

RE: FRASER RIVER ESTUARY MANAGEMENT PROGRAM

ACTING MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendations of the Director Planning & Building Inspection be adopted.

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TO: MUNICIPAL MANAGER 1982 DECEMBER 15

FROM: DIRECTOR PLANNING & BUILDING INSPECTION Our File: 15.660

SUBJECT: FRASER RIVER ESTUARY MANAGEMENT PROGRAM

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RECOMMENDATIONS:

1. THAT a copy of this report be forwarded to:  
  
J.D. Wiebe,  
Director, Environmental Assessment  
and Planning,  
Environment Canada  
Room 903, 1001 W. Pender St.  
Vancouver, B.C. V6E 2M7
2. THAT Council support the continued preparation and refinement of a management system for the Fraser River Estuary to provide a clearly defined process for implementing the basic objective of integrating the needs of a growing population and economy into a managed estuary while respecting its environmental qualities.
3. THAT Council advise the Review Committee that the Big Bend Development Plan provides for the effective and comprehensive management of Burnaby lands within the estuary by designating lands for industry, agriculture, public open space and residential use.

INTRODUCTION:

The Municipality has been requested to provide comment on the management program which has been proposed to guide the future use of the Fraser River Estuary. This comment will be forwarded to a Federal-Provincial Review Committee which has been established to co-ordinate this process and to recommend an implementation strategy to the Federal and Provincial Environment Ministers.

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The management program proposals are contained in report form under the following titles:

1. A Living River By The Door - a proposed management program for the Fraser River Estuary.
2. A Linked Management System Proposal.
3. Legal Provisions for Linked Management.
4. Referrals Systems Presently Used in the Fraser River Estuary Core Area.
5. The Information System Report.
6. Report of the Area Designation Task Force (2 volumes).
7. Results of Public Involvement.

This information is quite voluminous and is available for review in the Planning and Building Inspection Department by interested parties. Due to the size and scope of this information the staff review which follows is somewhat parochial and concentrates on the relationship of the study proposals to our development and land use objectives abutting the North Arm of the Fraser River as embodied in the Big Bend Development Plan.

ANALYSIS:

To facilitate this review the following outline of the elements of the management program which are considered to be relevant to the Municipality has been provided and questions posed (in italics) that are likely to be of concern. Staff response to these items has been provided in each instance.

Part 1, Vision:

A picture of what the estuary should be like in ten or twenty years from now, combining the aspirations and knowledge of participants in public workshops and leaders of government agencies and user groups.

*Is there anything you would change or add to make the vision coincide with your view of the estuary?*

Essentially their view of the estuary is one where the costs and benefits of multiple use are in balance. The key aspect being the evolution of a flexible, co-operative management plan providing for the establishment of competing uses which recognize the integrity and authority of an overriding purpose. Once the goals of compatibility of uses, protection of habitat and access to the river are clearly defined, provision needs to be made for sound decision making, for constant monitoring and for a constant flow of information.

In our view this vision should be supported. Within Burnaby land use adjacent to the Fraser River is guided by the adopted Big Bend Development Plan which is attached as Figure 1. This plan reflects the needs of varied interests by designating areas for industry, agriculture, public open space and residential use. The balanced character of this plan, therefore, is evidence that uses can co-exist within the context of a managed estuary system.

Part 2, Policies:

A common set of goals and objectives to guide decision-making by government agencies that regulate the estuary. Policies address the major issues related to:

- Water Quality
- Land Use and Transportation
- Habitat
- Recreation

*Do you agree with the goals and objectives in each of the four policy areas?*

The basic objective of the study is to determine how and to what extent the needs of a growing population, economy and industry can be accommodated while maintaining the quality of the estuary's natural resources and preventing further deterioration. To accomplish this purpose one should, in developing a Fraser River Estuary Management Plan, integrate the needs of the economy with those of the estuary's ecosystem by respecting environmental management principles.

The goals and objectives are quite comprehensive and difficult to summarize. Therefore, they have been attached as Appendices A-F.

Although the goals and objectives are not currently agency policy, once adopted by member agencies, they will serve as a general guide to planning and decision making in the estuary as well as providing specific direction to the development of activity programs and area plans.

In reviewing the four policy areas we note that the stated policies for each area are quite comprehensive and adequately address the component sections. It will be necessary, however, to recognize that it will be difficult to integrate the various policies in the preparation and implementation of a management plan. Nonetheless, we believe that these goals and objectives merit support as the basis for a refined management system.

*If you agree, would your agency adopt the proposed goals and objectives as a basis for decision-making? How would your agency do this?*

Staff can support the adoption, in principle, of these policies to guide the preparation of a management system. We could not, at this juncture, recommend their adoption as the basis for decision making until such time as we have had an opportunity to review how they are reflected in the proposed land use plans which will be developed by the Fraser River Estuary Study for Burnaby's Big Bend Area.

Part 3, Issues and Trends:

The major issues and trends that will affect the estuary over the next twenty years have been identified through consultation with agencies and the public.

*Have the issues and trends relating to your agency's interest been adequately described?*

The reports identify issues and concerns from a broad spectrum of groups from the public, specific users and government agencies. Local governments are generally noted as wanting greater involvement in guiding decisions by Federal and Provincial agencies which affect upland use. It is felt that Municipal Councils should be consulted and their staff involved in estuary planning, decision making and implementation. Decisions affecting land use, resource management and major developments should consider official community plans and regional plans and also be assessed to reduce local impacts.

In the early stages of the study process staff was concerned that long standing policies on land use could be pre-empted. However, as work proceeded, an effective liaison was maintained and it became evident that Burnaby's pre-planning of the Big Bend Area would be recognized and incorporated in the management proposals. Nonetheless, it is essential that the Municipality maintain jurisdiction for implementing land use objectives in the upland areas of the Big Bend.

It was also noted that improved public recreation access points are needed, but municipalities lack funds to acquire them. As a general statement this may apply to other jurisdictions. However, Burnaby has been relatively successful in providing public access to the river. Approximately 50% of the foreshore lands are designated for park use and of this area, approximately 60% is under Municipal ownership. The remaining lands are under the ownership of the Canadian National Railway and will be obtained through a land exchange.

It is noted that municipalities support high water quality standards but feel that they lack the authority to maintain water quality in tributaries and drainage ditches. In addition, there is concern over the costs to local governments of programs for secondary treatment and source control. Lack of acceptable sites for municipal landfills is also a growing problem.

A section of the "Trends in the Changing Estuary" is devoted to water quality. It is noted that steps have been taken to improve water quality including primary treatment of municipal sewage, requiring of permits for major discharges to the river, and improved enforcement of pollution standards. Despite this progress, significant tasks remain. These include control of toxic wastes, upgrading of sewage treatment plants and improved enforcement of pollution standards. The costs of various programs for enhancing water quality could exceed \$100 million and, therefore, while it is desirable to endorse the trend towards an improved water quality, it must be stated that the costs for such programs need to be carefully assessed and appropriate funding arranged from senior governments.

Economic trends indicate that industry is becoming increasingly tied to road and rail transport rather than to water access. It is noted that proposals to set aside areas for water oriented industrial development have been considered but not implemented. In the Big Bend Area the development guidelines provide for the establishment of specific sites for water oriented industrial activities reflecting the desired balance with general industrial activities. Therefore, this trend is being adequately addressed.

The report notes habitat loss through large scale developments and cumulative effects of foreshore alteration remains a major concern in the estuary. Therefore, for future major economic developments it will be necessary to evaluate whether or not the economic and social benefits outweigh losses to biological productivity, whether or not habitat losses can be adequately compensated for, and whether or not it is necessary to locate the project in the estuary.

Recreation is a major regional asset in the estuary and demand will increase with future population growth. Funding will be a major challenge and it is noted that a pool of funds is needed for local and regional governments to take advantage of purchase opportunities as they arise.

In summary, the issues and trends as identified are supportable as general statements providing that it is recognized that the municipalities must retain an on-going involvement in matters relating to the implementation of land use objectives. Improvements in recreation opportunities and water quality improvements will require substantial funding from other levels of government.

Part 4, Management System:

A linked management system has been proposed, consisting of committees for planning and representation, lead agencies for implementation, and special processes to improve information and communication.

*Do you think the linked management system, as proposed, would provide an organizational basis for coordinating management of the estuary?*

The major elements of this system are combined in the organizational measures proposed as follows:

A MANAGEMENT PROGRAM designed to provide a set of common goals and action plans between governments, government agencies, and user interests;

A POLICY COMMITTEE to provide linkage between governments, estuary committees, and government agencies;

A KEY AGENCY GROUP to provide focus for cooperation between the major government agencies and to organize implementation of a management program;

A PROGRAM COMMITTEE to provide an ongoing context for planning and for representation of user interests;

A SET OF LEAD AGENCIES to undertake a lead role in implementing common estuary policies;

STREAMLINING AND RATIONALIZING EXISTING PROCEDURES AND PROGRAMS OF AGENCIES to prepare the ground for a management program;

A PARTICIPATION PROCESS to involve government agencies, user interests and others in estuary planning;

A COORDINATED REFERRALS AND IMPACT ASSESSMENT PROCESS to link interagency decision making procedures in reference to specific projects;

A FRASER ESTUARY INFORMATION SYSTEM to encourage information exchange among agencies and with the public.

Staff supports the establishment of a recognized, clearly defined management system which will result in a format for ensuring the actions of environmental and economic interests are adequately addressed in processing development approvals.

The linked management system is proposed to address the following challenges:

- a) Agree on policy, goals and objectives.
- b) Simplify government administration
- c) Manage money, people, resources effectively
- d) Ensure that all agencies are accountable to the management program.
- e) Provide useful and accurate information.

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*Do you think the linked management system will be effective in addressing these challenges?*

The format of the linked management system appears relatively complex as it continues to involve a large number of agencies. Its effectiveness will be determined, in part, on the agencies' ability to further streamline or refine the development approval processes. Therefore, as the system evolves and is put into practice, it should be reviewed and simplified where possible.

*Should your agency participate in the linked management system?*

- (a) as a key agency member of the Program Committee?*
- (b) as a lead agency for implementation?*
- (c) as a participant in: a coordinated referral system?  
a coordinated monitoring system?  
a coordinated information system?*
- (d) as a participant in the planning activities of the management program: activity programs? area plans?  
area designation?*
- (e) in some other role?*

Inasmuch as the Municipality has the statutory authority over matters involving land use it is essential that Burnaby become a Lead Agency in the Big Bend Area and that portion of the North Arm of the Fraser River which is within Municipal boundaries.

Representation should also be made on an ad hoc basis as required in the planning activities of the management program; activity programs; area plans and area designation within Burnaby.

Once the coordinated referral process is established the Municipality would certainly play a key role in interfacing with developers. This aspect would result from the Lead Agency function and presumably the Municipality would forward the application with our comments to other agencies as required.

*A variety of approaches have been proposed to involve user and public interests in the management system. Do you think these approaches would be effective?*

The proposals put forward to invoke interest appear thorough. For example, the linked management system itself provides for agency and user involvement through direct participation at the various levels. Public meetings are also proposed to discuss estuary plans and issues and guidelines are to be prepared for public participation. The proposed referral system would ensure that affected agencies are afforded an opportunity to comment on applications. An estuary information system is proposed which is recommended to provide library services; contact and referral services to identify whom to contact for what information or service; coordinated research and monitoring; public education and assistance; and the employment of new technological advances to make information available.

*In what manner would your agency participate in public involvement?*

Staff has participated in public workshops as a resource for matters relating directly to Burnaby and we would expect to continue this function. If Council felt there was merit in utilizing Information Burnaby to apprise residents of the Fraser River Estuary Study, its objectives and the opportunity for public involvement, an article could be prepared in concert with the study group.

Part 5, Estuary Programs, Plans and Designations:

The Planning activities of the management program will be implemented through a number of activity programs, plans and designations. Activity programs and area plans have not yet been developed. A draft area designation map has been produced.

1. ACTIVITY PROGRAMS

Seven estuary-wide activities which require special programs have been identified:

- Port and Terminal Development
- Navigation and Marine Traffic
- Dredging, Dyking and Drainage
- Waste Management
- Log Storage and Handling
- Habitat Enhancement
- Recreation Development

- additional programs have been proposed for fisheries management and water-oriented industry and others may be required in the future.

Each of these activities involves more than one level of government. Outlines for activity programs have been proposed for further development by working groups consisting of agencies and users.

These programs would deal with estuary-wide issues and as such, would not require a major involvement by the Municipality as the Greater Vancouver Regional District would more appropriately represent the regional viewpoint. Certainly as these programs are developed there may be a demonstrated need for direct involvement in matters such as the waste management, recreation and water-oriented industrial programs. In these situations we are confident that an opportunity would be available to address these and other issues.

2. AREA PLANS

Land use plans are proposed to address site specific concerns in six areas throughout the estuary:

- Boundary/Semiahmoo Bays
- Delta Front
- North Fraser
- Lower Fraser Main Arm
- Upper Fraser Main Arm
- Pitt River

These plans would be similar to conventional land use plans and as such would be prepared and administered by agencies having statutory authority for the areas concerned.

*Should your agency take leadership in preparing plans for the area(s) in which you have statutory responsibility for the resources or land base? For which areas?*

As noted previously, it is essential that the Municipality assume a key role in the preparation of the plan for the North Arm of the Fraser River within Municipal boundaries.

3. AREA DESIGNATIONS

Area designation provides a guide to the best use of the estuary based on the estuary's natural attributes and its suitability for human activities. A Second Draft Area Designation Map has been prepared by an interagency group to serve as a guideline for the preparation of area plans and activity programs.

*Do you disagree with any of the designations?*

*Do you have any suggestions for designating any of the "undetermined use" areas?*

*If there is agreement, would your agency use the area designations as a basis for guiding your planning activities? If so, how would your agency do this?*

The second draft area designation map is not itself intended to be regulatory. However, if the map is accepted by key agencies in the estuary and incorporated into their plans, it could be implemented through the regulatory agencies, i.e. the Municipality and the North Fraser Harbour Commission, and others.

Staff has participated in a number of workshops of the Area Designation Task Force which have resulted in amendments to the area designation map to ensure its compatibility with the adopted Big Bend Development Plan. The area designations are shown on the attached Figure 2. Council will note that two areas have been designated as Undetermined Use. This designation means that agreement on the designated use has not been reached.

The most westerly of these areas lies in the vicinity of Wheaton Street on the bend in river. The undetermined use designation has been established in recognition of the existence of a particular stand of trees and vegetation which has been identified as a song-bird habitat. Staff has some difficulty with the justification for the retention of this treed area and the preclusion of industrial development. Therefore, we have advised the Area Designation Task Force that we are prepared to recognize the retention of this designation on the understanding that it implies that consultative approval will be required prior to development approval. Conceivably, a mutually satisfactory design solution could be evolved which retains the foreshore portions of the existing vegetation while permitting the industrial use of the balance of the area.

The second undetermined use area is between Willard Street and Meadow Avenue. The staff position has been that this area is zoned industrially and as the upland area is totally occupied by industrial uses, the appropriate designation would be industrial. A number of environmental agencies expressed concern over the effects of development and log storage on the effect of the foreshore marsh area. Their position was that the area should be designated as conservation.

It was agreed by the Area Designation Task Force that this area would be designated Undetermined Use pending further discussions between Municipal staff and the Federal Department of Fisheries and Oceans. Subsequently an agreement, in principle, was reached whereby both parties would support the Undetermined Use designation on the understanding that this area could be developed industrially providing measures are employed to protect the intertidal marsh. These measures would include the placement of wharves in deep water and the execution of agreements to not connect log booms with the land at low water.



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The retention of the Undetermined Use designation will permit a review of the mitigative measures by the affected agencies.

CONCLUSION:

The proposal to establish a "linked management program" to co-ordinate planning, implementation and act as a resource for information on activities within the estuary must be viewed as a positive step. Once the program has been refined it should be of benefit to all interests as it is intended to be a flexible, co-operative process which respects and balances the needs of competing users.

The Municipality has maintained an involvement throughout the study process and will continue to be involved in the implementation of the study objectives. Our concerns have been adequately addressed to date and the land use objectives embodied in the Big Bend Development Plan have been recognized and supported.



A.L. Parr  
DIRECTOR PLANNING &  
BUILDING INSPECTION

PB/js

# Big Bend Development Plan

- Commercial
- Institutional
- General Agriculture
- Small Holdings
- Market Gardens
- Park
- Industrial
- Residential

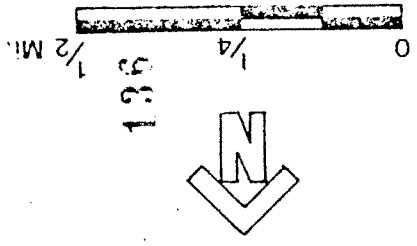
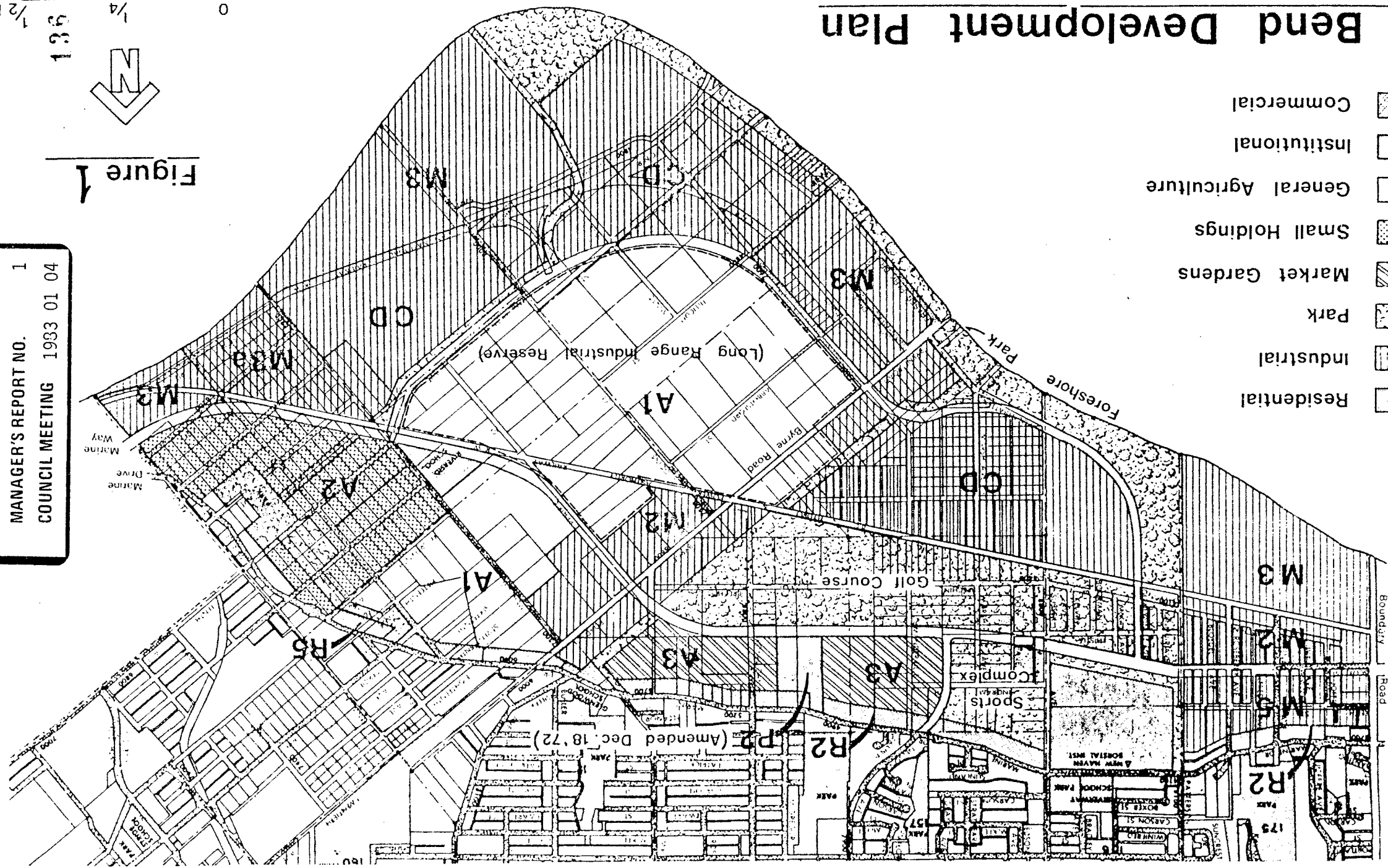
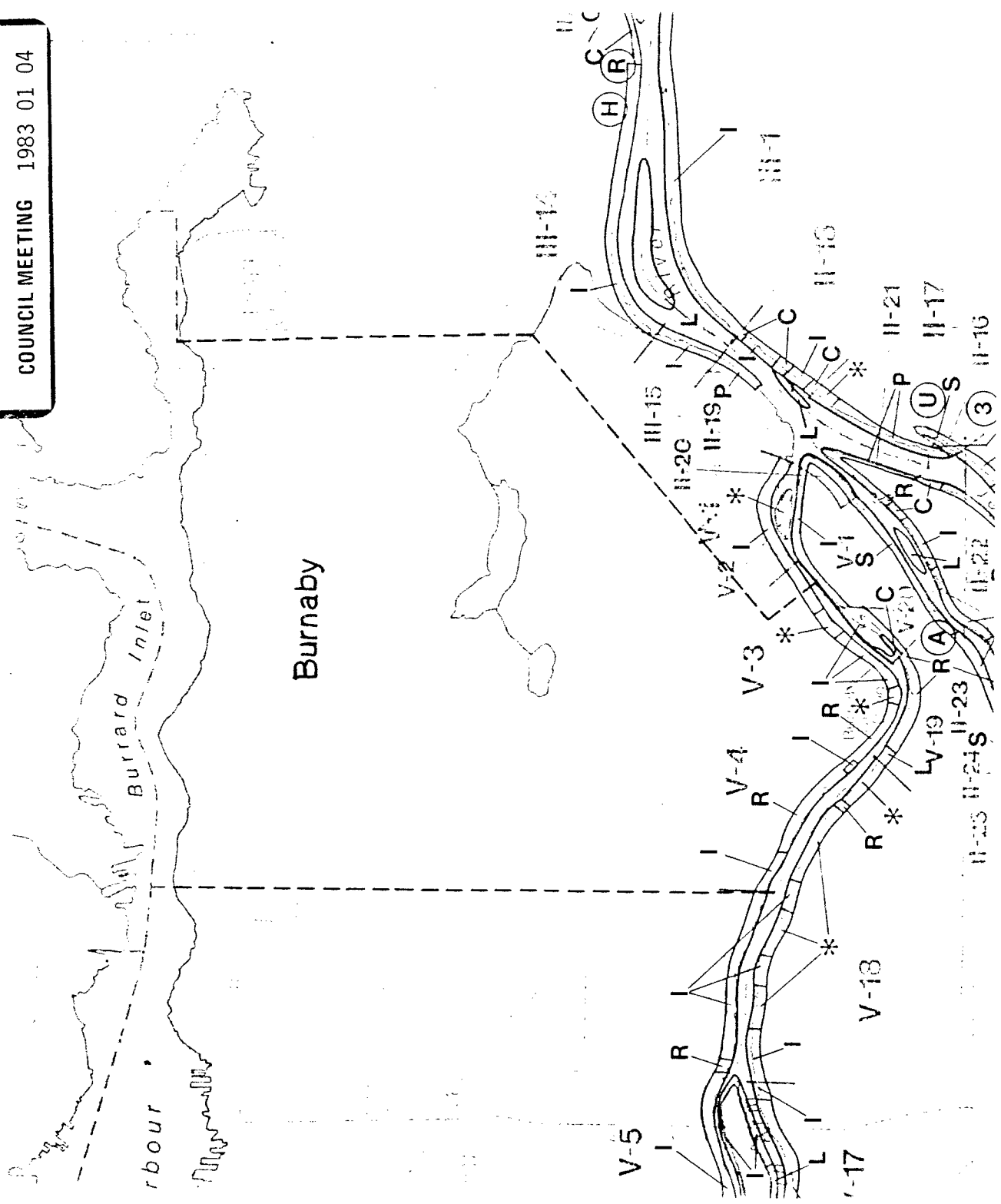


Figure 1

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DEFINITIONS FOR AREA DESIGNATION CATEGORIES

- \* UNDETERMINED USE - areas where agreement on designated use has not been reached. Undetermined use areas may be used for existing legal use but any change will require consultation and approval may be deferred.
- I INDUSTRY - areas required for industrial access to the water. Industrial areas may be used for log dumping, sorting and storage, moorage and piling and dolphin installation.
- R PARK/RECREATION - areas owned or under long-term lease for public recreation use including federal, provincial, regional and municipal parks; and areas which contain significant recreational assets which must be protected. Park/Recreation areas may be used for parks and recreation uses, agriculture and conservation, and for other uses compatible with recreation.

APPENDIX A**LAND USE AND TRANSPORTATION  
GOALS AND OBJECTIVES**

- Economic Importance**
  - That the importance of the estuary as a economic resource be recognized and that economic opportunities compatible with other estuarine uses be identified and acted upon.
- Forest Industry**
  - That planning for the estuary recognize that importance of the forest industry to the economy of the region and province.
- Agriculture**
  - That the continued agricultural use of high capability farmlands adjacent to the estuary be encouraged and that provincial and regional policies and objectives for farmland be recognized and linked with other activities through Activity and Area Planning.
- Historic Uses**
  - That estuary management policies not unduly restrict or make the continuation of historic use of log storage areas, water oriented industrial areas, and port sites in the estuary uneconomic.
- Designations**
  - That further water oriented industrial, urban and port expansion be encouraged to locate first in areas designated for development.
- Upland Linkage**
  - That plans for land use and transportation in the estuary be linked with the land use plans of responsible agencies on the upland, including municipalities and regional districts, to ensure that the estuary management program and local, regional, and provincial plans are compatible.
- Port Development**
  - That the policies of the Official Regional Plan and the Fraser River Harbour Commission Plan and the Fraser River Harbour Commission Plan to set aside, develop, and service suitable port-industrial areas be endorsed and supported by the plans of other agencies.
  - That it be recognized that areas for port development in the estuary region are best allocated on the basis of site suitability and within the framework of the west coast ports strategy.
- Port Planning**
  - That planning be based on a twenty year time horizon, with sufficient port industrial sites available to meet demand for that use for five years, subject to the ultimate carrying capacity of the estuary.
- Carrying Capacity**
  - That a suitability study be completed within five years to determine the ultimate carrying capacity of the estuary to support port and industrial development.
- Water-oriented Industry**
  - That further steps be taken to protect suitable areas for water-oriented industrial development from encroachment by other uses which may constrain conversion to ultimate water-oriented industrial use.
- Industrial Services**
  - That steps be taken to ensure that areas suitable for water-oriented industry and port development are provided with necessary backup land, access, and servicing, and that areas so designated remain available for those purposes.
- Mitigation**
  - That development of suitable sites be based on environmental management principles to mitigate on-site and off-site impacts on estuarine biophysical resources to the fullest extent possible.
- Water Access**
  - That industrial development on the wetted foreshore be restricted to those areas that require water access.
- Future Uses**
  - That planning for future uses of the estuary consider the need for the use to be located in the estuary, site suitability, evaluation of alternative suitable sites, impacts on estuarine biophysical resources, and demand for expansion of the use in the estuary.

APPENDIX B

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• That areas used for water-oriented industry and port development have the following characteristics: adequate obtainable draught, sufficient developable backup land on the upland site of the dyke, road or rail access, low capability for habitat and recreation, good flushing characteristics, and compatibility with principles of safe navigation.

**Site Characteristics**

• That alteration to the foreshore and riparian vegetation on the water side of the dyking system be minimized and restricted to provision of water access or bank protection, and that certain uses receive full impact assessment, depending on the nature of the use, the potential for offsite impacts, and the resource assets of the site.

**Foreshore Alteration**

• That proposals for change of existing uses, such as the reduction of log storage or additional occupation or alteration of the foreshore, be assessed to determine economic, environmental and social impacts.

**Impact Assessments**

• That the headlines of necessary transportation corridors in the estuary be defined and protected from encroachment by activities which impede navigation.

**Water Corridors**

• That land based transportation and utility corridors be located on the water side of the existing dyking system only where assessments have been completed showing that the environmental costs and impacts on other uses are less than they would be for an upland alternative.

**Land Corridors**

• That where developments were proposed within hazard prone areas (flooding, erosion, severe wind or wave action, landslide, poor foundation soils), these developments should be designed to offset potential hazards.

**Flooding**

• That land use developments recognize the floodplain policies of the Federal and Provincial governments and that foreshore developments be designed to avoid reducing the effectiveness of dykes and other flood control works.

**Hazard Areas**

**WATER QUALITY GOALS AND OBJECTIVES**

• That ambient water quality in the Fraser River and estuary be suitable for preservation of fisheries and wildlife.

**Water Quality Goals**

• That ambient water quality in the Fraser River be suitable for irrigation of crops.

• That ambient water quality in the outer estuary and Boundary Bay be suitable for water contact-recreation where water-contact recreation takes place.

• That ambient water quality objectives to accomplish the above goals be agreed upon as a basis for assessing the water quality and health of the Fraser estuary waters.

**Water Quality Objectives**

• That these objectives be stated in terms of the livability of the environment for organisms.

**Water Quality Standards**

• That these objectives also recognize the special local requirements of sub-areas including the main channels, side channels and back eddies, and Roberts Bank, Sturgeon Bank and Boundary Bay.

**Special Areas**

• That water quality in the Fraser River Estuary not be allowed to deteriorate significantly, and that acceptable water quality be restored where significant deterioration has already occurred.

**Restoration**

• That extreme caution be exercised on any increase in loading of persistent and cumulative toxicants.

**Toxicants**

**Runoff** • That regulatory decisions reflect consideration of non-point as well as point sources subject to permit.

**Use Locations** • That care be taken to ensure that water quality in tributaries and poorly flushed areas is not depleted through improper location of outfalls, log booms, marinas, agriculture and urban runoff, and other activities.

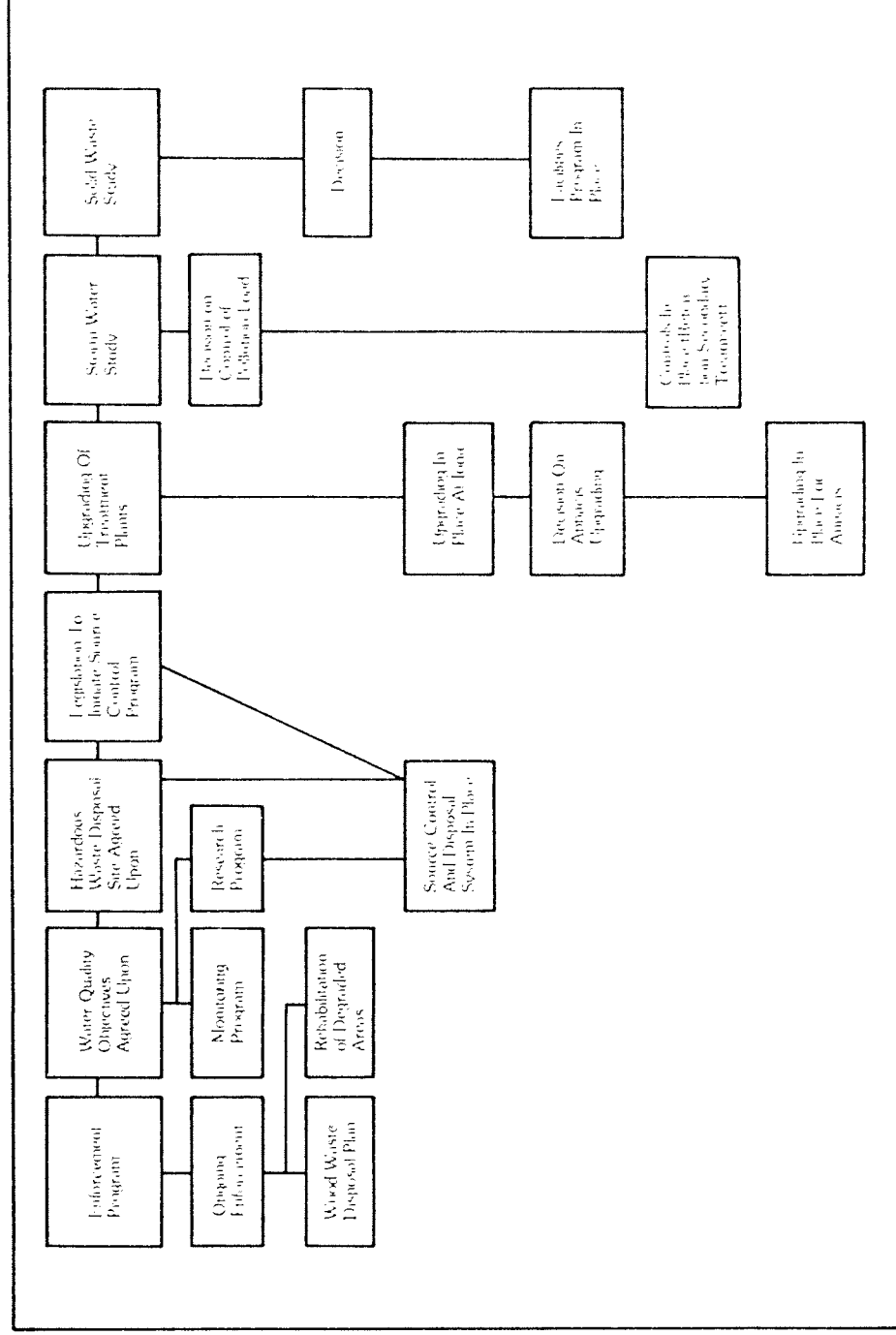
**Siting Considerations** • That potential impact on water quality be a prime consideration in the location and site design of activities in the Lower Fraser River and estuary drainage area.

**Monitoring and Enforcement** • That programs to monitor and enforce agreed water quality objectives be undertaken with a coordinated program of monitoring based on the recommendation of the water quality reports and enforcement closely coordinated with the enforcement programs of the B.C. Ministry of Environment and other enforcement programs.

• That corrective action to halt unregulated discharges and illegal dumps be continued and that programs to prevent accidental spills be promoted.

**Source Control** • That the necessary legislative changes be implemented to establish and enforce effective source control programs to reduce the toxicity of industrial discharges to municipal sewers and to reduce the total discharge of toxic substances

Flow Chart Summarizing Proposed Water Quality Objectives



APPENDIX D

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- That a Hazardous Waste Disposal Program be implemented immediately to complement the source control program. **Hazardous Wastes**
- That planning and implementation of improved sewage treatment should occur simultaneously with the initiation of the source control program for toxic contaminants and that sewage disposal in the estuary be upgraded to provide suitable receiving water quality. **Sewage Treatment Plants**
- That a decision be made by 1985 on the control of the pollution load contributed by storm water discharges. **Storm Water**
- That a coordinated program by all levels of government be initiated to develop a program for meeting municipal solid waste disposal requirements over the next twenty years, and that this program include the examination of feasible alternatives to land filling of bogs and low lying areas connected by groundwater to the Fraser River. **Solid Waste Disposal**

### **HABITAT MANAGEMENT GOALS AND OBJECTIVES**

- That the national and international significance of the biological resources of the Fraser River Estuary be a major consideration in planning and management of the estuary. **Importance of Habitat Resource**
- That the most significant areas of each type of ecosystem in the estuary be permanently protected from development, including the following areas: (a) the most biologically productive areas, (b) areas with the greatest species diversity, and (c) areas containing rare or unique species. **Permanent Protection**
- That existing legislation and regulations for the preservation and maintenance of habitat be fully applied. **Enforcement**
- That ecological considerations be fully incorporated into foreshore development planning and that developments on the foreshore be sensitively designed to minimize or avoid habitat loss. **Environmental Design**
- That where some sites in the estuary are considered more suitable for water-oriented development, policies for avoiding or minimizing habitat losses should include preference for water dependent activities, selection of environmentally less vulnerable alternative sites, and utilization of environmentally sensitive design to minimize significant disruptions to physical and biological processes. **Environmental Planning**
- That habitat loss and alteration to ecological processes be avoided where possible and losses mitigated to the fullest possible extent and as close to the disturbed areas as is environmentally feasible. **Minimum Habitat Loss**
- That a mitigation plan be implemented for habitat loss including the establishment of a self-perpetuating fund to acquire and manage key habitat sites and to implement a policy of mitigation banking in the estuary. **Mitigation Plan**
- That caution be taken to ensure, where possible, that habitat compensation projects are successfully commenced before projects requiring habitat loss are commenced. **Timing**
- That steps be undertaken to enhance the productivity of the estuary and to restore degraded habitats, where this can be shown to be cost effective. **Habitat Enhancement**
- That measures to establish new habitat resources through artificial means be pursued and demonstration projects implemented to test the effectiveness of various methods of establishing new habitat as opportunities arise. **Replacement Techniques**
- That while it is not possible or desirable to return the estuary to its pre-19th century condition, restoration and creation of certain habitat values **Habitat Restoration**

should be a significant estuary management objective and policies should seek restoration of historic levels of salmonid productivity as proposed in the Salmonid Enhancement Program, restoration of unique wildlife habitat, and restoration of lost riparian features.

- That programs be developed and implemented to assess the effects of habitat enhancement projects on agriculture and the need for and appropriateness of mitigation be considered.

#### **Agriculture and Wildlife**

- That a strategy to maintain or restore, and in some cases, current levels of fisheries and wildlife productivity to historic levels be agreed upon including an integration of policies on catch management, hunting, enhancement, habitat protection, and water quality.

#### **Habitat Management**

- That steps be taken to enhance the capabilities within management agencies to assess the impacts of development proposals on biological productivity and to ensure consideration of habitat values in regulatory processes affecting the estuary.

#### **Management Capability**

- That research programs be undertaken toward providing solutions to identified habitat and management problems in the estuary with high priority assigned to research related to habitat rehabilitation and enhancement.

#### **Research**

### **RECREATION GOALS AND OBJECTIVES**

- That the estuary be recognized as an essential recreation resource for meeting the needs for recreation in the region.

#### **Importance of Recreation**

##### **Upland Linkage**

- That recreation areas in the estuary be linked with the plans of upland municipalities and regional districts to ensure compatibility between the estuary management program and local, regional, and provincial plans.

##### **A Recreation Web**

- That a recreation plan for the estuary include as a minimum:
  - regional scale recreation areas in each of the six management areas in the estuary (Boundary Bay, the Delta Front, the Lower Main Arm, the Upper Main Arm, Pitt River, and the North Arm);
  - a string of linear access points between the regional sites providing a variety of local public access points;
  - links between waterfront sites and upland recreation systems (e.g., the Burnaby trail system);
  - preservation of archeological and historical sites, wildlife habitat and viewing areas, aesthetic assets and vistas of the river, and agricultural areas.

#### **Protection and Acquisition**

- That concern be noted that only 18 of the 90 recreation sites in the estuary identified by the **Recreation Report<sup>1</sup>** as having significant recreation potential are currently managed for creation use.

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<sup>1</sup>Lower River Estuary Study, Report of the Recreation Work Group, August, 1978

- That immediate steps be taken to ensure that those areas of high recreation suitability are protected and acquired for that purpose including improved funding and coordinated action.

#### **Funding**

- That funding arrangements be improved to establish a substantial funding program, with equitable sharing of costs and benefits, to acquire key recreation sites.

#### **Public Use**

- That areas along the shoreline already heavily used for recreation and already designated for recreation, be recognized by the appropriate agency and responsibility be assigned for management of those areas for public use.



APPENDIX F

- That informal recreation uses and opportunities (trails, bank access, viewing areas, etc.) be identified and established as a multiple use where compatible with other estuary and upland issues.
- That a plan for managing public access to dyking systems be prepared to increase public access in a manner consistent with preservation of recreation and habitat values, preservation of private property values, compatibility with agricultural and industrial uses, and maintenance of dykes.
- That other waterfront developments be planned to encourage public access where possible.
- That the management program give full support to the Greater Vancouver Open Space Conservancy Program and to Harbour Commission Programs to establish fishing bars, boat ramps, and other recreation facilities.
- That more information on designated recreation sites be made available to the public to make them aware of opportunities for recreation in the estuary<sup>2</sup>.
- That steps be taken to ensure that important historic and archeological sites identified in the estuary be preserved for the benefit of future generations<sup>3</sup>.

**Multiple Use**

**Dyke Use**

**Public Access**

**Ongoing Plans**

**Information**

**Heritage Resources**

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<sup>2</sup>Explore the Fraser Estuary, Peggy Ward, 1980, Lands Directorate, Environment Canada.

<sup>3</sup>Fraser River Estuary Heritage Resource Inventory, M. R. Parsons, April, 1981, prepared for the Heritage Conservation Branch, B.C. Ministry of the Provincial Secretary and Government Services.

