

VEDDER RIVER MANAGEMENT AREA

PLAN

September 1983

Prepared by

THE VEDDER RIVER
MANAGEMENT COMMITTEE

SUMMARY

The purpose of this report is to outline the plan for the management of the area between the Vedder River setback dykes from Vedder Crossing bridge to Boundary Road.

The Vedder River Management Area is located some 80 km east of Vancouver in the District of Chilliwack. Although the area has had a variety of uses ranging from agriculture to camping sites, the river channel has historically been unstable and several major floods have inundated farmland bordering the river and caused severe damage to private property in Yarrow. Following the December 1975 flood, the Ministry of Environment through the Fraser River Joint Advisory Board and with federal/provincial funding implemented a system of flood control works including setback dykes, groynes, and channel maintenance.

The project manager quickly recognized the benefits in utilizing the area between the dykes as a public use area and produced a preliminary Management Area Report in 1979. The Lower Mainland Regional Water Manager initiated the plan in 1980 and this report is the result of that planning effort.

The Vedder River Management Committee made up of federal, provincial and municipal representatives and supported by a Technical Committee has produced this plan and will ensure adherence to its goal and objectives.

Several interim decisions were made during the formulation of the plan. These decisions permitted the leasing of agricultural parcels on a year to year basis, the operation of the riverside campground, the drawing up of Gravel Removal Guidelines, and the holding of a public information meeting.

The Goal of the plan is "to ensure the integrity of the Vedder River floodway while maintaining and enhancing the natural resources of the area and incorporating where compatible and desirable, recognized historical uses and educational programs for the benefit of the people of British Columbia."

Six objectives were defined to meet the goal and a section on each outlines the area affected, background and the implementation procedure and costs.

1. Floodway Objective

No development or decision is to occur that could cause or suffer from damage, or reduce the flow capacity of the floodway. Gravel may be removed in accordance with the Gravel Removal Guidelines and a series of options for gravel removal is developed. The Ministry of Environment, as land owner will have ultimate authority over the retention of floodway capacity.

2. Public Recreation Objective

The recreation potential of the area is recognized and the Parks and Outdoor Recreation Division of the Ministry of Lands, Parks and Housing provided a recreation study that was used as a basis for this plan.

Recreation facilities will include hiking and riding trails, a campground, sports field, outdoor amphitheatre, horse staging area, and public information program. Other recreational activities may be approved by the Management Committee.

3. Fisheries Objective

As both the Fish and Wildlife Branch and Federal Fisheries and Oceans have an interest in the plan area, enhancement and protection measures for important sections of streams are covered. Generally work proposed is low key and will follow flood control works construction.

4. Blue Heron Objective

A blue heron colony exists in the Management Area and although little work has been carried out by the Fish and Wildlife Branch and limited information is available on the exact numbers and areas affected, no decisions have been made in this plan that will adversely affect their general area of habitation.

5. Agricultural Lease Objective

Leases are being issued in order to maintain and utilize parcels of land used historically for some form of agriculture. A set of guidelines for the issuance of leases and their uses is included in Appendix V.

There are 14 parcels available ranging in size from 0.4 ha to 9.3 ha and generally only haying and/or grazing are acceptable uses. Lease terms will be for 5 years. Leases will be issued through the Ministry of Agriculture and Food however the Management Committee will maintain control and stipulate lease constraints.

6. Related Land Objective

The Management Committee recognizes the existence of other land tenures within or adjacent to the Management Area. The relationship with each of the three major areas is identified and a statement made of future involvement.

The Vedder River Management Plan will be implemented by the Management Committee members jointly for matters of mutual interest or by individual agencies if of singular interest.

Major costs for such items as gravel removal are planned to be self-supporting whenever possible, that is, costs should be recovered by the sale of the material. If this is not possible the Ministry of Environment will assume a lead role in coordinating the work and arranging cost sharing with the Federal Government and Local Authority. Improvements such as the sports field will be the responsibility of a particular agency (in this case, the District of Chilliwack) or of Committee members jointly through individual budgets (as for general area signs).

Technical concerns will be resolved by the Vedder River Technical Committee and ultimate management decisions made by the Vedder River Management Committee.

Input from concerned public groups or the public in general will be sought for major management decisions via a public advisory body and public information meetings.

The land will be owned by the Ministry of Environment and although the primary function of the area is as a floodway certain other interests and uses are recognized as being compatible within certain limitations.

The management of these various resources and interests by a committee of resource managers and public representatives from various levels of government, with public input, should optimize the ultimate area use and benefit to the public.

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VEDDER RIVER MANAGEMENT AREA

1.0 Introduction

The purpose of this report is to outline the plan for the management of the area between the Vedder River setback dykes from Vedder Crossing bridge to Boundary Road, (see fig. 1).

1.1 Background

The Management Area comprises some 325 ha of active river channel and floodplain. The area has been used over the years for a wide range of functions including agriculture, recreational fishing, camping, wildlife habitat, fish spawning and rearing and bush land. That portion from approximately Webster Road to the downstream side of the B.C. Hydro Railway is owned by the Ministry of Environment. The remainder is owned by the District of Chilliwack.

The Vedder River Management Area, (V.R.M.A.) is located in the District of Chilliwack, some 80 km east of Vancouver. The Vedder River, named the Chilliwack River upstream of Vedder Crossing, originates in the North Cascades of Washington State and exits from the mountains onto the floor of the Fraser Valley at Vedder Crossing. As a result of this sudden change in gradient, the river channel is historically unstable below Vedder Crossing and a great deal of material is deposited annually in the Management Area. Man has made feeble unsuccessful attempts to rigidly train its flow.

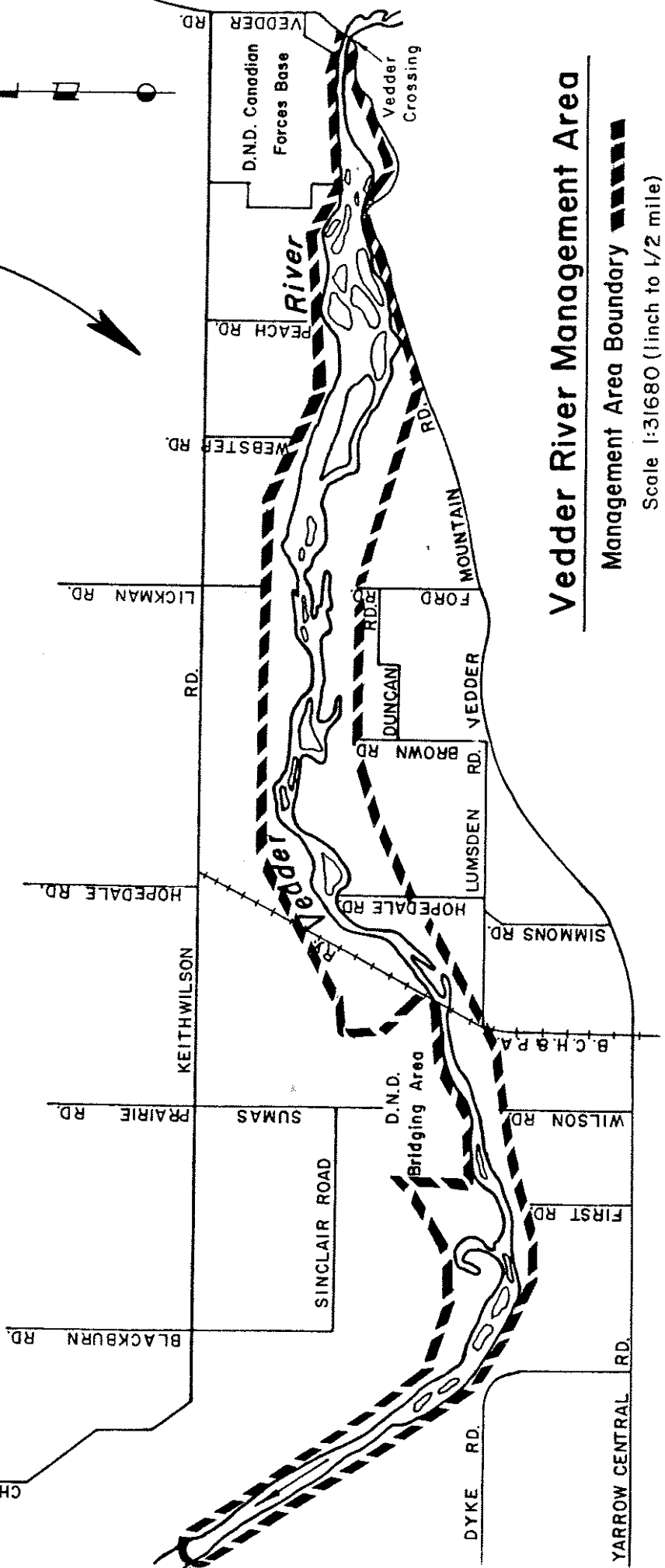
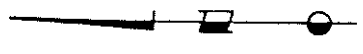
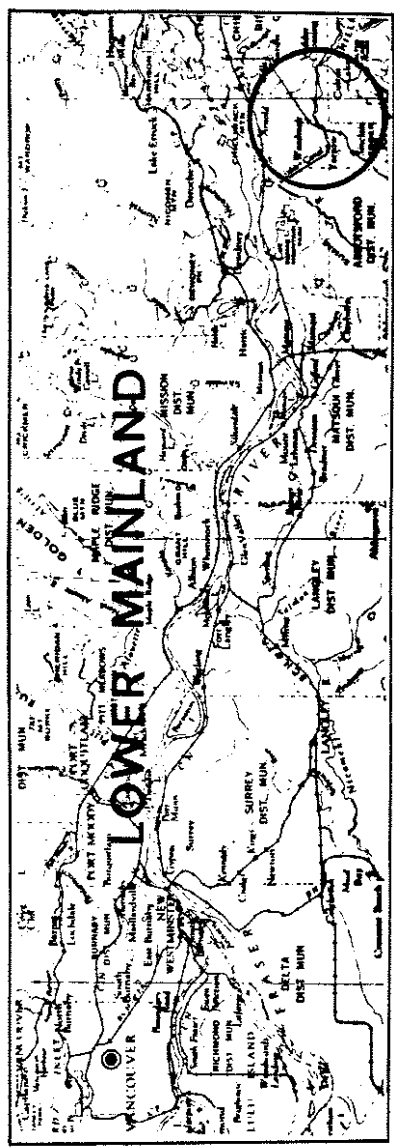


Fig. 1

Over the years there have been several major floods, the most recent being December 3, 1975, when the river overtopped its banks, broke through the B. C. Hydro Railway embankment and extensively damaged the town of Yarrow. (Bibliography)

The Ministry of Environment with Fraser River Joint Advisory Board approval and federal/provincial funding is creating a system of flood control that includes enlarging the active channel to accommodate most flood flows and constructing set back dykes, floodboxes and groynes. All measures are intended to not only protect surrounding farms from flooding but to permit the river to act in a virtually normal manner with meandering and periodic overtopping of the normal flow channel. Construction is now virtually complete.

When securing a right-of-way for the dyke, some existing parcels of land were physically split. Those affected by the dyke were purchased by the District of Chilliwack. The portion on the land side of the dyke was resold and the portion on the river-side retained by the District. In an agreement with the Provincial government, the District will turn over the title to the land between the dykes to the Ministry of Environment and retain ownership of that portion of land upon which the dyke is located.

During design and construction of the flood protection works, the project manager realized that the land between the dykes, although periodically subject to flooding, could still be beneficially used for most activities it had historically supported. A condition of permitted uses would be adherence to a proper management plan.

The Water Management Branch produced the report, "The Township of Chilliwack Background Report - Vedder River Floodway Management Plan, 1979", which outlined the existing and potential uses of the area and recommended a course of action to properly control those uses in an active floodplain. This proposal included a management committee of personnel from resource agencies at federal, provincial and local levels of government.

1.2 Vedder River Management Committee

In March, 1980, the Deputy Minister of Environment requested that the Lower Mainland Regional Director formulate a Management Plan, (Appendix I). The first meeting was held in April, 1980, and chaired by the Regional Water Manager, Ministry of Environment.

As a basis to work from, the Committee used the Deputy Minister's proposed planning organizational structure as well as his "Proposed Criteria to be Stipulated by the Fraser River Joint Advisory Board as Basis to the Management Plan for the Area", and related responses from Environment Canada, Inland Waters Directorate, and Fisheries and Oceans, (Appendix I).

In general terms, all related resource agencies interested in the plan area were to be involved and the area's prime use was to be a floodway.

As a result of the first meeting, the membership on the Vedder River Management Committee, (V.R.M.C.) was established as outlined in Fig. 2.

VEDDER RIVER MANAGEMENT PLAN

ORGANIZATIONAL CHART

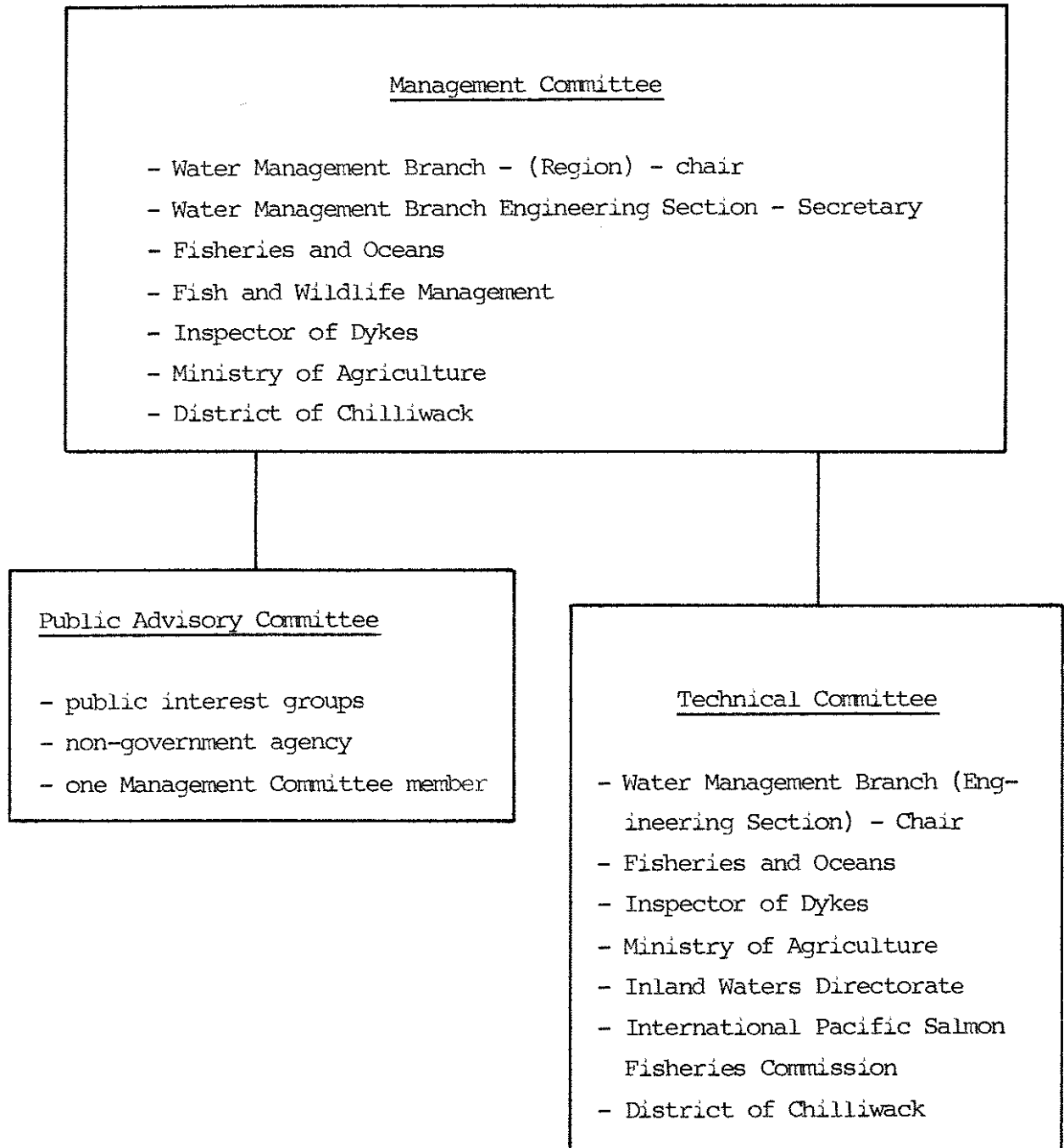


Figure 2

1.3 Vedder River Technical Committee

The V.R.M.C. appointed a Vedder River Technical Committee, (V.R.T.C.) comprising staff from each member agency, to deal at a field working level with matters pertaining to actions initiated by the V.R.M.C., (Fig. 2). A typical decision the V.R.T.C. handles is how and when will gravel be removed from the channel to maintain flow capacity following a decision by the V.R.M.C. that the gravel must be removed in order to meet the plan objectives.

1.4 Interim Decisions by Management and Technical Committees

Once the membership of the Management Committee was established and prior to commencing formulation of a plan, several matters had to be dealt with pertaining to use and maintenance of the plan area as it stood at the time. Details of these matters as they relate to the ongoing plan are found in the plan itself, (Section 2). These include:

- 1.4.1 Several parcels of land within the V.R.M.A. that had previously been utilized for agriculture were still capable of such but were not currently occupied. If untended for much longer, weed and brush growth would lessen the agricultural suitability.

In July, 1980, the District of Chilliwack advertised all but one parcel for lease by tender on a calendar basis. Certain expropriated parcels continued to be utilized by former owners until December 31, 1980. The conditions of the leases met the V.R.M.C.'s immediate objectives and did not set a precedent for future management options.

All parcels have been re-offered to the lessee for lease on a year to year basis except for those on which groyne construction would occur and hence, interfere with agricultural activities. Fig. 6, shows those areas capable of sustaining agricultural activities and identified for lease.

The 1983 lease year will be the last of the one year leases with all subsequent leases to be for a proposed maximum 5 year renewable term. Details of the leasing arrangements are found in Section 2.1.5 of the Plan.

- 1.4.2 The former Klein Campsite had been a popular facility utilized by fishermen and other recreationalists. It consisted of motel/cabin units, the owner's house and workshop, serviced tenting and trailer sites, washroom facilities and an enclosed picnic shelter. Although this property was not flooded in 1975, it is situated between the setback dykes and hence, as part of the plan, had to meet the Committee's requirements that no permanent buildings would be permitted. All buildings except for washrooms and a small workshop were removed and the services repaired to permit the Cultus Lake Parks Board to operate the campground beginning in 1980. Conditions were set out to prevent campers from taking up long term occupation of a campsite and a caretaker living in a travel trailer has supervised the site. Although campsite use in 1980 was lower than expected due to poor weather, it has increased each year since and the Committee expects past interest in the facility to return. The site presents a logical and pleasing alternative and overflow facility for the Provincial Park and Parks Board campgrounds at Cultus Lake.

- 1.4.3 The Technical Committee has prepared, and the Management Committee has approved a set of Gravel Removal Guidelines that will serve as a basis for active channel maintenance. (See Appendix II).
- 1.4.4 A Public Information Meeting was held in Yarrow in January, 1981, to present the Management Area concept to the residents of the Yarrow/Sardis/Chilliwack area. Approximately 40 people attended and little concern was expressed regarding the intended direction for the plan. In general, the comments related to the "slow" progress of dyke construction and the need, or alternatively, the lack of need, depending on the interest expressed, to remove gravel from the River.

One objective of the meeting was to determine those public groups interested in taking part in a Public Advisory Group to assist the Management Committee. The groups showing interest in such a committee are the Yarrow Ratepayers, Yarrow Elementary School and the B. C. Steelhead Society.

2.0 Vedder River Management Plan

Introduction

This section contains the goal and objectives of the plan and a subsection relating to the details of each objective.

The concept of the Management Area was conceived by the Ministry of Environment Engineering Section assigned the task of designing and constructing the setback dykes, and formally recognized in the 1979 agreement between the Ministry of Environment and the Corporation of the Township of Chilliwack to provide certain flood protection works. (Appendix I).

The general direction followed by the Management Plan is summarized in (1) the Provincial - Municipal agreement and, (2) "The Proposed Criteria to be Stipulated by the Fraser River Joint Advisory Board as Basis to the Management Plan for the Area". Relevant sections of both documents are found in Appendix I. From these documents, the Management Committee derived the Plan's goal as:

Goal: To ensure the integrity of the Vedder River floodway while maintaining and enhancing the natural resources of the area and incorporating where compatible and desirable, recognized historical uses and educational programs for the benefit of the people of British Columbia.

In order to meet this goal, objectives have been set and will be implemented through a phased approach.

- Objectives:
- (1) To retain an overall floodway capacity equivalent to the 200 year return period flow as determined by the Ministry of Environment, Water Management Branch.
 - (2) To provide public recreational facilities in the form of an overnight campground, a multi-purpose playing field, walking and/or horse trails, river access points, a public information/education program in the form of self-guiding tours, an outdoor amphitheatre for nature talks, a coordinating service for group tours and other related facilities deemed appropriate by the Management Committee.
 - (3) To maintain and enhance the spawning and rearing capabilities in the main river and numerous tributaries and side channels.
 - (4) To protect the Great Blue Heron nesting grounds downstream of the B. C. Hydro Railway Bridge.
 - (5) To lease for haying and/or grazing purposes only, the parcels of land identified on the Plan map.
 - (6) To cooperate with agencies having tenure over lands directly affected by the V.R.M.A. These include:
 - (a) Trans Mountain Pipeline Company Ltd., with respect to the 610 mm oil supply main.
 - (b) B. C. Hydro and Power Authority Railway, with respect to their railway right-of-way, bridge crossing of the Vedder River, and construction and operation of the flood overflow structure under the tracks.

- (c) The Canadian Forces Base, Chilliwack, with respect to the Camp and Wet Bridging Area operations.

2.1 Objectives

2.1.1 Floodway Objective

To retain an overall floodway capacity equivalent to the 200 year return period flow as determined by the Ministry of Environment, Water Management Branch.

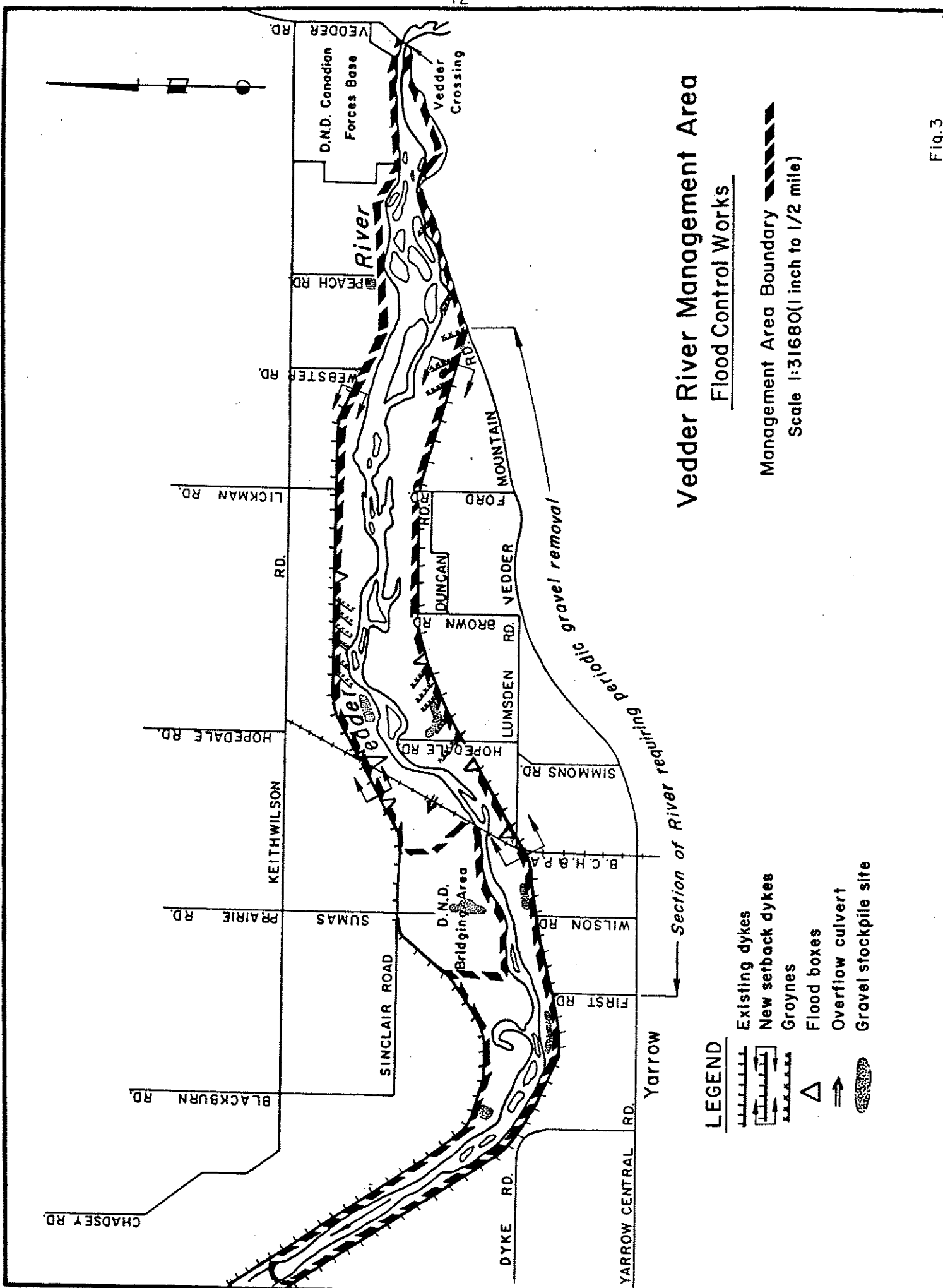
2.1.1.1 Areas Affected

This objective affects all the V.R.M.A., as outlined in Fig. 3. It specifically relates to active channel maintenance through gravel removal and to the restrictions placed on other activities within the area. The maintenance of the dyke and related structures is solely the responsibility of the Local Authority as outlined in the Flood Protection Agreement (Appendix I)

2.1.1.2 Background and Description

In order to meet this objective, two main matters must be considered.

- (1) Development or use of land within the Management Area must be of a nature such that damage due to flooding would be of a cosmetic nature only and costs incurred would be absolutely minimal.



Vedder River Management Area

Flood Control Works

LEGEND

- Existing dykes
- New setback dykes
- Groyne
- Flood boxes
- Overflow culvert
- Gravel stockpile site

Management Area Boundary
 Scale 1:31680 (1 inch to 1/2 mile)

Fig. 3

All permanent buildings such as houses, cabins and barns have been or are being removed and no new structures will be permitted.

Minor open sided recreational structures or campground service structures will be permitted. These will take the form of a picnic shelter, washrooms, outhouses, small workshop, picnic tables and rustic amphitheatre benches and related amenities. In addition, fencing for leased lots will be permitted with the approval of the Management Committee.

- (2) Gravel will have to be removed from the active channel from time to time in order to maintain an overall floodway capacity equivalent to the 1 in 200 year flow frequency. This capability will be determined through an annual survey carried out in late February (low water) by the Water Management Branch.

The Guidelines for Gravel Removal agreed to by the Management Committee are found in Appendix II. Generally, scalping of gravel bars will be permitted in even numbered years during the period of July 15 to August 31. The only exception will be for extraordinary reasons and work will then be carried out under guidelines established by the Technical Committee and agreed to by the Management Committee.

2.1.1.3 Implementation and Costs

All land within the Management Area is owned by either the Ministry of Environment or District of Chilliwack and the control of types of improvements or activities will be the responsibility of the Management Committee using this plan as a guideline. This portion of the objective shall be implemented immediately.

The Ministry of Environment will ensure the channel maintenance program is implemented immediately in accordance with the "Gravel Removal Guidelines". The following agencies will be given the opportunity to use or buy the gravel depending on need.

- (1) Ministry of Environment, Water Management Branch for dyke construction and related activities.
- (2) District of Chilliwack for dyke maintenance Management Area activities.
- (3) A provincial or federal government agency demonstration a need to the Management Committee.

The following methods of funding will be considered by Water Management.

- (1) Cost sharing between the Province, Federal Government and District of Chilliwack.
- (2) Letting a contract where bids will consider the cost of gravel removal from the Management Area according to the "Gravel Removal Guidelines" and and benefits to be derived from the sale of the material.
- (3) Program or special funding provided by the Ministry of Environment.

Supervision of the work will be the responsibility of The Ministry of Environment, Water Management.

Short term stock piling will be available at sites identified on Fig. 9 (Map pocket). Material stored on these sites should be removed by October 31 of the same year, however on recommendation from the Technical Committee, the Management Committee may extend the deadline.

A permit from the Land Management Branch for private sale of gravel must be obtained in the contractor's name prior to work commencing for contract removal. This is to ensure payment of royalties and performance bonding. Government funded removal does not require such a permit.

A gravel Removal Permit issued by the Department of Fisheries and Oceans is required. A permit will be issued through the Management Committee.

2.1.2 Public Recreation Objective

To provide public recreational facilities in the form of an over-night campground, a multi-purpose playing field, walking and/or horse trails, river access points, a public information program, and an outdoor amphitheatre for talks and meetings.

2.1.2.1 Areas Affected

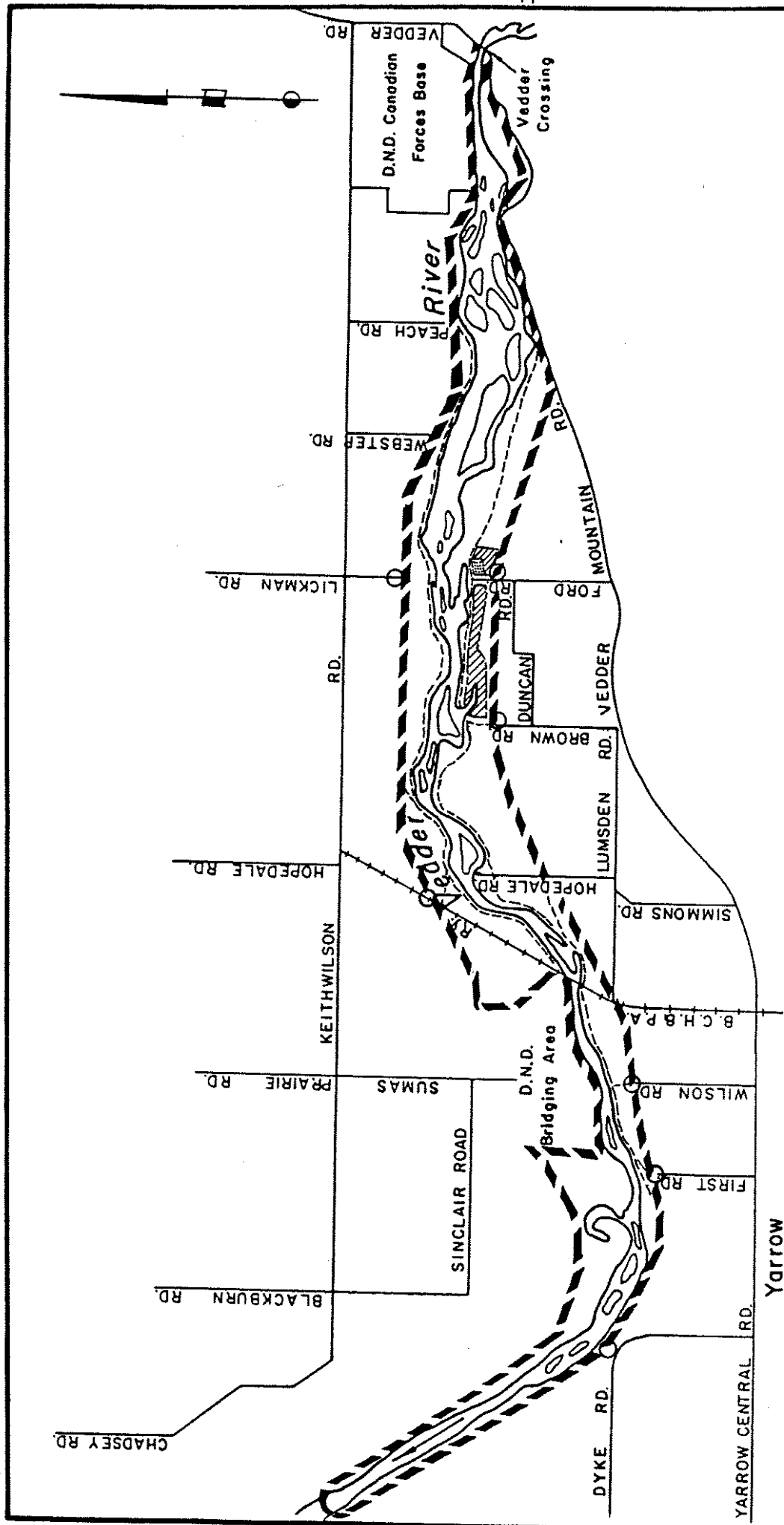
Fig. 4, shows the locations of various public recreation oriented facilities. It should be recognized that virtually all of the V.R.M.A. is available for one form of recreation or another, without the need for capital works of any kind.

The most intensively used recreation area will be the campground/sports field on the south side of the river. Two improved access/parking areas will be created and a horse staging area established. A rustic amphitheatre will be constructed adjacent to the campground and utilized for nature talks and slide shows.

Other recreational development will be much less intensive as one aim of the plan is to retain the natural aspects of the area as much as possible. Any other legitimate proposals will be considered with preference being given to public groups.

2.1.2.2 Background and Description





A recreational study for the V.R.M.A. was carried out by Parks and Outdoor Recreation Division of the Ministry of Lands, Parks and Housing, (Appendix III).



Vedder River Management Area

Recreation Areas

Legend

-  Core Area - Campground, sports field, picnic area, horse staging area.
-  Outdoor amphitheatre
-  Main foot trails
-  Planned access & parking

Management Area Boundary 

Scale 1:31680 (1 inch to 1/2 mile)

Fig.4

In general, the area has many desirable features for recreation ranging from the river itself and related activities such as fishing, walking and limited swimming to Blue Heron nesting grounds, to an existing riverside campground, to riverbank and wooded trails.

The area is immediately adjacent to the Town of Yarrow and within a 10 minute drive of Sardis and Chilliwack.

Tourist traffic to Cultus Lake must pass by the V.R.M.A. and the Parks Branch feel the area will increase in importance not only as an overflow facility but as a destination area.

In order to achieve the plan's aim to maintain the natural features of the area, all suggestions by the Parks Branch and wishes of some segments of the local residents cannot be met. One such demand is a motocross facility. This would be highly undesirable in the Management Committee's opinion.

2.1.2.2.1 Trails

Many trails exist at present, with the main ones following the dykes or the river bank and other minor trails interconnecting through the wooded areas. The proposed trail system shown on Fig. 4, makes use of existing facilities and should require only minor improvements and maintenance work.

Horses will be formally limited to the south dyke, however, use of the north dyke will occur. Use of internal trails by horses will be prohibited. The south dyke trail will form a loop west of Ford Road with Vedder Mountain Road and provide a pleasant riding experience. Trails within the setback dyke area will be limited to foot traffic. Motor vehicles will not be allowed on any dykes or trails.

2.1.2.2.2 Campground/Sportsfield/ Amphitheatre/Horse Staging Area

This area is the core of the Management Area and should receive the greatest intensity of use.

The campground has historically been a favorite camping site for fishermen and should continue as such.

Immediately upstream of the campground is a small open area where a rustic outdoor amphitheatre is planned. It will consist of seating for 50 to 75 people and serve as an assembly point as well as a demonstration facility for nature talks and slide shows. The location is close to a heavily wooded area for interpretive tours and to the campers.

On the west side of the campground is a former gravel storage area. It is a large flat field of some 1.0 ha, and will be developed into a sports field complex. An adjacent 0.95 ha is suitable for additional playing fields or picnic areas.

The area lies between Ford and Brown Roads which will both provide access and parking. The horse staging area will be part of the Brown Road access and consist of a drive through facility for cars with trailers, parking and temporary holding facility for the horses. Although the Parks and Outdoor Recreation report recommends using the west side of Brown Road, the Management Committee feels the east side adjacent to the dyke will be more suitable and cause less disturbance to the agricultural lease Number S2.

The Committee feels that by utilizing one central area for activities requiring some form of construction, disturbance to the remainder of the Management Area will be minimal. The area in question has been recently disturbed hence, no new areas will be opened up.

The procedure to be followed in developing the core area is as follows.

- (1) The campground facilities were repaired and opened by the Cultus Lake Parks Board for

the summer of 1980. Continued operation and maintenance following guidelines of the V.R.M.A. are to be by the Cultus Lake Parks Board.

- (2) Grading and seeding of the sports field/picnic area will be handled by District of Chilliwack. As this facility directly contributes to the District's recreational program, continued maintenance and operation will be the responsibility of the District.
- (3) Construction of the horse staging area and public parking for 20 cars and 5 horse trailers at Brown Road as well as for 10 cars at Ford Road, will be carried out by the District of Chilliwack. Gravel for grading or road construction will be available to the District from gravel stock piles if it is not required for the dyke construction.
- (4) Construction of the amphitheatre will be rustic in nature, that is, with log benches and a gravel surface, however provision for electrical outlets for slide shows will also be provided. Log material is available from within the Management Area and construction will be handled by the District of Chilliwack.

The core area facilities will be constructed starting in the summer of 1982, and completed as funding permits by the District of Chilliwack. A small stream crosses the area and construction must recognize it as a desirable natural feature, hence a minimum 15 m undisturbed strip must be left on each bank. The Brown Road crossing should permit fish passage and be completed in the dry as much as possible with minimal silting to downstream areas. The period of work within the stream will be July 15 to September 1.

Although the core area is part of the Management Area and its use must comply with the Management Plan, the District of Chilliwack has a great interest in it as a recreational facility for the local area. The District therefore will be contributing the capital and maintenance costs for improvements. The area will be available for other agencies to use for displays and other Management Area related activities on agreement by the Management Committee. In addition, fees derived from the campground will be retained by the District of Chilliwack and a separate set of accounts will be kept for the core area in order that this facility may be broken out from the District's other recreational projects.

The rights of the District to operate the campground/sports field complex will be continuous with an option for the Management Committee to cancel or amend such rights on one years notice, should a more suitable use become apparent.

2.1.2.2.3 Public Information Program

In order for the best use to be made of the V.R.M.A., the public must be made aware of what is available to them and properly directed once on site. In addition, having some involvement in the management decisions makes the public much more receptive to the final use of the area.

The means of providing this direction to the public and receiving their thoughts will consist of:

1) Public Advisory Committee

This plan has been presented to a Public Advisory Committee made up of groups who showed an interest in participating following the January, 1981 Public Information Meeting. Wherever possible their comments were included in the final plan. Subsequent meetings will be held as required to present proposed changes to the plan or problems with the implementation of its parts.

The Public Advisory Committee will consist of one member of the Management Committee and the interested and involved public groups. The membership may be amended from time to time.

2) Public Information Meetings

To date, two public meetings have been held, one prior to construction commencing and one during formulation of the V.R.M.A. and Plan.

Additional meetings will be held as required and when major changes to the direction of the plan are in order, or when major problems or events have developed that affect the area.

3) Brochures and Signs

General area brochures will be developed and circulated to schools, government agencies, tourist bureaus and public offices as a means of advertising the area. Costs are to be equally shared by all Committee member agencies. These will be produced starting in 1983, following construction.

Signs will be erected on major roads leading to the area and at strategic points within the area to identify access points, trails

and points of interest. Cost sharing of signs of a general nature will be coordinated through the Management Committee. Costs pertinent to one agency's interests will be borne by that agency, however all sign designs will be similar and approved by the Management Committee. Erection of signs will be started in 1982, but limited to general directions and access points. Signing of Management Area details such as trails, will be initiated in 1983, to provide time for some facility improvement and provision by member agencies to budget for funding.

4) Displays

In order to describe the history of the area or a facility, a resource or feature of the river or floodplain or outline the development of the Management Area in general, displays located either in the core area or specific related sites may be constructed.

Displays common to the area or Management Plan will be cost shared equally by all member agencies. Matters relating to a specific agency such as fish spawning areas, would be the responsibility of that agency.

All displays must be approved by the Management Committee to ensure consistency in style and to prevent too many man made structures from being placed in the Management Area.

5) Interpretive Program

Many of the natural assets of the V.R.M.A. will be of interest to the public, both individually and in groups. To assist people in getting the most out of the area a self guiding interpretive tour is planned with points of interest marked, vegetation defined and natural and controlled river systems explained. The Provincial Parks Branch have indicated one of their Cultus Lake naturalists may be available to help set up a program and to conduct tours on an appointment basis, eg., for school tours.

The areas lending themselves to the vegetation and nature portions of the tour are: (1) the wooded area upstream from the amphitheatre. This is a heavily wooded parcel and provides a pleasant and interesting walking experience. (2) Both sides of the river below the railway bridge. Although much of the area is wet, some trails may be used for nature walks. This area has some sensitive sites and layout of access must be well planned.

Man made features of interest are the railway bridge, dykes, groynes and bank protection and agricultural parcels.

Natural river systems at work could identify erosion and flooding action, sediment transport and channel formation.

2.1.3 Fisheries Objective

To maintain and enhance the spawning and rearing capabilities of the main river, tributaries and side channels.

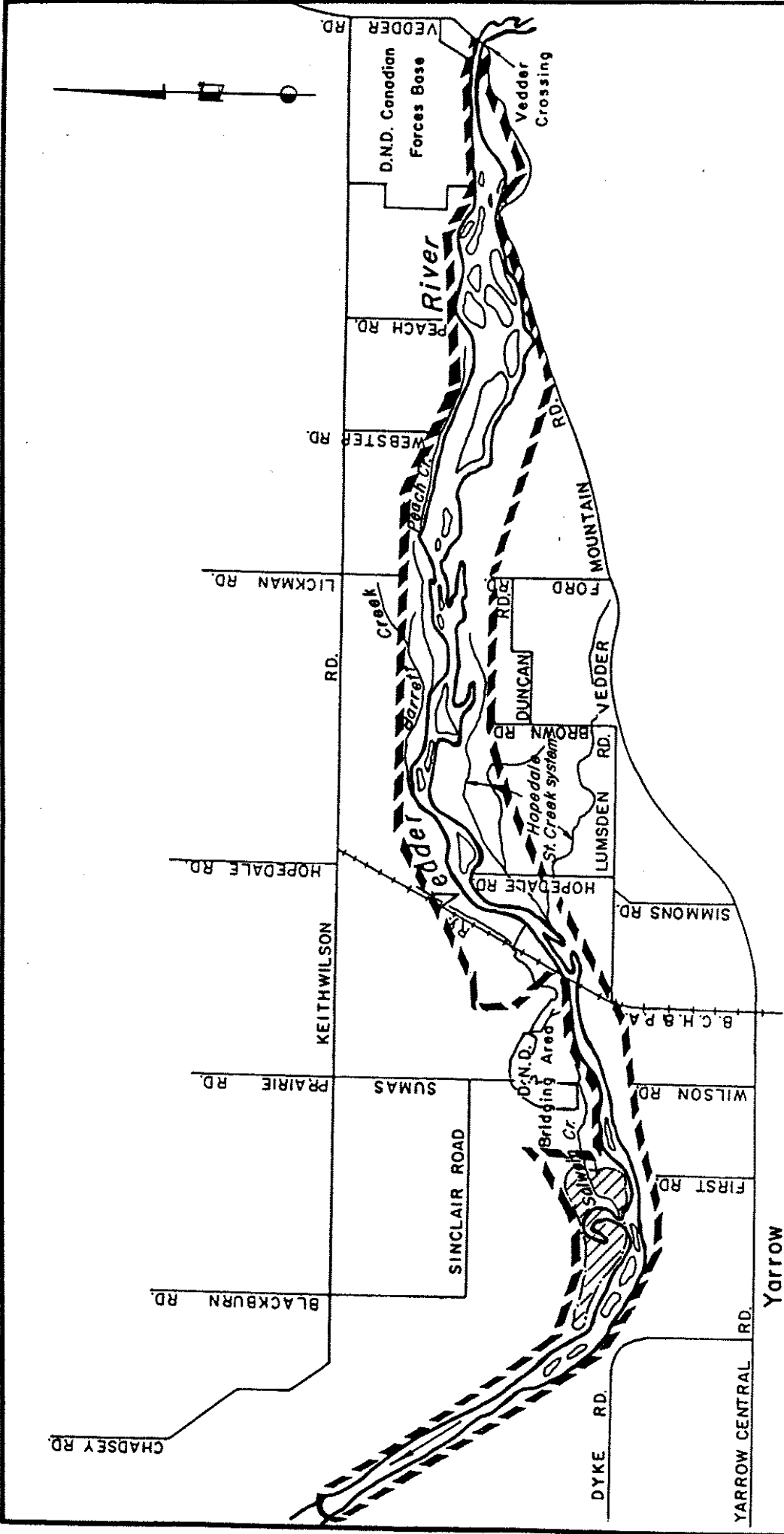
2.1.3.1 Areas Affected (Fig. 5)

Within the V.R.M.A., Federal Fisheries and Oceans are concerned mainly with coho, pink and chum salmon while the Provincial Fish and Wildlife Branch is interested in steelhead and cutthroat trout.

In both cases, enhancement opportunities within the main river channel are limited by the yearly changes caused by high water.




Of the numerous side channels, backwaters and tributaries, the following are of principal interest to both agencies:

- 1) Peach Creek - north bank between Peach and Lickman Roads.
- 2) Barrett Creek - north bank of Vedder River, west of Lickman Road.
- 3) Salwein Creek - north bank from B. C. Hydro Railway west through Canadian Forces Bridging area and then meandering through a low wet floodplain area to the Vedder River.



Vedder River Management Area Fish-Bearing Tributaries & Blue Heron Habitat

LEGEND

-  Fish bearing tributaries
-  Management Area Boundary
-  Blue heron habitat

Scale 1:31680 (1 inch to 1/2 mile)

- 4) Hopedale/Street Creek system - south side of the Vedder River from approximately Brown Road west to the B. C. Hydro railway bridge. This consists of several small watercourses.
- 5) Side channels - south bank upstream of Ford Road. Mainly of Provincial interest for steelhead.

2.1.3.2 Background and Description

Appendix IV, contains two letter reports regarding the Federal Fisheries and Oceans and Provincial Fish and Wildlife Branch interests in the V.R.M.A.

As mentioned in 2.1.3.1, enhancement projects will be limited to small stable watercourses where gravel placement or other improvements will not be destroyed by yearly mainstem freshets.

In general, the enhancement opportunities relate to:

- 1) Augmenting low summer and winter flows by excavating the channel below the lowest water table level,
- 2) Depositing spawning gravel,
- 3) Constructing siltation basins to prevent clogging of gravel beds, and
- 4) Constructing gradient control or bank stabilization structures to prevent scouring and silting.

The V.R.M.A. has been frequently used by fishermen over the years and in fact many of the trail systems were formed from this type of traffic. The area in general provides a pleasant natural experience and the Klein Campsite historically has been heavily used during the good fishing periods.

The Vedder/Chilliwack River system is one of the most important steelhead streams in the Lower Mainland Region and one of the Federal Fisheries and Oceans best medium sized coho, chum and pink salmon streams. Its importance stems from both sports fishing and spawning and rearing capability. The importance is shown by the fact that the federal government is now completing a salmon hatchery upstream of the V.R.M.A., at Slesse Creek.

2.1.3.3 Implementation Procedure and Costs

The types of enhancement projects described in 2.1.3.2, may be carried out without further approval from the V.R.M.C., however, any permits or approvals normally required from other agencies must still be obtained.

The staging of these projects will be based on available funding and priorities of the two fisheries agencies involved. Work on the Hopedale/Street Creek system and Barrett Creek will not be carried out until after all flood control construction activities have been completed, as these may particularly affect flow regimes in these two locations.

Other projects planned within the Management Area must receive prior approval from the V.R.M.C.

2.1.4 Blue Heron Objective

To protect the Great Blue Heron nesting grounds.

2.1.4.1 Areas Affected

The Great Blue Heron nest in the wet floodplain areas downstream of the B. C. Hydro bridge. The area consists of backwaters, ponds, heavy underbrush and few trails and hence, currently good habitat.

2.1.4.2 Background and Description

During the January 1981 Public Information Meeting and in subsequent correspondence from the Yarrow Ratepayers, concern was expressed for the nesting grounds and habitat of the Great Blue Heron.

No in-depth studies have been carried out by the Fish and Wildlife Branch to date, consequently specific nesting points or areas of concern cannot be pinpointed. Appendix VI provides the statistics gathered by the Canadian Wildlife Service for the Salwein Creek area.

Some of the area's main activities, both past and proposed, are walking, viewing and photography of natural features and wildlife. The retention of a group of Blue Heron is therefore highly desirable and is totally compatible with the plan's goal.

2.1.4.3 Implementation and Costs

Current proposals for the V.R.M.A. do not affect in any way the Blue Heron habitat areas. The main concern is that trails or other accesses do not come too near the nests or provide a means for vandalism. The current trail system does not cause a problem and as it will merely be maintained, no future problem is envisaged.

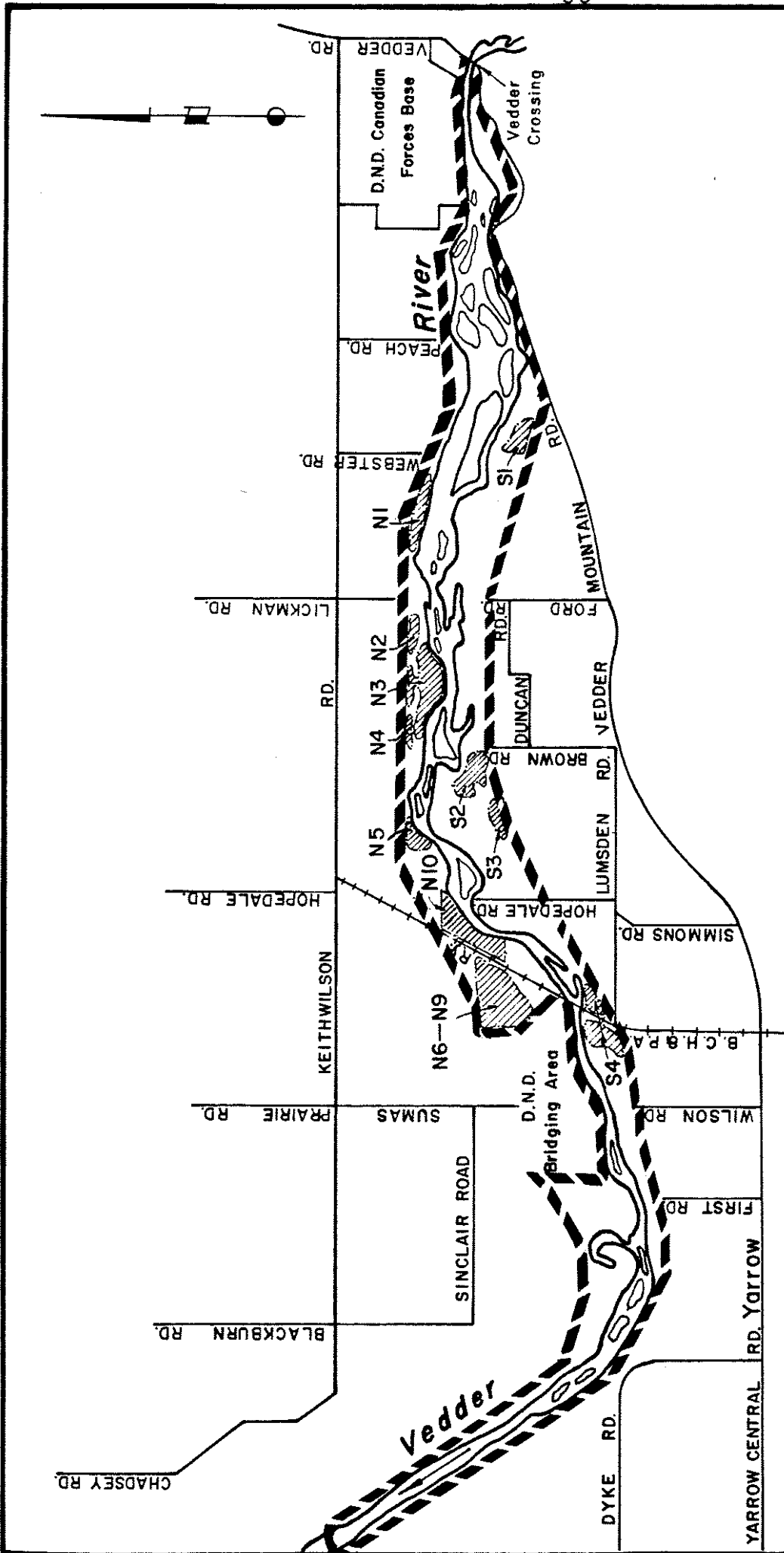
No Blue Heron related projects are currently planned and before any are, the Fish and Wildlife Branch must do a study of existing populations and habitat. Such a study would have a direct bearing on any future development in this particular area. There is no proposal to carry out the study in the 1983 fiscal year.

2.1.5 Agricultural Lease Objective

To lease parcels of land suitable for agriculture, for the purpose of haying and/or grazing only.

2.1.5.1 Areas Affected

All parcels of cleared land that provide a viable area, are suitable for either haying or grazing and have not been broken up by groynes or identified for a higher priority use will be leased. These parcels are shown on Fig. 6, and described in 2.1.5.2.



Vedder River Management Area Agriculture Leases

Management Area Boundary
Scale 1:31680 (1 inch to 1/2 mile)

Lease No.	Approx. Area (ha)	Lease No.	Approx. Area (ha)
S1	2.2	N7	2.0
S2	5.1	N8	2.4
S3	1.1	N9	2.1
S4	4.4	N10	4.6
N1	4.7		
N2	0.7		
N3	6.8		
N4	1.9		
N5	0.7		
N6	1.5		
		Total Area	40.2
		Agr. Leases	

Fig. 6

Somewhat more detail is provided in Appendix V, in two forms. The first is a letter report assembled by the District Agriculturist for the parcels originally leased in 1980. A map accompanies this report. The second is a map with notes pertaining to each area now to be leased. It was completed in October 1981, and the summary below refers to these blocks.

2.1.5.2 Background and Description

Prior to 1979, when dyke construction commenced, most cleared land now within the V.R.M.A. was used for some form of agriculture. The use ranged from the growing of raspberries to pasture land for cattle. Upon purchase by the District of Chilliwack of the land between the dykes, active farming ceased and the land began to return to a natural condition. Many of the local residents who were used to seeing this land in productive use and the government agencies who knew its capabilities, felt the land should continue to be farmed. As a result the V.R.M.C. made an interim decision in 1980, to lease the parcels, by public tender, on a calendar year basis.

The only uses compatible with the Management Plan goal and objectives are haying and grazing, as flooding of land under these uses would result in minimal damage as compared to say, raspberries. The only acceptable improvements are fences.

The areas are numbered by a prefix letter either "N" for north side of the river or "S" for the south side and a number beginning with the upstream parcel on either side. Hence, we have parcels "N1 to N10" on the north side and "S1 to S4" on the south side for a total of 13. The areas range from 0.4 ha for N2 to 9.3 ha for N3. All are suitable for haying and grazing and with some fencing and access work as well as grading and seeding, all will be capable of hay or forage production. Some conditions of leases to be imposed are outlined in Appendix V.

2.1.5.3 Implementation and Costs

As mentioned previously, all of the parcels were advertised for lease in 1980. Each year since 1980 the parcels have been offered to the leasee or re-advertised. The District of Chilliwack has handled the leasing in the past as they have been the landowners.

In 1983 the land ownership will be transferred to the Ministry of Environment and leasing arrangements for 1984 and subsequent years will be handled by the Ministry of Agriculture and Food, Property Management Branch. They will also act as agents for the Ministry of Environment with control and conditions of leases being the responsibility of the Management Committee. The Management Committee feels the Property Management Branch has the expertise and system in place to properly advertise, interview candidates and issue leases. Income from leases will be returned to The Provincial Consolidated Revenue Fund.

Costs of improvements such as fencing or access will be the responsibility of the lessee and hence, the Management Committee member agencies will have no direct cost involvement.

2.1.6 Related Land Objective

To cooperate with agencies having tenure over lands directly affected by the V.R.M.A.

2.1.6.1 Areas Affected

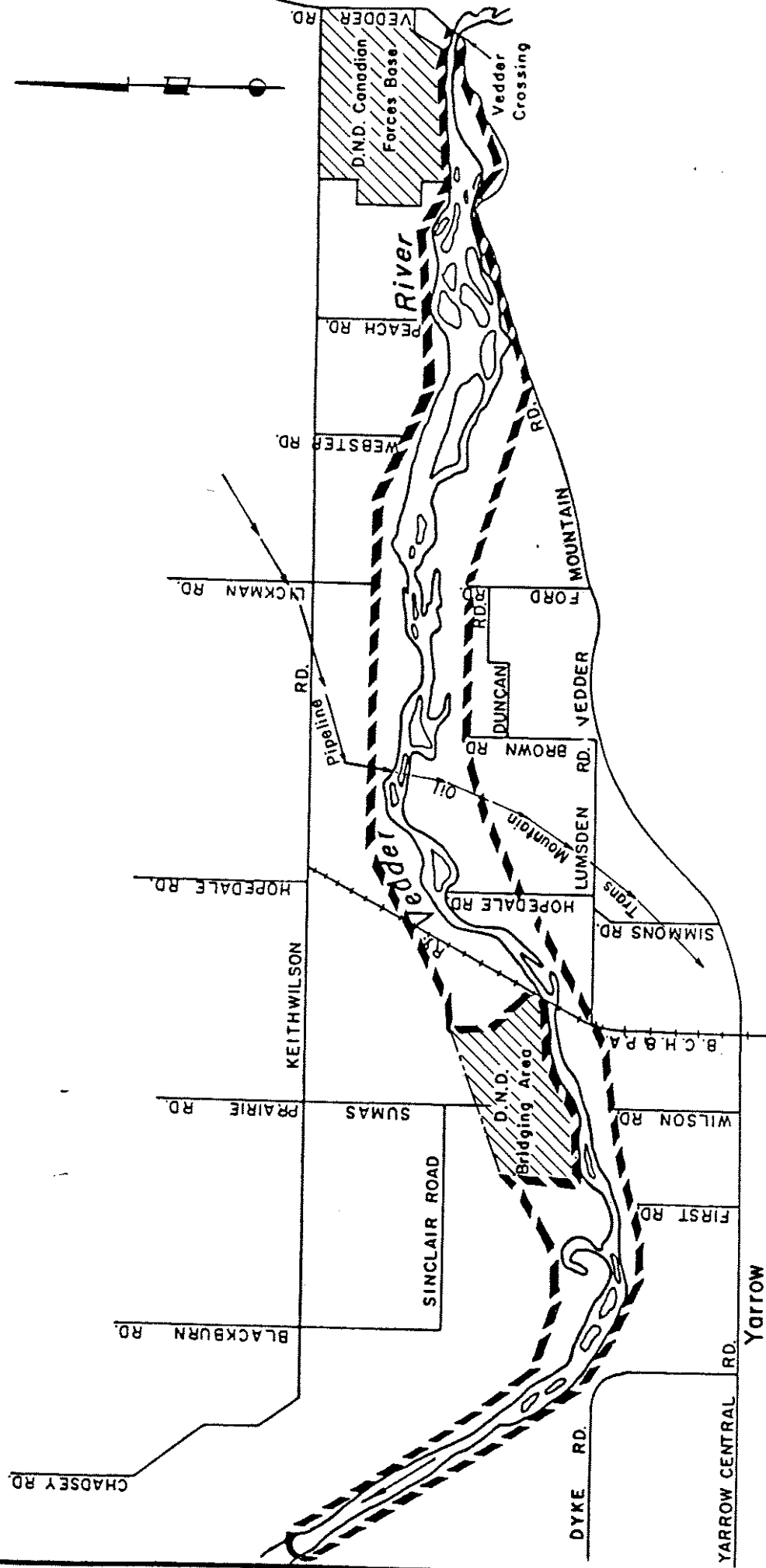
Figure 7 shows the three main areas affected:

- 1) Trans Mountain Oil Pipeline,
- 2) B.C. Hydro Railway,
- 3) Canadian Forces Base, Chilliwack camp and Wet Bridging area.

2.1.6.2 Background and Description




Decisions concerning any one of the three items in 2.1.6.1, in some way affect the V.R.M.A., hence must be an integral part of the management plan. Similar decisions within the V.R.M.A. may affect one of the three other areas.

- 1) The Trans Mountain Oil Pipeline is an important supply line from northern B. C. to Vancouver. Special considerations were made during construction of the dykes to ensure the pipeline's safety and continued operation.



Vedder River Management Area

Important Related Land Uses

- LEGEND**
-  D.N.D. Canadian Forces base & bridging area
 -  Trans Mountain oil pipeline
 -  B.C. H. & P.A. Railway

Management Area Boundary 

Scale 1:31680 (1 inch to 1/2 mile)

Fig. 7

In March 1980, the pipeline beneath the dyke location on the north side was excavated and replaced with a pipe of thicker cross section to enable the oil line to carry the superimposed load of the dyke. An isolation valve is located on the north side of the river but no such valve exists on the south side.

Consideration may be given to the possible installation of an isolation valve on the south side of the river, thus reducing the possible hazard in the case of a line break within the Management Area. In the case of a line break, close cooperation between the V.R.M.C. and Trans Mountain Oil Pipeline officials would be necessary to keep disturbance to the V.R.M.A. to a minimum.

- 2) The B. C. Hydro and Power Authority Railway grade formed a virtual dyke across the Management Area, with the only openings at the bridge and trestle. In order to provide some relief of pressure against the embankment and prevent excessive upstream ponding, a concrete overflow structure consisting of ten 8' by 8' precast conduits was installed by B. C. Hydro in September 1981. The cost was borne by the dyking program. The maintenance of the structure with respect to debris blockage, etc., will be the responsibility of the local authority. In event of a flood, the V.R.M.C. and B. C. Hydro and Power Authority will have to cooperate closely to ensure the quick safe release of water through the structure and hence, safety of the railway bed.

3) The Canadian Forces Base in Chilliwack has two facilities adjacent to the V.R.M.A. The base camp is on the north bank of the Vedder River just downstream of Vedder Crossing. The Wet Bridging Area is located outside the north dyke approximately 0.3 km downstream of the B. C. Hydro Railway.

Cooperation with the base may be necessary at times of flood emergency as well as during Management Area Planning to ensure agencies' activities do not conflict with each other.

2.1.6.3 Implementation and Costs

The cooperative effort has been implemented from the beginning of the flood control works design. All efforts to date have been successful and indications are that a similar attitude in the future will ensure the mutually agreeable resolution of matters of concern.

Costs to date for pipeline and railway grade work have been borne by the dyking program. Future works must be looked at specifically at the time, relative to costs and contracting. The cooperative planning involves little cost other than meetings and time.

2.2 Plan Implementation

Section 2.1 outlines, for particular objectives, who will be responsible and what the general guidelines are for implementation.

The Management Committee will continue to oversee the particular implementation programs from a monitoring point of view to ensure compliance with the overall area goal and objectives. The day to day activities and decisions by any one agency within the Management Area will not be supervised. There is no desire by the Committee to even imply there are attempts to interfere with the various agencies responsibilities and mandates.

As the land owner, however, the Ministry of Environment has agreed to use the interagency committee as a management vehicle.

Any deviations from the Plan or errors or omissions recognized in the Plan will be brought before the Committee and approved or rectified prior to implementation or any other actions being taken.

The approval process to be followed for the Plan will vary with each agency and their involvement in the area. The Ministry of Environment process will involve review at the Regional Director and Assistant Deputy Minister level at least. The Plan will also go before the Fraser River Joint Advisory Board to ensure compliance with their needs and stipulations regarding the operation of the floodway.

A similar process will occur for major alterations in direction in the Plan, however the Management Committee will deal with other amendments itself.

Once the Plan has received approval from Committee agencies it will be presented to the Public Advisory Committee for comment and then to a public information meeting in Yarrow. Any comments the Management Committee feels would substantially improve the Plan, will be included and the Plan implemented.

The timing of implementation of the particular objectives is dependent on agency budgets, construction of the dykes and other related works and the legal survey.

Implementation of objectives requiring some form of construction or alteration to the area's natural condition will be on a two phase program.

Phase I deals with the south side of the river and in particular the core area with the campground, amphitheatre, sports field and horse staging area. In addition, trails on this side of the river will be the first worked on. Leasing for all agricultural parcels on the north and south side will occur in Phase I.

Phase II will deal with the north side of the river once Phase I is complete. This should be in fiscal 1984. The types of improvements envisioned are trails, parking and possibly another overnight campground for people with horses and trailers. The District of Chilliwack has expressed an interest in such a facility, as an equestrian area is being developed at the Lickman Road/Highway I Interchange.

The Plan must remain dynamic hence new proposals for use of various parcels will be considered at any time based on their own merits and compliance with the basic concepts of the Management Area.

2.3 Conclusions and Recommendations

The Vedder River Management Committee recommends this plan be adopted and implemented. The objectives, responsible agencies and timing for Phase I are summarized in Fig. 8.

In order to achieve the Management Area goal to retain the floodway capacity, maintain and enhance the natural features of the area and provide recreational and agricultural opportunities, minimal capital improvements are recommended. Those that are, consist of low profile, rustic and low maintenance facilities.

The V.R.M.A. will be turned over to the Ministry of Environment by the District of Chilliwack when legal surveys are completed. The Ministry of Environment in turn will assign management planning and implementation of the area to an interagency committee (Vedder River Management Committee) chaired by the Regional Director or Regional Water Manager, Ministry of Environment. This will ensure the prime objective of maintaining floodway capacity is retained. Agency membership on the committee may vary somewhat from time to time, depending on specific resource interests and priorities.

The V.R.T.C. will be used to advise the Management Committee of field level technical matters. A Public Advisory Committee made up of groups with an interest in the management of the area and who have been approved by the V.R.M.C., will provide an important link between "government" and the public. They will assist the Management Committee by supplying background information and recommending a course of action.

In all, the Plan is designed to make the best use of the natural and enhanced features of the Vedder River area while recognizing the importance of flood control. The public who have an interest in the area are involved and a truly integrated-use plan developed. With continued coordination by the V.R.M.C. and the interest and involvement of the various agencies in their own particular fields, the Management Area should become a pleasant and worthwhile experience for all those who use it.

SUMMARY OF PHASE I DEVELOPMENT

<u>Objective</u>	<u>Responsible Agency</u>	<u>Implementation Timing</u>	<u>Remarks</u>
<p>To retain an overall 200 year floodway capacity as determined by Water Management Branch.</p> <p>To provide public recreational facilities</p>	<p>Supervised by Water Management Branch</p> <p>Capital works and maintenance in core area by District of Chilliwack. Projects of interest to a particular agency, responsibility to that agency.</p>	<p>Even years, July 15 - August 31, except in exceptional circumstances.</p> <p>As budgets permit. Camp-ground already underway. Sportsfield to begin in 1983.</p>	<p>Agency to use gravel depends on priority listing in Section 2.1.1.3</p>
<p>To maintain and enhance spawning and rearing capabilities in the main river tributaries and side channels.</p>	<p>Federal Fisheries and Oceans and Fish and Wildlife Branch.</p>	<p>As budgets and the flood control construction program allow.</p>	<p>Area of concern to Yarrow Ratepayers.</p>
<p>To protect the Great Blue Heron nesting grounds.</p>	<p>Fish and Wildlife Branch, indirectly V.R.M.C.</p>	<p>Ongoing Branch function. No planned study until at least 1984.</p>	<p>In meantime, District of Chilliwack will handle leasing.</p>
<p>To lease for haying/ grazing only, the 14 parcels identified on the Plan map.</p>	<p>- leasing arrangements by Ministry of Agriculture and Food - control and conditions by V.R.M.C.</p>	<p>Fiscal 1984, when legal survey is complete and land turned over to Ministry of Environment</p>	
<p>To cooperate with agencies having tenure over lands directly affected by the V.R.M.A.</p>	<p>V.R.M.C.</p>	<p>Ongoing</p>	

Bibliography

Environment, Ministry of. The Township of Chilliwack, Background Report, Vedder River Floodway Management Plan, 1979.

Fraser River Joint Advisory Board, Federal - Provincial. A Future for the Vedder River, 1978.

APPENDIX I

Correspondence Related to Management Plan

March 3, 1980

Mr. Norton H. James
Joint Advisory Board
Director of Water Planning and Operations
Inland Waters Directorate
Environment Canada
Ottawa, Ontario
K1A 0L7

Dear Mr. James:

Re: Vedder River Management Plan

Please find attached for your comment and/or approval a draft copy of proposed criteria to be stipulated by the Fraser River Joint Advisory Board as basic to the management plan to be developed for the Vedder River floodway.

You will recall it was agreed at our last meeting that the Board would ratify the management plan. With this in mind, it is considered prudent that we provide some direction to ensure the plan which evolves will be compatible with our concern and requirements. The attachment was prepared with this in mind.

We are anxious to proceed with the plan development as the need for early completion is becoming very apparent. It therefore would be appreciated if you would provide your comments at an early date.

Yours very truly,

(original signed by B. E. Marr)

B. E. Marr,
Deputy Minister of Environment

Enc.

cc: Mr. L. M. Clerk
Mr. R. C. Boyd
Mr. D. Hehn
Mr. L. Bonham

VEDDER RIVER MANAGEMENT AREA

Proposed Criteria to be Stipulated by the Fraser River Joint Advisory Board as Basic to the Management Plan for the Area

1. The ownership of the land shall be retained in perpetuity by the Crown Provincial and managed in a manner which recognizes the prime purpose for which it has been acquired. This prime purpose is to reduce flood damage in the area of the Vedder River fan and Sumas Prairie.
2. It is recognized and accepted that acquisition of this land should facilitate recreation and resource development opportunities and programs and that these should proceed through the development of a management plan.
3. Development of the area must recognize fully that the floodway between the dykes must be managed as such in accordance with the following:
 - (a) Construction of permanent structures and facilities subject to flood damage shall be avoided to the greatest extent possible and when such structures are erected within the area, these shall be flood-proofed. The extent of flood-proofing shall be determined by the floodplain development regulation policies of the Province except that projects funded with Federal monies shall meet Federal floodplain development policies where these exceed those of the Province.
 - (b) The flood carrying capacity of the floodway shall be maintained. This will necessitate gravel removal operations at irregular intervals. Maintenance of the river bank, groynes and setback dyke will be necessary as erosion of any of these flood protection structures occurs within the Management Area. Special measures to minimize adverse environmental impacts of these operations may be necessary. It is understood that costs associated with gravel removal or maintenance within the Management Area will be borne by participating agencies. Setback dyke and groyne maintenance will be the total responsibility of the District of Chilliwack.
4. Access to the Management Area for the purpose of emergency flood protection measures shall be granted should such a situation arise.

Government
of Canada

Gouvernement
du Canada

Fisheries
and Oceans

Pêches
et Océans

Fisheries - Pacific Region
1050 West Pender Street
Vancouver, B.C.
V6E 2P1

Pêches - Région du Pacifique
1090 rue West Pender
Vancouver (C.B.)
V6E 2P1

Your file / Votre référence

Our file / Notre référence

590-85-V20

March 14, 1980

Mr. B. Marr
Deputy Minister of Environment
Ministry of Environment
Parliament Buildings
Victoria, B.C.

Dear Mr. Marr:

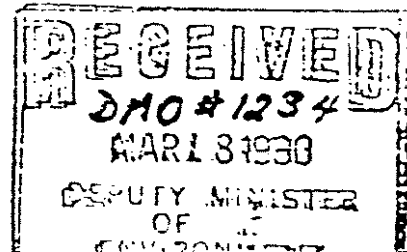
RE: Vedder River Management Plan

This will acknowledge your letter of March 3, 1980 concerning the subject.

With reference to Item 2 of the "Proposed Criteria" stipulated by the FRJAB for a Management Plan, I do not consider it appropriate to identify in this document specific Fisheries' opportunities that may be assessed. However, I suggest that the proposed management structure consisting of a Management Group and Technical Sub-Committee could be introduced in this Item and their general terms of reference outlined.

I would like to express some reservations about the statement contained in Item 3(b) which refers to responsibility for costs associated with gravel removal. It is my understanding that flood control maintenance is a District responsibility and that gravel removal required to maintain flood carrying capacity would be so classified. Clearly, however, the cost of maintenance (including gravel removal) which is associated with protection of recreational, fisheries or other resource development initiatives within the floodway should be the responsibility of the appropriate agency.

..... 2



Mr. B. Marr

-2-

March 14/80

In response to your request to identify Fisheries representatives to the Management and Technical groups, may I advise that Messrs. John Payne and John Mathers respectively will be so assigned.

Yours truly,



F.C. Boyd, Head
Habitat Protection Division
Resource Services Branch

FCB:pla

cc: J.C. Davis
A.F. Lill
F. Fraser
J. Payne

E.M. Clarke, Director
Inland Waters Directorate
1001 W. Pender St.
Vancouver, B.C.

N.H. James
Vice-Chairman, FRJAB
Director-General
Water Management
Environment Canada
Ottawa, Ont. K1A 0E7

cc: Mr. J. McCracken, Mar. 27/80

3.041

Your file / votre référence

Our file / Notre référence

RD-28-Chilliwack



Environment Canada / Environnement Canada

Environmental Management / Gestion de l'Environnement

Inland Waters Directorate
Pacific and Yukon Region
#502 - 1001 West Pender Street
Vancouver, B.C. V6E 2M9

April 21, 1980

Mr. B.E. Marr
Deputy Minister
Ministry of Environment
Parliament Buildings
VICTORIA, B.C.
V8V 1X5

WATER	TO THE BRANCH
REC'D	APR 30 1980
FILE #	0281550-007A
NO	DATE
JCF	May 2
EB	
REPLY	

Dear Mr. Marr:

Vedder River Management Plan

I have reviewed the material attached to your letter of March 3, 1980 on this subject, together with the reply from Mr. Boyd dated March 14, 1980 and from Mr. N.H. James dated March 24, 1980.

My only comment at this time is in regard to the last paragraph of the criteria. This should be modified to provide continued right of access for flood control purposes so that permission does not have to be sought for each case and arguments made to justify an "emergency". Adequate notice should be given to the Management Committee, when practicable, that flood control measures would be undertaken.

Yours sincerely,

E.M. Clark

E.M. Clark
Regional Director

c.c. Mr. N.H. James
Mr. F.C. Boyd

*Mr. Bennett:
Isn't the duty of access for maintenance to be retained by the Township?*

*ES
M.C. 25*

RECEIVED
DMO 1529
APR 22 1980
DEPT. OF ENVIRONMENT
VICTORIA



Environment
Canada

Environnement
Canada

Environmental
Management

Gestion
de l'environnement

Your file Votre référ.

Our file Notre référence

5.041

Ottawa, Ontario
K1A 0E7

MAR 24 1980

Mr. B.E. Marr
Chairman, Fraser River
Joint Advisory Board
Deputy Minister of Environment
Province of British Columbia
Parliament Buildings
Victoria, British Columbia
V8V 1X5

WATER	
REC'D: APR - 9 1980	
FILE NO: 0281550-CITA	
FILE	
JOS	APR 15
FW	
ENB	9/116
FILE	
REPLY	

Dear Mr. Marr:

Vedder Management Plan

This will acknowledge receipt of your letter of March 3, 1980 concerning this subject.

In general I agree with the proposed criteria except for 3(b). It was my understanding that all maintenance on projects was the responsibility of either the Province or some local authority but not of the federal government. I cannot, under the present Agreement, see how the federal government could be expected to share in maintenance costs.

Yours sincerely,

N.H. James
Director General
Inland Waters Directorate

cc: Mr. E.M. Clark
Mr. F.C. Boyd

*Mr. Fuller
File*

B 3141W

DMO #1339
APR 15 1980
INLAND WATERS
DIRECTORATE



Province of
British Columbia

Ministry of
the Environment

OFFICE OF THE
DEPUTY MINISTER

MEMORANDUM

To: Mr. D. Hehn
Regional Director
Lower Mainland Region
Ministry of Environment
15326 - 103 A. Avenue
Surrey, B.C. V3R 7A2

Date: March 3, 1980

Re: Vedder River Management Plan

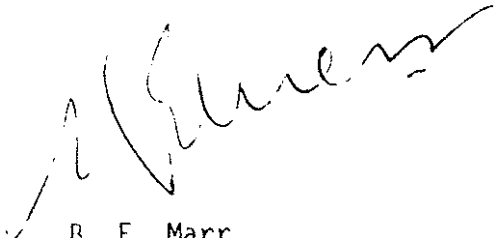
I believe, due to the rapid progress on the Vedder Setback Dyke construction program, that the time is now appropriate to initiate the Management Plan for this area.

A report entitled the "VEDDER RIVER FLOODWAY MANAGEMENT PLAN" was produced by Mr. E. Bonham, P.Eng., of this Ministry, in July, 1979. This report was circulated to those interested agencies who responded with comments on the Management Plan concept. These comments will, I am sure, serve as a useful starting point for discussions at the Management Group level.

I attach for your information the presently proposed structure organization chart which may well require modification once the Management Plan evolves. You may decide at your discretion that additions or deletions from the Group may be necessary in light of the interest or lack of interest expressed in the Plan.

I believe it would be appropriate for you to meet with the Assistant Deputy Minister, Mr. G. Simmons, prior to calling the first meeting of the Management Group in order that you may benefit from the background of this project to date.

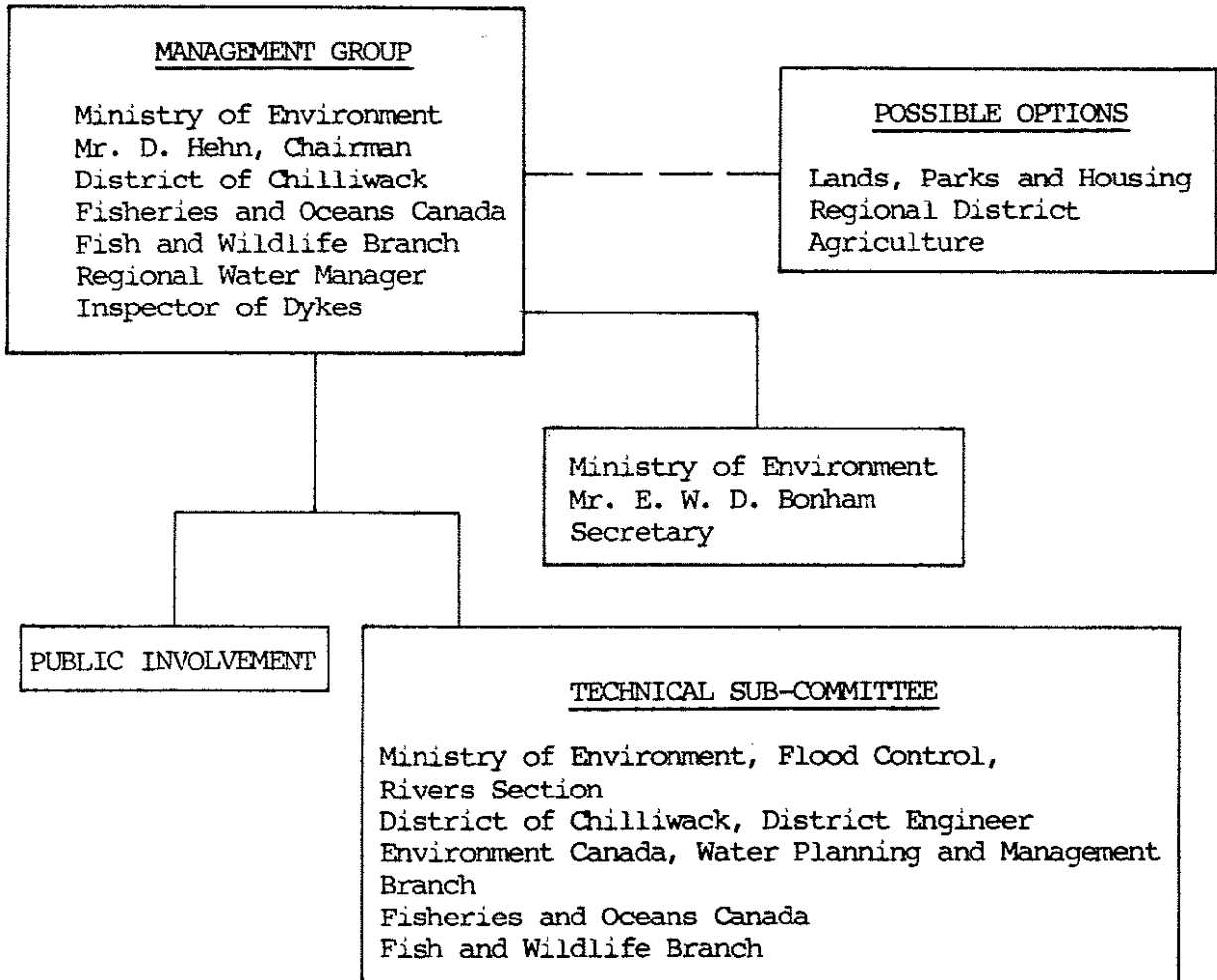
Under separate cover, I have sent letters to the District of Chilliwack, Fisheries and Oceans Canada, and the Inspector of Dykes requesting their representation on the Management Group. With regard to the Fish and Wildlife Branch representative, I will leave this selection from your Region to your discretion.


B. E. Marr,
Deputy Minister of Environment

cc: Mr. E. Anthony
Mr. E. Bonham

VEDDER RIVER MANAGEMENT PLAN

MANAGEMENT STRUCTURE



DATED:

A G R E E M E N T

BETWEEN:

THE GOVERNMENT OF THE PROVINCE OF
BRITISH COLUMBIA, as represented
by the Minister of Environment,

OF THE FIRST PART

AND:

THE CORPORATION OF THE TOWNSHIP
OF CHILLIWACK,

OF THE SECOND PART

Ministry of the Attorney-General

9. The Local Authority shall take over, assume responsibility for, operate and maintain in good order and repair the works as any clearly divisible portion thereof is completed. For the purposes of this paragraph a "clearly divisible portion thereof" shall mean either or both of:
- (a) the dyke and its groynes on the north side of the Vedder River,
 - (b) the dyke and its groynes on the south side of the Vedder River.
10. The Local Authority shall, forthwith following completion of the preparation of the legal survey or legal surveys referred to in paragraph 2. of this agreement, execute and deliver to the Province such document or documents as is or are required to enable title to the Management Area (as that term is defined in paragraph 1.(d)(ii) of this agreement) to be registered in the name of Her Majesty the Queen in Right of the Province.
11. The Province will, initially, reimburse the Local Authority for eighty-eight percent (88%) of the costs incurred by the Local Authority in complying with the provisions of paragraph 6 of this agreement, including interest and all other administrative costs directly related to compliance by the Local Authority with the provisions of said paragraph 6, and the Province and the Local Authority will, following completion of the preparation of the legal survey or legal surveys referred to in paragraph 2 of this agreement, adjust the aforesaid reimbursement so that the same is directly proportionate to the area that the Management Area (as that term is defined in paragraph 1.(d)(ii) of this agreement) bears to the aggregate area of:
- (a) the Management Area (as that term is defined in paragraph 1.(d)(ii) of this agreement) and,
 - (b) the Rights of Way (as that term is defined in paragraph 1.(c)(ii) of this agreement).

12. The Province will initiate steps for the development of the Management Plan for the Management Area with the Local Authority and with those Federal agencies having responsibilities with respect to the Management Area and taking into account the interests of the public at large in the future utilization of the Management Area.
13. The Local Authority will participate in the development and in the operation of the Management Plan and will provide such access to the Management Area through, upon and over the works and the Rights of Way (as that term is defined in paragraph 1.(c)(ii) of this agreement) as is required for the use, operation and maintenance of the Management Area under and pursuant to the Management Plan.
14. If any question of the interpretation of this agreement or of the performance by the Province or by the Local Authority of any of their respective obligations under this agreement arises or where no express or only partial or imperfect provision has been made in this agreement, the question or matter shall be referred to a single arbitrator appointed pursuant to the "Arbitration Act" and the award of such arbitrator with respect to any such reference shall be final and binding on the Province and on the Local Authority.
15. This agreement shall extend to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF the Honourable K. Rafe Mair, Minister of Environment, has hereunto set his hand on behalf of the Province, and the Corporate Seal of The Corporation of the Township of Chilliwack has hereunto been affixed in the presence of

, Mayor, and

, Municipal Clerk,

.../7

APPENDIX II

Gravel Removal Guidelines

APPENDIX III

Recreational Study



Lower Mainland Region
1610 Indian River Drive
North Vancouver, B.C.
V7G 1L3

81-10-21

J. W. McCracken
Regional Manager
Water Management Branch
Ministry of Environment
Lower Mainland Region
10334 - 152A Street
Surrey B.C.
V3R 7P8

RECEIVED

OCT 21 1981

MINISTRY OF ENVIRONMENT
LOWER MAINLAND REGION
FILE NO

Dear Mr. McCracken:

Re: Vedder River Management Committee

Enclosed is the background information and recreation concept for the Management Area. The background places the concept in the proper context and is necessary to fully understand the proposal thus its inclusion.

I hope this will be of some help.

Yours truly,

Greg Chin
Planning Technician
Lower Mainland Region

GC/slc

VEDDER RIVER MANAGEMENT AREA: RECREATION STUDY

Introduction: The floodway development and management on the Vedder River, while providing flood control, also presents the possibility of other compatible land uses, including recreation. The riverine and adjacent land environment has a tremendous potential for providing a variety of recreational opportunities to the local residents and visitors while respecting the flood control requirements.

In 1981, the Ministry of Environment asked the Lower Mainland Region of the Parks and Outdoor Recreation Division to study the recreation potential of the Vedder River Management Area (Figure 1) in relation to other resource uses.

Historical Background:

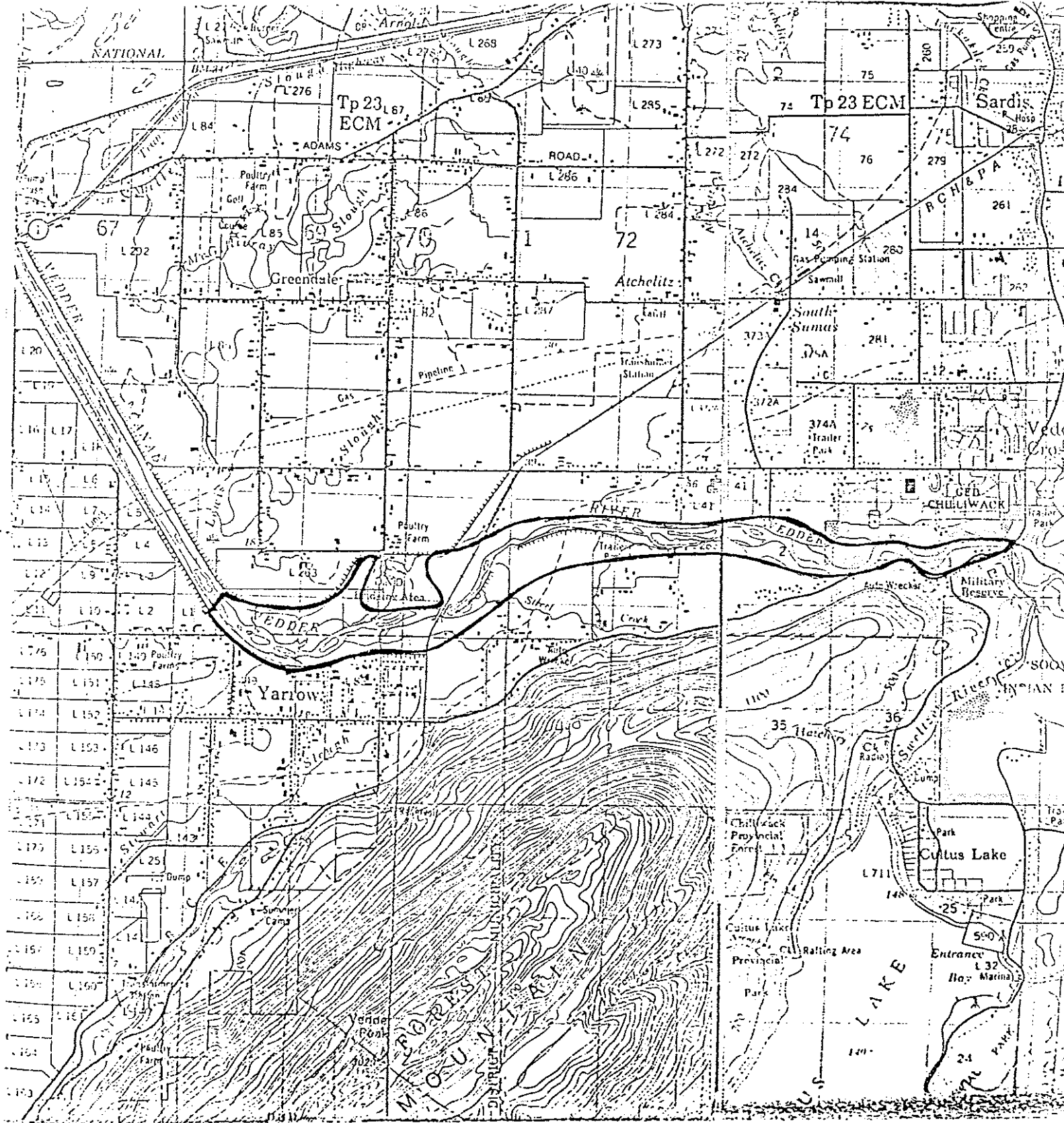
The Vedder River has always been an integral part of community life in Yarrow. Since the time of the first Indian inhabitants, the diverse and abundant plant and animal life in and around the river has been an invaluable source of food, sustaining man and animals.

In its early history, the Vedder was originally a small flowing stream called Bruce Creek. During the spring run-off of 1876, the unusually high water level of the nearby Chilliwack River caused it to over-top its banks and flow in a different direction following Bruce Creek. Efforts to route the river back into its original channel failed and the new channel became permanent. This section of the river was later renamed Vedder after the Voelkert family who settled near Bruce Creek in 1862.

Construction of the original dyke along the Vedder occurred between 1919 and 1923 as part of a massive land reclamation project of Sumas Lake. A system of dykes, ditches, dams and pumps were created to drain the lake and control the river. These efforts resulted in creating 7,000 acres of rich farm land. Recently, the Vedder River overtopped its banks once again (1975) resulting in substantial damage. This led to a flood control study and the formation of a multi-agency management committee to deal with the planning issues of the river.

VEDDER RIVER MANAGEMENT AREA

(Figure 1)



Existing
Features:

The two major land types that are characteristic of the features in the management are wet woodland and farm fields. Small spawning creeks that either have the capability to be improved or have been improved for salmonid enhancements flow through much of the woodland. Further improvements are planned including a wintering sanctuary for juvenile-rearing salmonids at a scour hole near the B. C. Hydro Bridge. A variety of waterfowl and small animals inhabit the area including Beavers and Great Blue Herons. The vegetation is typical of a pioneer plant ecology with poplar and alder dominating an understory of blackberry.

The agricultural land has been mainly used for pasture, but offers the greatest variety of possibilities for recreational development. There are a number of old vacant farm buildings scattered throughout the management area in various states of repair but none seemed suitable for any recreational purposes.

The River has good fishing opportunities with chum, coho and cutthroat trout frequenting the area. The banks and bars provide good access and numerous areas to fish from. The extreme cold of the river prohibits any water contact activities, except possibly, limited contact during the warm summer months.

Existing
Recreation
Use:

The existing recreational use is centered around the campground and the community hall area. These two areas have traditionally been the major access points to the existing trails along the river and have generated activities themselves. The community hall site has tennis courts, a playground while the campground has a small shuffleboard and small grass areas for games. Fishing has been a long time favourite use along with horseback riding. Inner tube rafting has become increasingly popular and will be an important use for future consideration.

Regional
Recreation

Perspective: Within the region are a number of other recreational areas that offer a variety of recreational opportunities to both local residents and visitors alike. The two largest areas are Cultus Lake Provincial Park and the International Ridge Recreation Area. Cultus is approximately 656 hectares, containing 326 campsites, parking for 600 cars and 10 kilometers of hiking trails while the International Ridge Recreation Area covers over 2,000 hectares, containing over 10 kilometers of hiking trails. In the immediate vicinity of the Vedder River, there are two designated B. C. Centennial Trails (hiking and bicycling) that generally follow the Fraser Valley. Down river by Sumas Mountain is the McGillivray Creek Game Reserve which protects wetland habitat for a variety of birds including a large Great Blue Heron Colony.

Demand: The District of Chilliwack has expressed a need for more sportsfield space, especially soccer fields. This is evident in the District's Parks and Recreation Master Plan (1980) which indicated a high priority for athletic parks. Input from the public substantiates these needs as well as the need for trails and a nature program. It is anticipated by the District that demands for specific recreation such as archery, moto cross and bicycling will increase and should be considered for the future. The inherent qualities of the management area and the overall goals to preserve these qualities, limits the provision for many of the recreational needs required in the District, however, the urgent need for a soccer field can be satisfied in the management area and be compatible with the surrounding environment and other uses.

Concept: The concept behind the proposed is to develop an informal, relaxing, land-based recreational corridor, oriented toward an attractive water feature. Because of the sensitive nature of the river environment, a low-impact or "soft" development approach has been taken to maximize natural areas and minimize man made features.

To reduce maintenance costs, the recreation concept will be relatively self sustaining. Development will be limited to providing access and to creating distinct nodes of recreational opportunities. It is a true multiple use proposal incorporating recreational needs, fisheries, flood control, wildlife, agricultural and aesthetic interests.

Recommendations: The following recommendations have been made with consideration to enhance the existing natural features while incorporating where possible new and historic uses and education programs.

Activity Nodes: Two activity centres will be created, one between Ford and Brown Roads, the other at the Community Hall. The Brown/Ford Road development will include the campground sportsfield and horse staging area. Activities at the Community Hall are well established and would have only minor improvements made.

FORD/BROWN ROAD

The Sportsfield is located in an existing gravel storage area. The site is readily developable and has good access from the Road. The site permits both local residents and campers to use the field and the water and toilet facilities of the campground. In the adjacent pasture fields, ample parking and future expansion is possible.

The horse-staging area would require little or no development except for a convenient drop-off with a horse unloading ramp. Trailer parking can be accommodated with the sportsfield parking in oversized parking stalls. This location offers good access to the dyke trail and room for expansion. The potential to develop a horse rental outlet is a future possibility that would be a positive feature for the campground and the general area.

The retention of the campground will encourage all users to enjoy the river's amenities for a longer stay than a day. A nature program, for both the campers and the community would be focused around an outdoor amphitheatre seating approximately 50 - 75 people. It would have the dual function of being a demonstration space as well as an assemble point for nature walks. The location of the amphitheatre, situated in the middle of the major interpretation areas, is convenient to campers with a small parking lot nearby for local residents.

COMMUNITY HALL

The Community Hall although outside the Management Area, is the focus of several day use activities. It is expected to continue in that capacity with no new activities proposed except greater trailhead use once trails become established.

Access and Parking:

Six access points are recommended as appropriate places to park and gain access to the trails. Information facilities will be provided at each access.

- 1) At the COMMUNITY HALL, the existing parking will act as trailhead parking.
- 2) WILSON ROAD is an access point presently used to load inner tube/canoes, etc., back onto vehicles after a trip down the Vedder. Required parking for trailhead access would be 5 cars.
- 3) BROWN ROAD would provide access to the sports field, horse staging area, trails and the Vedder River. There is plenty of room to expand all facilities for future use. Requires capacity 10 - 20 cars and 5 trailers.
- 4) FORD ROAD presently provides access to the campground and would provide parking (10 cars) for non-campers to participate in nature programs.
- 5) THE RAILWAY ROAD running parallel to the Railway on the north side of the river, would provide access for fishermen (5 cars max.).
- 6) LICKMAN ROAD would serve as trailhead parking for fishermen (5 cars max.).

To discourage vehicle access of the dykes at the proposed access points, fixed and removable bollards should be considered. Trail use of the dyke would not be hindered and emergency and maintenance vehicles would be able to remove barriers and gain access.

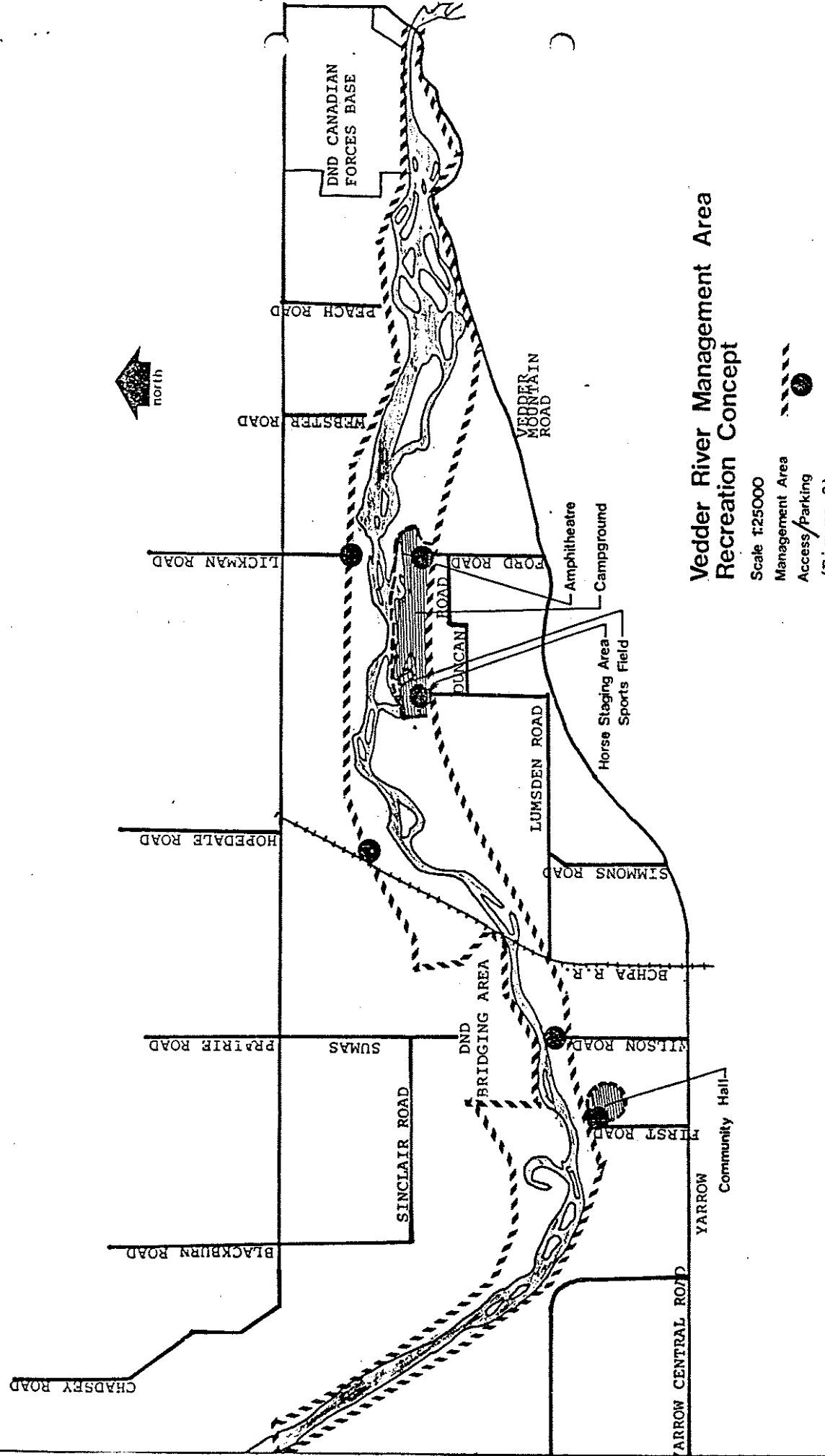
Trail
Development:

Some trail development will be required to improve the existing dyke and river trails, to link the system. A trail through the nature areas should be left as a future possibility until the intrinsic value of the areas is set by the users. Horse use of the trails would be limited to the south dyke with connections to Vedder River Road forming a loop system. Trail development on the north bank should remain unstructured until the future use of the area is decided upon.

With the expected increase in use as a result of the proposed development it is recommended to have several emergency water safety stations along both river banks. This would consist of a life saver and reaching pole. First aid should also be made available at the campground and the Community Hall, with location reference made on directional signs and maps.

Information/
Signs:

An Information Signing system should be established to direct visitors to trails and use areas as well as regulate use. Entrance signs, information boards and directional maps should be erected at all access points and directional signs should be located at the main road junctions. As part of the interpretation program, information and displays are recommended outlining the natural and historic features of the area.



Vedder River Management Area Recreation Concept

Scale 1:25000

Management Area

Access/Parking

(Figure 2)

APPENDIX IV

Fisheries Resource Information

VEDDER RIVER MANAGEMENT AREA

Natural Enhancement Opportunities for Steelhead and Cutthroat Trout

November, 1980

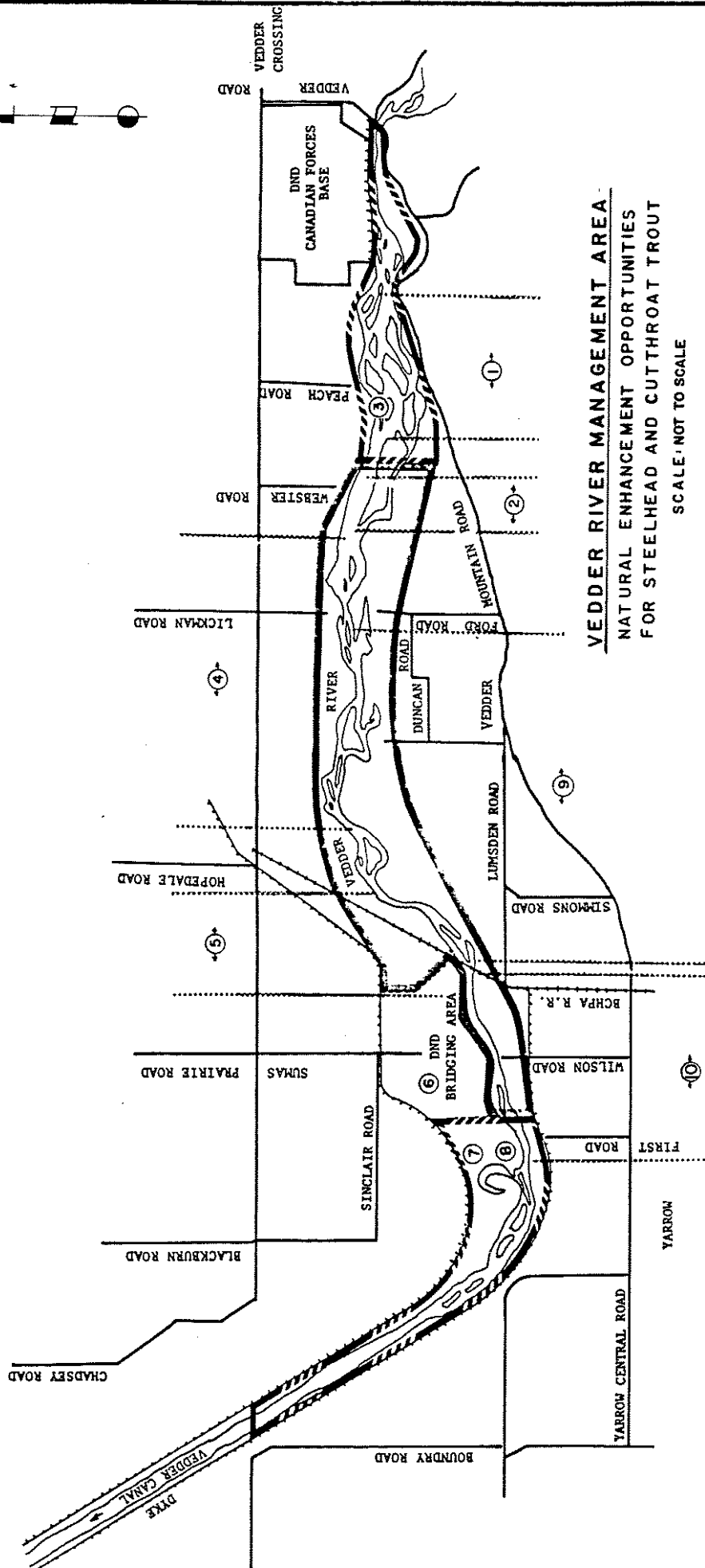
Station #	Site	Present Value and Condition	Enhancement Possibilities
6	Salwein Creek (includes small tributary and wet bridging area)	Best cutthroat stream on lower reaches of Vedder River; also a good coho producer; presently utilized to rear steelhead juveniles in pens in the wet bridging pond	Continue to utilize wet bridging pond for pen rearing of steelhead; consider rearing of cutthroat
7	Side slough (west of wet bridging area)	Not explored as yet	Improve fish access; spawning and rearing habitat development
8	Side channel (north bank of Vedder, west of wet bridging area)	Utilized by a few cutthroat trout, chum, and coho salmon mainly for spawning; rearing minimal due to drying in summer	Augment flows during summer months
9	Hopedale side channel complex (this is a series of small channels; includes Little Hopedale Creek and one other tributary)	A few steelhead spawn; good habitat for cutthroat and some salmon	Introduce more water to augment present low summer flows
10	Side channel (in vicinity of Willson Road on south side of river near Yarrow)	Unknown at present	Improve fish access; augment summer flows

VEDDER RIVER MANAGEMENT AREA

Natural Enhancement Opportunities for Steelhead and Cutthroat Trout

November, 1980

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10	Side channel (in vicinity of Wilson Road on south side of river near Yarrow)	Unknown at present	Improve fish access; augment summer flows



VEDDER RIVER MANAGEMENT AREA
 NATURAL ENHANCEMENT OPPORTUNITIES
 FOR STEELHEAD AND CUTTHROAT TROUT
 SCALE: NOT TO SCALE

- AREA "A" AREA BETWEEN SETBACK DYKES
- - - PROPOSED ADDITION TO AREA "A" TO FORM VEDDER RIVER MANAGEMENT AREA

December 29, 1981

Department of Fisheries and Oceans

Enhancement potential of the Vedder River in the area between the setback dykes.

The following list of projects, based on field reconnaissance over the past several years, defines the Department's current interests in the area. Additional opportunities may be recognized later with the advent of new enhancement technologies. It should be noted that the projects described involve natural enhancement techniques on small, stable, groundwater fed tributaries of the Vedder and not in the mainstem Vedder itself where periodic freshets would nullify any enhancement efforts. These small tributaries are presently protected from freshets by the existing bankside dykes, but the planned removal of the armouring from these dykes will affect the stability of some of the tributary areas. Thus some work will be delayed until new flow regimes have become established.

Hopedale Creek - Street Creek system

These two small streams, each about 2 km in length, join together in their lower reaches, discharging into the Vedder immediately above the B.C. Hydro Railway Bridge on the left (south) bank. Hopedale drains an undeveloped, heavily wooded area and above Hopedale Road, consists of a series of swamps formed by beaver dams. Street Creek has a well-defined channel, fringed by a narrow green strip, and in all but the lowest section flows through farm land. Salmonids utilizing the two streams are chum, coho and cutthroat. Stream improvement work involving channel excavation and gravel placement was carried out in the lower reaches of Hopedale in 1977 and 1978 to create new spawning beds for chum salmon in a groundwater upwelling area. Small numbers of coho also used the spawning beds. Additional work aimed at correcting flow problems in the improved section was completed in October of 1980.

Tentative future plans call for channel modifications and spawning gravel placement on lower Street Creek downstream of the new dyke alignment. This would add substantially to the chum production potential of this system. Improvement work may also include a silt trap at the top of the improved section to help maintain gravel quality; low-level, intermittently-spaced wood wiers to control water depth and channel gradient; and stabilization of stream banks with rip-rap or large cobbles.

Peach Creek

This is another small groundwater-fed tributary utilized by chum, coho, and possibly cutthroat. The source is a series of shallow ponds near Peach Road. It discharges into the Vedder on the right bank through twin culverts penetrating the bank dyke at the terminus of Lickman Road. The stream closely parallels the dyke along its entire 3/4 km length. At present it is of questionable fisheries value since all but the lowest few hundred metres goes dry during low-flow periods in the Vedder River. This may result in the loss of chum and coho spawn, and the isolation and stranding of cutthroat and coho juveniles.

Stream improvement work could convert what appears now to be a liability into an asset. Excavation of the existing channel to a depth below the lowest groundwater level would augment and maintain flow in the channel. Other channel improvements are being considered similar to those proposed for Street Creek. Survey work and groundwater monitoring was begun in 1981.

Barrett Creek

Barrett Creek, about 2 km in length, is similar in size, flow and in general description to Street Creek. The largest of two headwater forks originates a short distance east of Lickman Road. The stream discharges

into the Vedder through an opening in the right bank dyke about 1 km above the B.C. Hydro Bridge. Chum, coho and probably cutthroat utilize the system. Stream improvement work consisting of channel excavation and gravel placement was carried out in 1978 in a small side channel spur near the stream outlet. Dam building in lower reaches by persistent beavers has frequently hindered spawner access to this small system.

Work planned for Barrett Creek would be aimed primarily at chum enhancement and would be similar to that described for Street Creek. In all chum projects of this type, priority is placed on developing lower reaches of streams in order to reduce the migration distance and therefore the severity of predation on downstream migrant fry by coho smolts and other resident predator fish species.

APPENDIX V

Agricultural Lease Information

Agriculture Lease General Conditions

1. Leases may only be used for haying and/or grazing purposes.
2. There shall be no structural improvements (eg. buildings), made to leases with the exception of the installation of fences where necessary, which will be at the expense of the lessee and will be deemed to be the property of the lessee. On expiration or abandonment of the lease, the lessee must remove the fences, after receiving Management Committee approval, or the ownership of the fences will revert to the Ministry of Environment.
3. Maintenance of fences and control of animals shall be the responsibility of the lessee.
4. The control of noxious weeds will be the responsibility of the lessee.
5. Leases only include existing cleared land. There shall be no tree cutting or brush clearing.
6. Leases shall have a maximum 5 year term, renewable on application by the lessee and approval of the V.R.M.C.
7. Leases not renewed shall be advertised.
8. The general conditions of lease are a guide only and may be amended or expanded on at any time. Leases on individual parcels will be more specific and may contain additional conditions.

Report on the agricultural potential of the lands within the setback dykes for the Vedder River Management Technical Sub-Committee.

Prepared by T.J. Dever, District Agriculturist, Chilliwack

There are nine parcels offered for lease in the Vedder River Management area. The following is information gathered during visits to each of the leases.

Parcel 1 - This parcel is about 47 acres in size.

Current condition - pastureland, in need of more intensive management. This area is bounded by the existing dyke on the south and by a creek, brambles, and the setback dyke on the east and north. There is a poor condition 3-wire cross fence that separates the area into two parcels (one of 15 acres and one of 30 acres). Of the entire area, about 30 acres would be usable for grazing purposes. Forage species are present, but competition from weeds is serious. Fencing is not adequate to confine grazing animals.

Parcel 2 - This parcel is 5 acres and has a barn on it.

Current condition - This area is used for grazing, and appears to be fair pasture. The area is well fenced at present. Most of the area, except that occupied by the buildings is usable.

Parcel 3 - This parcel is 8.6 acres.

Current condition - This land is being used for grazing. It appears to be in good condition, showing good grass growth. The property is well fenced, but its usable area is reduced by a gravelled drive, paved barnyard and 1600 square foot barn. Some cross fencing is also present on this property. Fencing is wood 1" x 6".

Parcel 4 - This parcel is 6.4 acres.

Current condition - This is currently being used for pasturing horses. Pasture is well established and would require no improvements. The area is well fenced with a 6 strand barbed wire fence. A good condition hip-roof barn with cement floor is on the property as well.

Parcel 5 - This parcel is 7 acres in size.

Current condition - The area is cross fenced into four parcels, and is currently being used for grazing animals. The pasture is well established and in relatively good condition. There are some old farm buildings and reasonably sound fences on this property.

Parcel 6 - Not included in advertisement. It is about 4 acres in size.

Current condition - Currently shows good grass growth, but has little fencing other than some peripheral wooden fencing.

Parcel 7 - Advertised as parcel 6, is approximately 35 acres in size, but of these only 10 acres are currently usable for grazing.

Current condition - This area looks like it has been ploughed a couple of years ago. The furrows are still evident. There is a predominant growth of native clovers and weeds throughout this area, and no established forage grasses. This area is currently of doubtful value for grazing and/or haying. Unusable areas are heavily treed and/or encompass a salmon enhancement area.

Parcel 8 - Advertised as parcel 7. Parcel is approximately 30 acres. Of this area, approximately 20 acres are usable for grazing and/or haying.

Current condition - This area is partially cleared, with treed areas along the north side of the property and along the west side of the middle of the property. The parcel is divided in two by a good fence with the area lying north of the fence currently being used for grazing purposes. The area south of the fence, along the setback dyke is not fenced. It shows relatively good growth of pasture species and some weed infestation.

Parcel 9 - Advertised as parcel 8. This parcel is approximately 19 acres in total. Of this only 7 or 8 acres are usable (i.e. cleared, or free from other constraints).

Current condition - The last use for a portion of this area was for growing brussel sprouts. No pasture species have been seeded in this area. Consequently, native clovers and weeds predominate in this area. There is a 3 or 4 acre cleared area near the old dyke on the northern portion of this parcel. This area is not very productive but appears to have been seeded to grass at one time. There are no good fences on this property. A meandering creek isolates a portion of the lease area from the main body of the lease.

Lease parcels with reasonable agricultural productivity for haying or grazing without requiring improvement include:

Parcel 1 - Advertised area for lease should be reduced due to natural obstacles which are present, i.e. creek, bush.

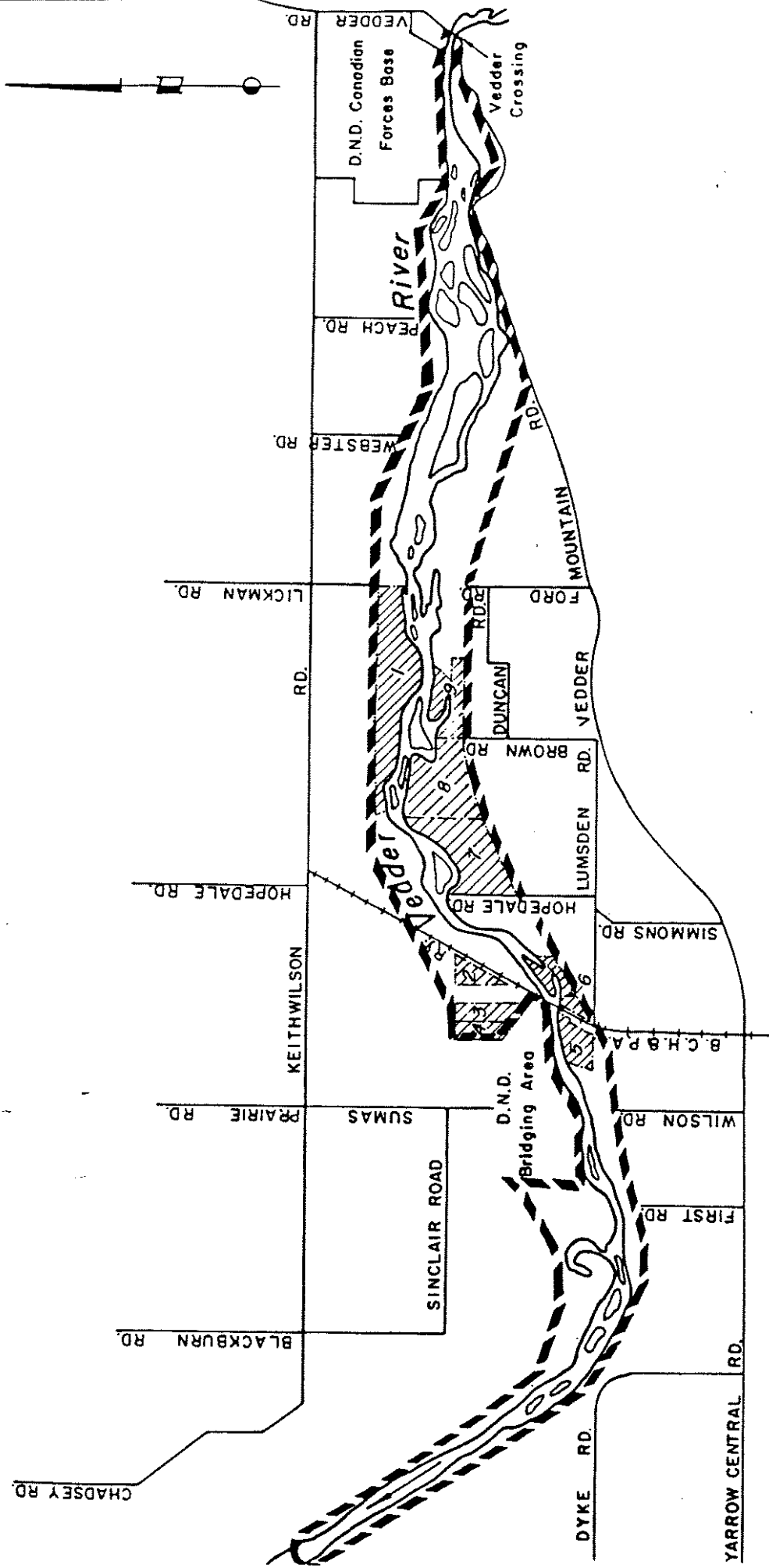
Parcel 2 - O.K.

Parcel 3 - O.K.

Parcel 4 - O.K.

Parcel 5 - O.K.

Parcel 6 - Due to a problem in the advertisement "for lease", the actual parcel 6 was omitted. It's value is O.K. for haying, at least.



Vedder River Management Area 1980/81 Agriculture Leases

Management Area Boundary 
 Scale 1:31680 (1 inch to 1/2 mile)


Legend
 Agriculture Lease

Fig.

Field Assessment of 1982 Agriculture Leases
by T. Dever, District Agriculturalist

Area numbers refer to Fig. 6, page 80.

- Area N1 - Approximately 0.7 acres
- 2 wire fence along inside of old dyke
 - Debris piles on property
 - Piles of topsoil along river side of new dyke

Requires:

- Fencing for grazing
- Topsoil spreading and reseeding for hayland
- Debris clearing

- Area N2 - Approximately 1 to 2 acres
- Fence along south edge
 - Has been grazed
 - Topsoil piles along dyke
 - Originally included in same lease as Area N3.

- Area N3 - Currently leased
- Used for hay or silage production
 - Appears very productive
 - Not fenced
 - Approximately 23 acres

- Area N4 - 3 to 4 usable acres
- Topsoil piles along dyke
 - Suitable for grazing
 - Originally included in Area N3
 - Not fenced
 - Access off dyke

- Area N5 - 3 to 4 acres
- Grassland
 - Not fenced
 - Next to Hooge Gravel Storage

Area N6 - Will be leased in 1982
Fenced

Areas N7, N8, N9 - Currently leased
- Used for grazing or hayland
- Fenced

Area S1 - No fences
- 3 to 4 acres
- Access from dyke
- Suitable for grazing, haying
- Some logs and debris

Area S2 - Approximately 15 acres
- Being used for horse grazing
- Partially fenced
- Access from Browne Road
- Suitable for haying, grazing

Area S3 - 2 to 3 acres
- Some fencing
- Good grass growth

Area S4 - Approximately 10 acres
- Suitable for haying and/or grazing
- Some old buildings to be removed
- Parts have been grazed this year

APPENDIX VI

Great Blue Heron Survey

CHILLIWACK-SALWEIN

YEAR	TOTAL NEST NO.	OCCUP. NEST NO.	MEAN FLEDG. NO.	SURVEY DATE	NEST TREE SPECIES	LONGITUDE AND LATITUDE	SOURCE
1976	50+	-	-		northern black cottonwood	49.06 N; 122.03W	BCNRS
1977	96	88	2.62 (n=34)	23 June	" (n=19)	"	K. Simpson
1978	101	-	-	"	"	"	"
1979	110	109	-	-	northern black cottonwood (n=20)	"	"
1980	104	91	2.63 (n=43)	19 June	"	"	L. S. Forbes

The colony site was on the wet-bridging area at the Canadian Armed Forces Base near Chilliwack. The large increase in the number of nesting pairs of herons in 1977 may represent herons displaced from the Chilliwack-McGillivray colony in that year. In 1979 a pair of Great Horned Owls nested in the colony without causing nesting failure of the colony. The understory in the colony was very thick, consisting primarily of salmonberry, stinging nettle, blackberry and willow. In 1977 and 1978 the nest height was from 24 to 30 m.

* Source Great Blue Heron Colonies in B.C.
Unpublished Report of Canadian
Wildlife Service.