of this waterway for recreation.

An estimated cost sheet is attached.

Yours very truly,

Russell E. Potter, P.Eng., A.C.E.C.

REP/clr

ESTIMATED COST

Dredging	$ 150,000.00	
Dam	45,000.00	
Parking lots	60,000.00	(overpass, Land, etc.)
Dressing Rms.	50,000.00	(with disposal plant)
Swim boom	5,000.00	(for small children)
Park equipment	15,000.00	
Landscaping	45,000.00	
	$ 370,000.00	
15% for Engineering and Contingencies	55,500.00	
	$ 425,500.00	

Time to complete - 10 months

Dredging and landscaping	8 months
Buildings	2 months