

DRAFT

DISTRICT OF CHILLIWACK

***Chilliwack Mountain
Comprehensive
Development Plan***

Discussion Paper

URBAN SYSTEMS
*September
1995*

DISTRICT OF
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**Chilliwack
Mountain
Comprehensive
Development
Plan**

*Discussion
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1. Introduction

The discussion below represents part of the second phase of the study to prepare a comprehensive development plan for Chilliwack Mountain.

In this second phase of the process several options for Chilliwack Mountain have been prepared for review by the participants in this process. The development of these options is based on the technical analysis undertaken in the first phase of the process. A background report was completed and presented in May, 1995, to the public, landowners, agencies, and staff and Council. The background report provides the basis for the land use and servicing strategies toward a draft plan for Chilliwack Mountain.

The options for consideration by the participants in this process are presented and summarized in the following sections.

2. General Principles

There are some general principles that offer direction for the options (and ultimately a draft plan) for Chilliwack Mountain.

- There is a need to accommodate a portion of the anticipated future growth in the District of Chilliwack in uplands areas such as Chilliwack Mountain.
- The District wishes to provide for an urban level of servicing to the area, including community water, sanitary sewer, roads, and utilities.
- Protection of key features of the Chilliwack Mountain setting is important, including:
 - environmentally sensitive areas (eg. habitats/riparian corridors)
 - steeply sloping and geotechnical hazard areas
 - visually sensitive areas
 - character of existing developed areas
- Provide for suitable road service (arterial and collector system) for proposed development areas and to accommodate off-site traffic volumes/demand and access to Chilliwack downtown (via Lickman Road or Scheyey (and Wolfe) Road) and Vancouver via Highway #1.
- Offer a range of housing opportunities from single-family to multi-family to ensure a balanced (mixed) community in Chilliwack Mountain.
- Develop a park and open space system to meet the recreational needs of the community and to protect environmentally sensitive areas. Include a trail network to link the open space system throughout the community.

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- Implement design concepts and guidelines for mountainous/hillside development (including cluster development, minimize road cut and fill, avoid use of environmentally sensitive areas or steep slope areas for urban development).

3. Options for Chilliwack Mountain

3.1 Background

The following considerations are important in preparing the potential development options for the study area:

- A good portion of the mountain has already been **developed** for single family subdivisions of varying density levels, from rural to suburban to a limited area of urban subdivision (including smaller lot single family as well as strata duplex development). This developed area totals about 45% of the mountain.
- Some of the undeveloped area has been committed for future multi-family development (through zoning), or is in agricultural/rural use and likely to remain. In addition, the two Indian Reserve areas comprise a substantial portion of the undeveloped lands on Chilliwack Mountain.
- The development proposal areas represent varying levels of suitability for urban development.
- Review of the technical analysis including constraints regarding environmental sensitivity, steep slopes, geotechnical conditions, road and servicing (water, sanitary sewer, storm drainage).
- Input from the public open house, landowners, and District staff.

3.2 Approach

The effort for the options is to determine the broad land uses (both type and density) for areas in the plan area, which will lead to land use designations and a servicing strategy in a draft plan as part of this second phase of the process.

The land use scenarios that have been prepared are based on different approaches to the future development that might be expected on Chilliwack Mountain. These are outlined in the description of each of the options.

The plan area is essentially made up of existing developed subdivisions and undeveloped areas. The options presented here take this existing context into consideration.

The land use type/density has been varied for each of the options, for both the existing developed areas and the development proposal areas.

The essential difference in the options is whether the opportunities & constraints from the technical analysis are considered or not, and whether the existing developed areas are serviced by both community water and sanitary sewer.

Community services (such as schools) and shopping facilities do not appear to be warranted under the population projections for the options presented here. Locations for a suitable level site are also difficult to find on the mountain. Parks (community and neighbourhood) and an open space and trail system are the exception to the above.

Servicing constraints, primarily road access to the south face of the mountain, will have an influence on the feasibility of the options.

3.3 Description of Options

OPTION 1

- **Concept**

Under this option the existing developed areas are anticipated to remain as they are currently and without any extension of services (water or sanitary sewer). The number of units and population are calculated for the existing residential subdivisions and other developed areas.

The development proposal areas are shown as being developed in the future, with consideration given to the findings of the technical analysis. For example, steep slope (> 30%) areas and inaccessible portions of the mountain have not been used to estimate the potential total number of units and population for the plan. The developable areas on each of the lands have been determined and then densities applied to calculate the estimated number of residential units and projected population for these areas. For this option, an average net density of 25 units per hectare (uph) is assumed for multifamily, and 2 uph for single family in new development areas. The net density includes a reduction of 10% of the developable area for roads to service development. Servicing is assumed to be provided to these areas, including water and sanitary sewer.

- **Summary**

This option would result in an estimated total of 1,452 residential units and a population of approximately 3,600 persons when the plan area is completely developed. The housing balance represented in this option is about 37% Single Family residential dwellings (or 532 units), and 63% MultiFamily residential dwellings (or 920 units).

An illustration of Option 1 is shown on the attached map. A more detailed breakdown of the estimated development in the plan area is shown in the table attached as Appendix A.

OPTION 2

- **Concept**

With this option some of the existing development areas are provided with community services (water and sanitary sewer) and therefore are considered for potential densification. The extension of services would increase pressure for some redevelopment of these areas. An assumption of a 20% increase in the number of lots in the existing subdivisions of Chilliwack Mountain Estates and Old Orchard Road is made under this option, as well as for some multifamily development at the northwest end of Chilliwack Mountain Road.

The extension of services would be partially dependent on the majority of landowners in this area making a request to the District. In addition, the location of existing dwellings on many lots would mitigate against the number of lots that could be further subdivided to take advantage of the servicing extensions. As well, there are restrictive covenants on many of the subdivision areas that restrict the housing type to single family dwellings, thereby limiting the amount of multifamily development in existing developed areas.

The development proposal areas are assumed to be the same in this option as in Option 1.

- **Summary**

This second option would result in an estimated total of 1,627 residential units and a population of approximately 4,038 persons when the plan area is completely developed. The housing balance represented in this option is about 20% Single Family residential dwellings (or 337 units), and 80% MultiFamily residential dwellings (or 1,290 units).

An illustration of Option 2 is shown on the attached map. A more detailed breakdown of the estimated development in the plan area is shown in the table attached as Appendix B.

OPTION 3

- **Concept**

Under this option the existing developed areas are to remain the same (as in Option 1), where community services are not extended to these areas.

The development proposal areas are as proposed by the respective landowners, or with an assumed level of development for those areas where preliminary proposals have not been made at this time. Servicing, including water and sanitary sewer is assumed to be provided to these areas.

- **Summary**

This third option would result in an estimated total of 2,534 residential units and a population of approximately 6,210 persons when the plan area is completely developed. The housing balance represented in this option is about 12% Single Family residential dwellings (or 324 units), and 88% MultiFamily residential dwellings (or 2,210 units).

An illustration of Option 3 is shown on the attached map. A more detailed breakdown of the estimated development in the plan area is shown in the table attached as Appendix C.

3.4 Servicing Implications

Transportation and Roads

The technical analysis provided an indication of the anticipated requirements for a transportation system to service the future Chilliwack Mountain community. In the background report it had been identified that improvements to the existing off-site road system would likely be needed should a more urban level of development occur in the study area. It was also identified that the existing collector road system is relatively limited in terms of servicing new development areas on the mountain.

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The analysis of the three options indicates the traffic that is likely to be generated will warrant an additional roadway on the south side of the mountain. It is also considered important to provide road access off the south side of the mountain in at least one location.

A preliminary review of a collector road system to service the development proposal areas (primarily on the east and south side of the plan area) suggests the route alternatives are limited, mainly due to steep topographic conditions. However, a collector road system and access off the mountain (to Lickman Road) may be achievable. The conceptual layout has been prepared at this stage without detailed geotechnical assessment and topographic mapping of the route. The road grades for the conceptual layout shown assume that 12% grades are the maximum acceptable to the District. The right-of-way widths are assumed to be 20 m, which is consistent with recent standards employed for upland areas in Chilliwack. There are important issues regarding the function and appearance of such a collector roadway that should be addressed at the draft plan stage.

The on-site collector road system is shown extending from Lickman Road and then west along the side of the mountain to intersect with existing Shrewsbury Drive. Two local roads off of this collector are possible. One local road extends west from the existing Bracken Drive, then extends west from the existing Grandview Drive as shown on the proposed roadway map.

A new intersection of the proposed collector with Lickman Road will be required, and will need to accommodate a significant amount of turning movements. This intersection should be of a standard and alignment to safely accommodate the anticipated traffic volumes. This will require some land acquisition from properties adjoining the study area.

With respect to off-site road requirements as a result of the three options, the use of the existing arterial roads -Lickman, Chilliwack Mountain, and Old Orchard roads are recommended to accommodate traffic to/from Chilliwack Mountain. Intersection improvements to the Lickman Road and Industrial/Yale Roads intersection will be necessitated by the population increases anticipated in each of the options. Signalization of

this intersection is warranted by the expected traffic volumes and movements. Additionally, improvements to the alignment and cross-sections of Chilliwack Mountain Road should be reviewed to ensure safe and efficient operation. The alignment and control of the intersection of Clack Mountain Road and Wolfe Road should be examined as part of this review.

Sanitary Sewer

Sewage collection and disposal on Chilliwack Mountain is currently provided by individual septic field systems, with the exception of the lower portions of the Sunrise Estates area on the east side of the mountain.

Under options 1 and 3 sanitary sewers would be constructed to service all new developments on Chilliwack Mountain. The existing single family off Old Orchard Road, Shrewsbury Drive, and Chilliwack Mountain Estates would remain unserved by sanitary sewers. Option 2 would require sanitary sewer to be constructed to service the existing subdivision within the potential service area shown on the attached map.

The proposed sewers will comprise two branches due to topography. The north branch would service developments off Chilliwack Mountain Road. The south branch serves the proposed developments on the south slope of Chilliwack Mountain and the area north of the catchment line as shown on the attached map (Under option 2 this area north of the catchment line would discharge north towards Old Orchard Road).

Regardless of the development option, the proposed sewers will need to discharge to a new forcemain to be constructed on Scheyey/Wolfe Roads (Sewer option A) or alternatively the proposed sewers could discharge to the existing sewers along Aitken Road and Lickman Road (Sewer option B). From a construction cost perspective, the Scheyey/Wolfe forcemain (Sewer Option A) is the preferred route. Our cost estimate below assumes sewer option A is implemented.

Water Servicing

Water servicing for Options 1, 2, and 3 for Chilliwack Mountain will require:

- installation of a new reservoir in the location shown on the map;
- upgrading and expansion of the existing reservoirs (Zones 2, 3, and 4); and
- upgrading of the existing pump stations.

New watermains will be constructed for all new developments on the mountain. Some upgrading of sections of the Chilliwack Mountain Estates development and the Lickman road watermain may be required depending upon the projected maximum population of Chilliwack Mountain. Construction of a new watermain on Old Orchard Road and Chilliwack Mountain Road may be required depending upon the requirements of the Ministry of Health, and the population projections for Chilliwack Mountain.

Sizing of the pump stations, reservoir, and watermains will be finalised once the draft plan strategy has been prepared.

Storm Drainage

Chilliwack Mountain is divided into a northern and southern catchment area as shown on the attached map. The north catchment area will discharge to the Fraser River. The south catchment area will discharge to the Chilliwack Mountain and Heppner ditches, which discharge into Achelitz Creek. A portion of the west side of the south catchment areas will discharge to the existing ditches along Industrial Way and Old Orchard Road, which will flow northwest and outfall to the Fraser River on the west side of Chilliwack Mountain. Improvements to these existing ditches and culverts will be required to serve development on the south side of Chilliwack Mountain

The Department of Fisheries and Oceans has indicated that detention of stormwater runoff prior to outlet to fish bearing streams is required.

Construction of detention ponds is unlikely due to the topography of the study area. Pipe detention of storm water is the least expensive alternative to the use of ponds, however large volumes of stormwater are difficult to detain within pipes. This could be resolved by requiring each development to provide pipe detention prior to discharge from their development. However, multiple detention facilities poses a maintenance problem and other municipalities have found that multiple facilities may create drainage problems if all the facilities are not designed to work together. This is not the preferred solution to this issue. Approaching the Department of Fisheries and Oceans for an exemption on stormwater detention should be considered. If an exemption is not granted then location of a detention pond on the valley floor would need to be discussed with the Agricultural Land Commission. On the south side of Chilliwack Mountain this could be accommodated in conjunction with the land acquisition required for the proposed road access off Lickman Road. Given the relatively limited area proposed for new developments on the north side of Chilliwack Mountain, storm detention is likely best addressed within the boundaries of each of the development proposal areas.

Preliminary Servicing Cost Estimates

The following summarizes preliminary estimated costs required for trunk offsite and onsite improvements for development of Chilliwack Mountain. These estimates are Class D order of magnitude estimates only and has been prepared without the benefit of detailed design drawings.

Roadworks	\$4.2 million
Sanitary Sewer	\$4.0 million
Water Servicing	\$3.4 million
Storm Drainage	\$0.5 million
Contingency (20%)	\$2.4 million
Total	\$14.5 million

The above estimates are consistent for options 1, 2, and 3 with the following exceptions:

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- Option 2: Sanitary Sewer construction to service the potential service area will increase the sanitary sewer costs by \$1.6 million for total of \$17.1 million.
- Option 3: Higher populations in this option require larger services and reservoir/pump stations. This will increase costs by \$600,000 for a total of \$15.1 million.

Costs per unit are estimated for each option as shown below:

Option 1	-	\$13,513 per unit
Option 2	-	\$11,461 per unit
Option 3	-	\$7,007 per unit

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APPENDIX A

Option 1

OPTION 1	Area (ha)	Dev. Area	Net Area	# Units	Unit Type	Population
Existing Developed Areas						
Sunrise Estates	14.9			73	SF	204
Chilliwick Mtn. Estates	116.3			86	SF	240
Shrewsbury Drive	34.6			34	SF	95
Old Orchard Road	75.7			48	SF	134
Maple Hill	17.4			120	MF	288
Agricultural/Rural Parcels	35.7			15	SF	42
Indian Reserve #3A	4			3	SF	9
Indian Reserve #8	40			379		1012
Subtotal	338.6					
Development Proposal Areas						
1. R. Clawson	22	6.2	5.6	12	SF	34
2. Old Orchard Estates Inc.	35.4	11.2	10	250	MF	600
3. Eureka Developments Ltd.	58.5	12.8	11.5	20	SF	56
4. 442391 B.C. Ltd.	56.8	6.9	6.2	155	MF	370
5. P. Woodward	47.8	12.3	11	275	MF	660
6. Chilliwick Mtn. Estates	4.7	4	3.6	1	SF	3
7. I. Berg	10.2	2.2	2	50	MF	120
8. Brodel Development Corp.	15.2	13.8	12.4	310	MF	745
Subtotal	250.6			1073		2588
TOTAL	589.2			1452		3600

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APPENDIX B

Option 2

OPTION 2						
Existing Developed Areas	Area (ha)	Dev. Area	Net Area	# Units	Unit Type	Population
Sunrise Estates	14.9			73	SF	204
Chilliwick Mtn. Estates	116.3			102	SF	285
Shrewsbury Drive	34.6			34	SF	95
Old Orchard Road	67.3			58	SF	162
Maple Hill	17.4			120	MF	288
West Chilliwick Mountain Road	10.9			130	MF	312
Agricultural/Rural Parcels	33.2			15	SF	42
Indian Reserve #3A	4					
Indian Reserve #8	40			20	SF	56
Subtotal	338.6			552		1444
Development Proposal Areas						
1. R. Clawson	22	6.2	5.6	12	SF	34
2. Old Orchard Estates Inc.	35.4	11.2	10	250	MF	600
3. Eureka Developments Ltd.	58.5	12.8	11.5	20	SF	56
4. 442391 B.C. Ltd.	56.8	6.9	6.2	155	MF	370
5. P. Woodward	47.8	12.3	11	275	MF	660
6. Chilliwick Mtn. Estates	4.7	4	3.6	3	SF	9
7. I. Berg	10.2	2.2	2	50	MF	120
8. Brodel Development Corp.	15.2	13.8	12.4	310	MF	745
Subtotal	250.6			1075		2594
TOTAL	589.2			1627		4038

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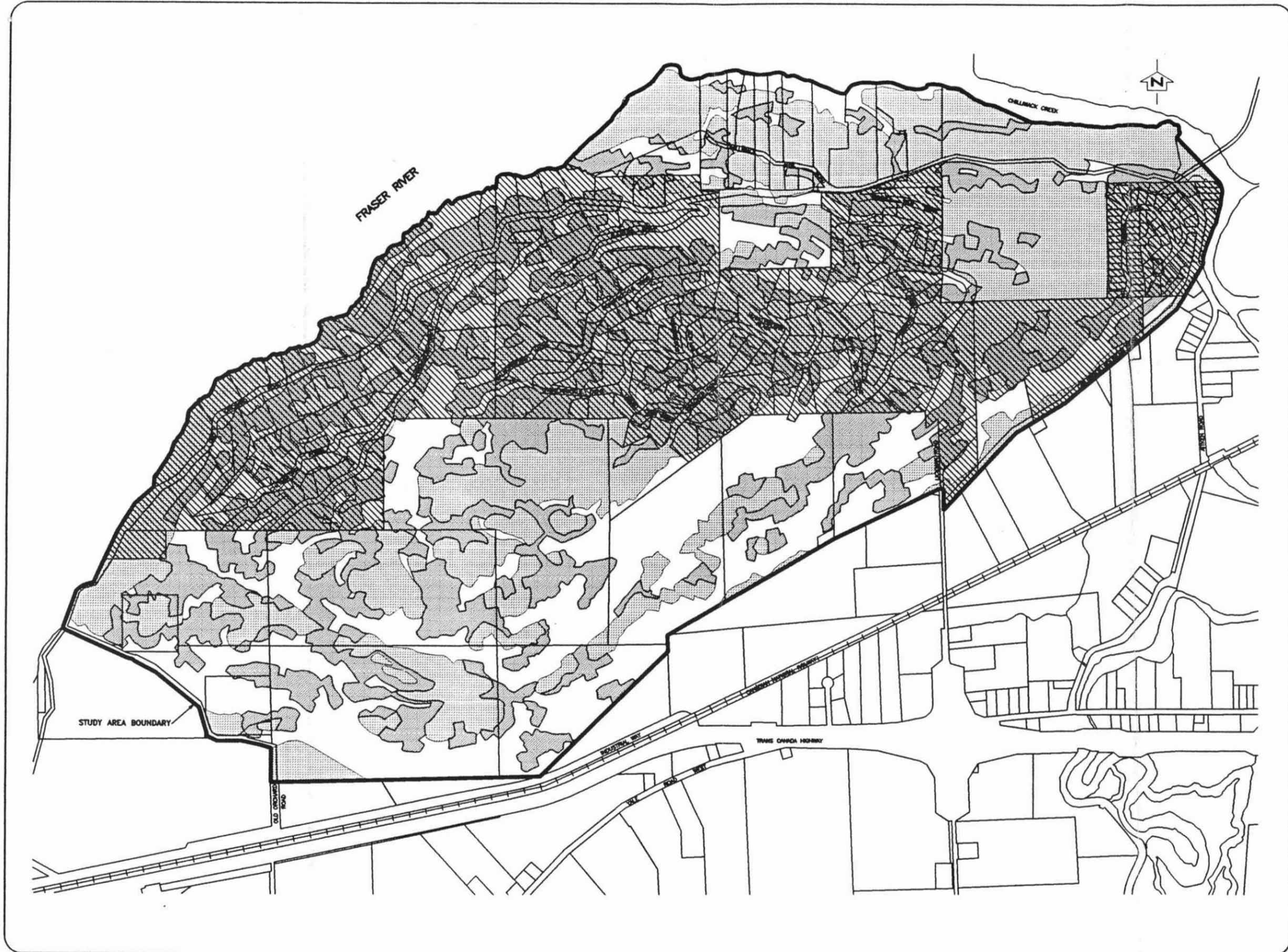
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APPENDIX C

Option 3

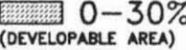
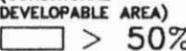
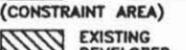
OPTION 3	Area (ha)	# Units	Unit Type	Population
Existing Developed Areas				
Sunrise Estates	14.9	73	SF	204
Chilliwack Mtn. Estates	116.3	86	SF	240
Shrewsbury Drive	34.6	34	SF	95
Old Orchard Road	75.7	48	SF	134
Maple Hill	17.4	120	MF	288
Agricultural/Rural Parcels	35.7	15	SF	42
Indian Reserve #3A	4			
Indian Reserve #8	40	3	SF	9
Subtotal	338.6	379		1012
Development Proposal Areas				
1. R. Clawson	22	24	SF	67
2. Old Orchard Estates Inc.	35.4	600	MF	1440
3. Eureka Developoments Ltd.	58.5	41	SF	115
4. 442391 B.C. Ltd.	56.8	702	MF	1685
5. P. Woodward	47.8	100	MF	240
6. Chilliwack Mtn. Estates	4.7	56	MF	134
7. I. Berg	10.2	250	MF	600
8. Brodel Development Corp.	15.2	382	MF	917
Subtotal	250.6	2155		5198
TOTAL	589.2	2534		6210

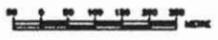


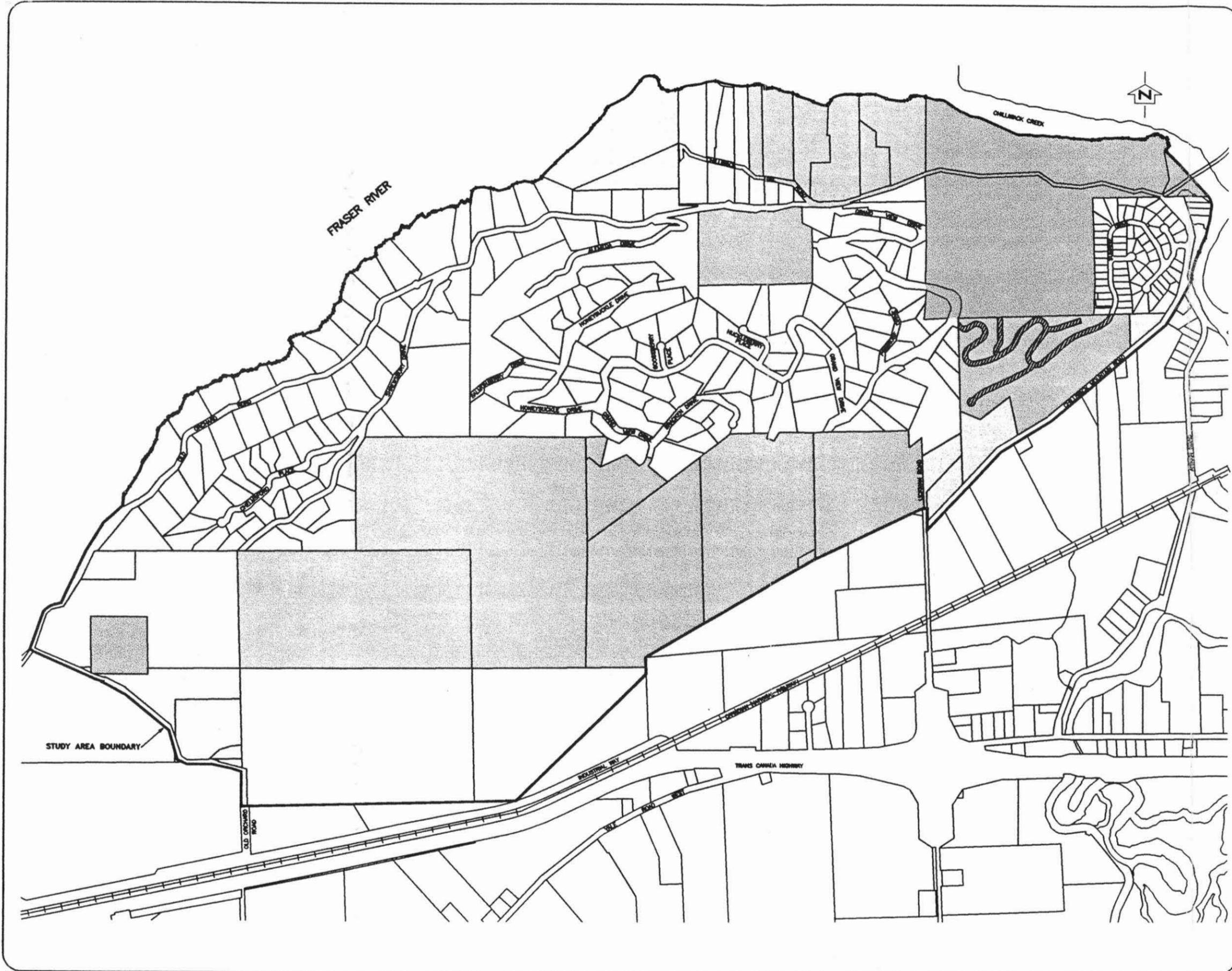
CHILLIWACK MOUNTAIN

DEVELOPABLE AREAS

LEGEND

-  0-30% (DEVELOPABLE AREA)
-  30-50% (CONDITIONAL DEVELOPABLE AREA)
-  > 50% (CONSTRAINT AREA)
-  EXISTING DEVELOPED AREAS





**CHILLIWACK
MOUNTAIN**

PROPOSED LAND USE
CONCEPTS

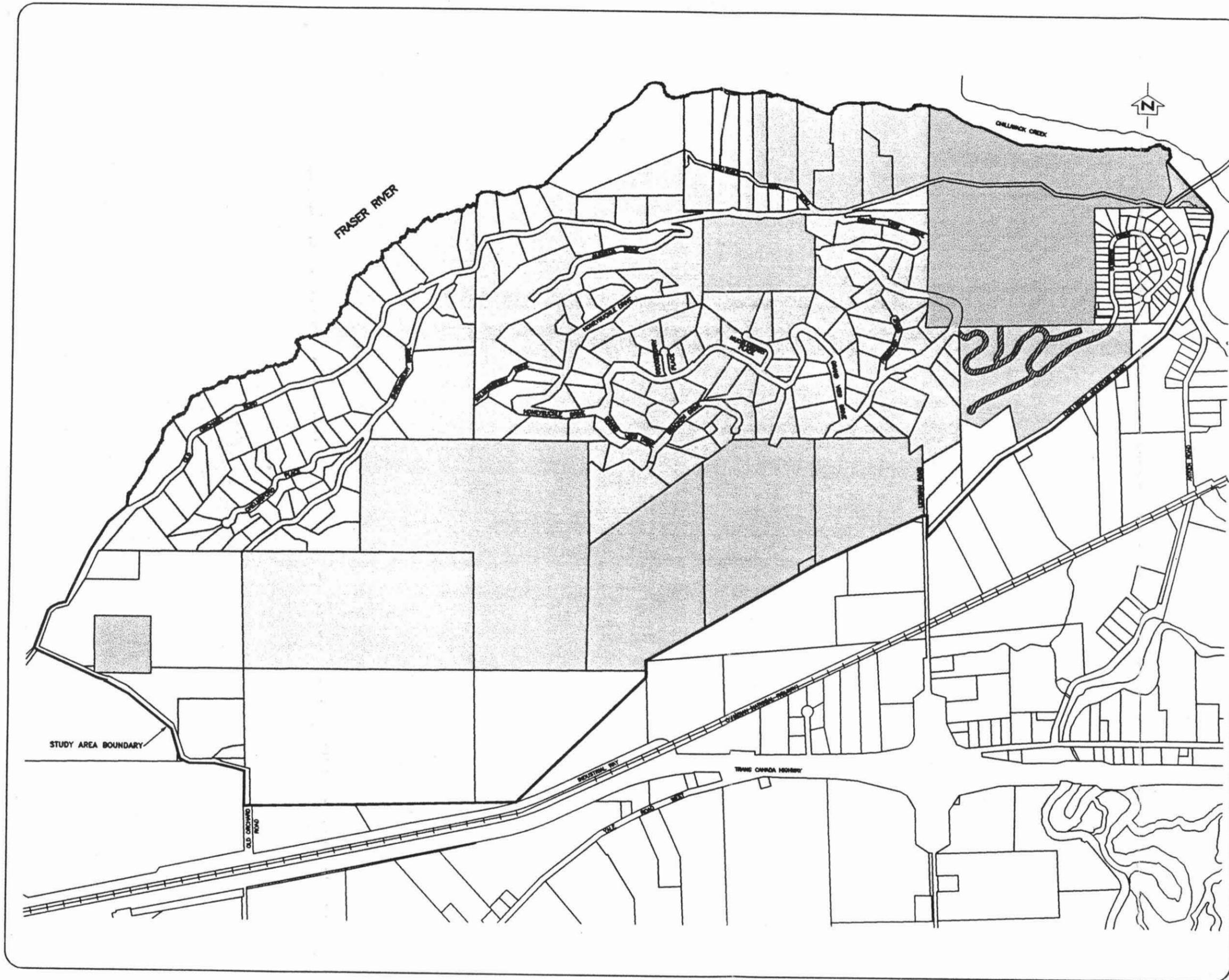
OPTION 1

LEGEND

-  SINGLE FAMILY RESIDENTIAL
-  MULTI FAMILY RESIDENTIAL
-  RURAL
-  INDIAN RESERVE

DATE: AUGUST 1985

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CHILLIWACK MOUNTAIN

PROPOSED LAND USE CONCEPTS

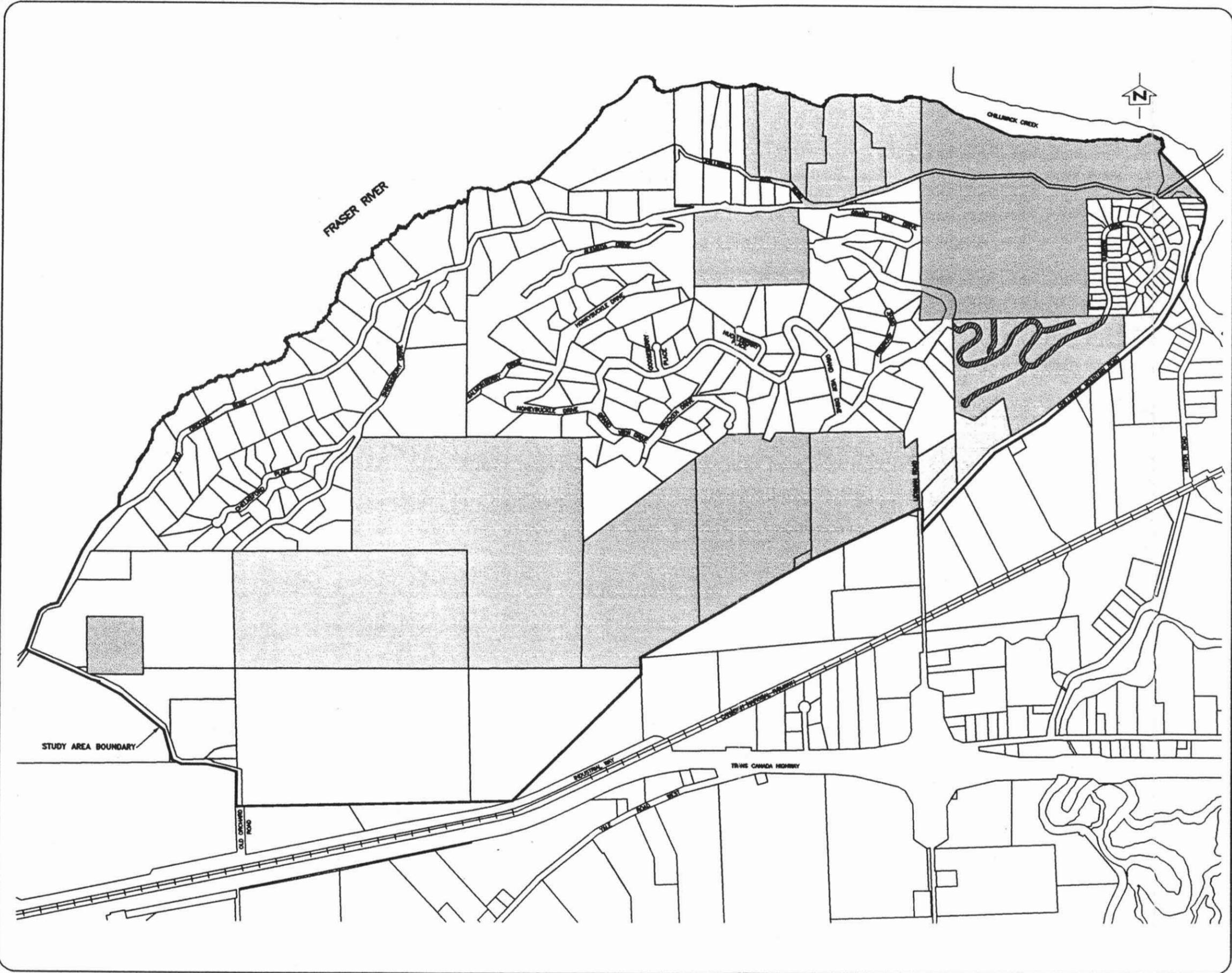
OPTION 2

LEGEND

-  SINGLE FAMILY RESIDENTIAL
-  MULTI FAMILY RESIDENTIAL
-  RURAL
-  INDIAN RESERVE
-  POTENTIAL AREA OF INFILL/INCREASED DENSITY

DATE: AUGUST 1995

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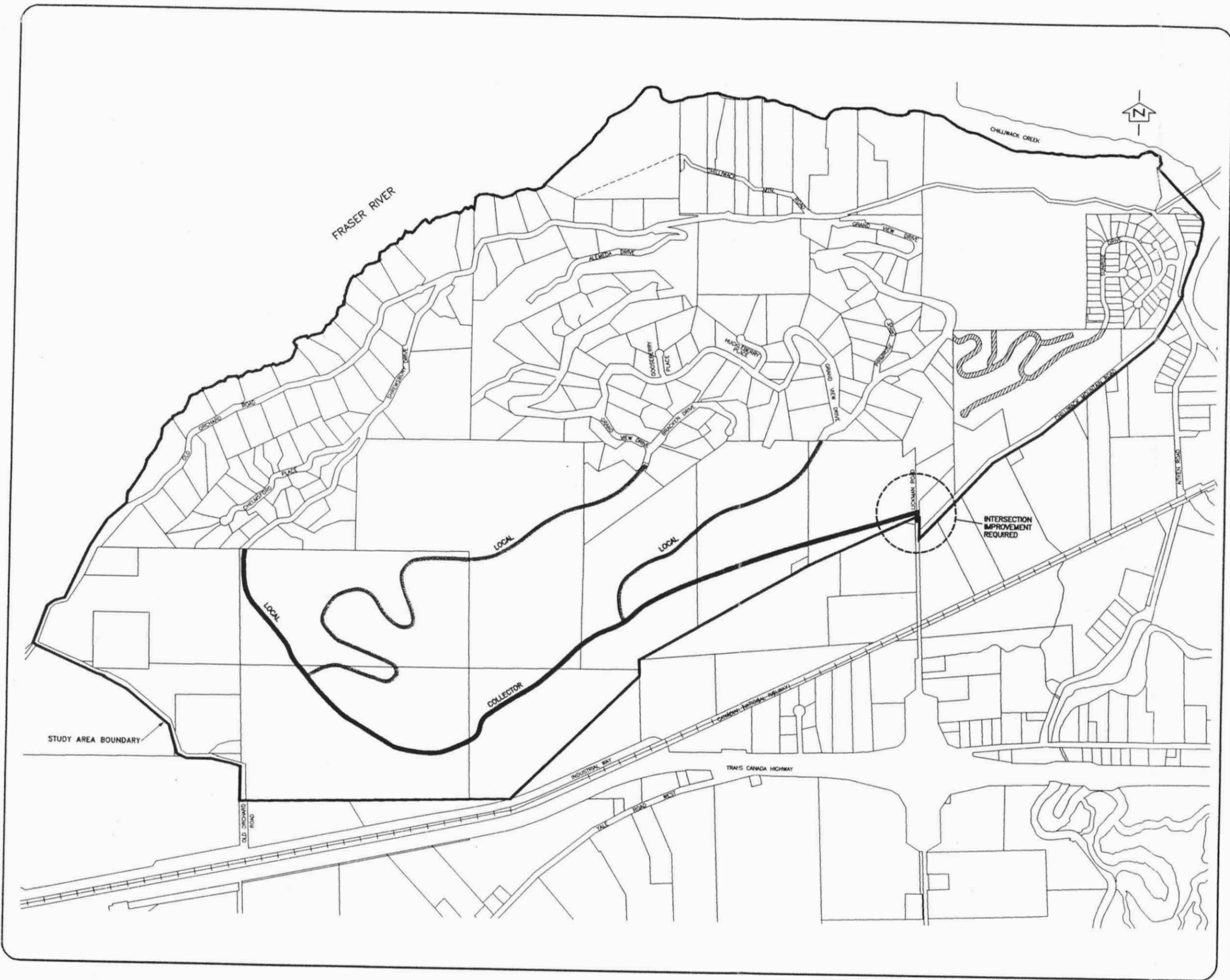
PROPOSED LAND USE
CONCEPTS

OPTION 3

LEGEND

-  SINGLE FAMILY RESIDENTIAL
-  MULTI FAMILY RESIDENTIAL
-  RURAL
-  INDIAN RESERVE

DATE: AUGUST 1995



CHILLWACK MOUNTAIN

PROPOSED LAND USE CONCEPTS

ROAD NETWORK

LEGEND

-  PROPOSED COLLECTOR
-  PROPOSED LOCAL

DATE: SEPTEMBER 1988

CHILLIWACK MOUNTAIN

PROPOSED LAND USE CONCEPTS

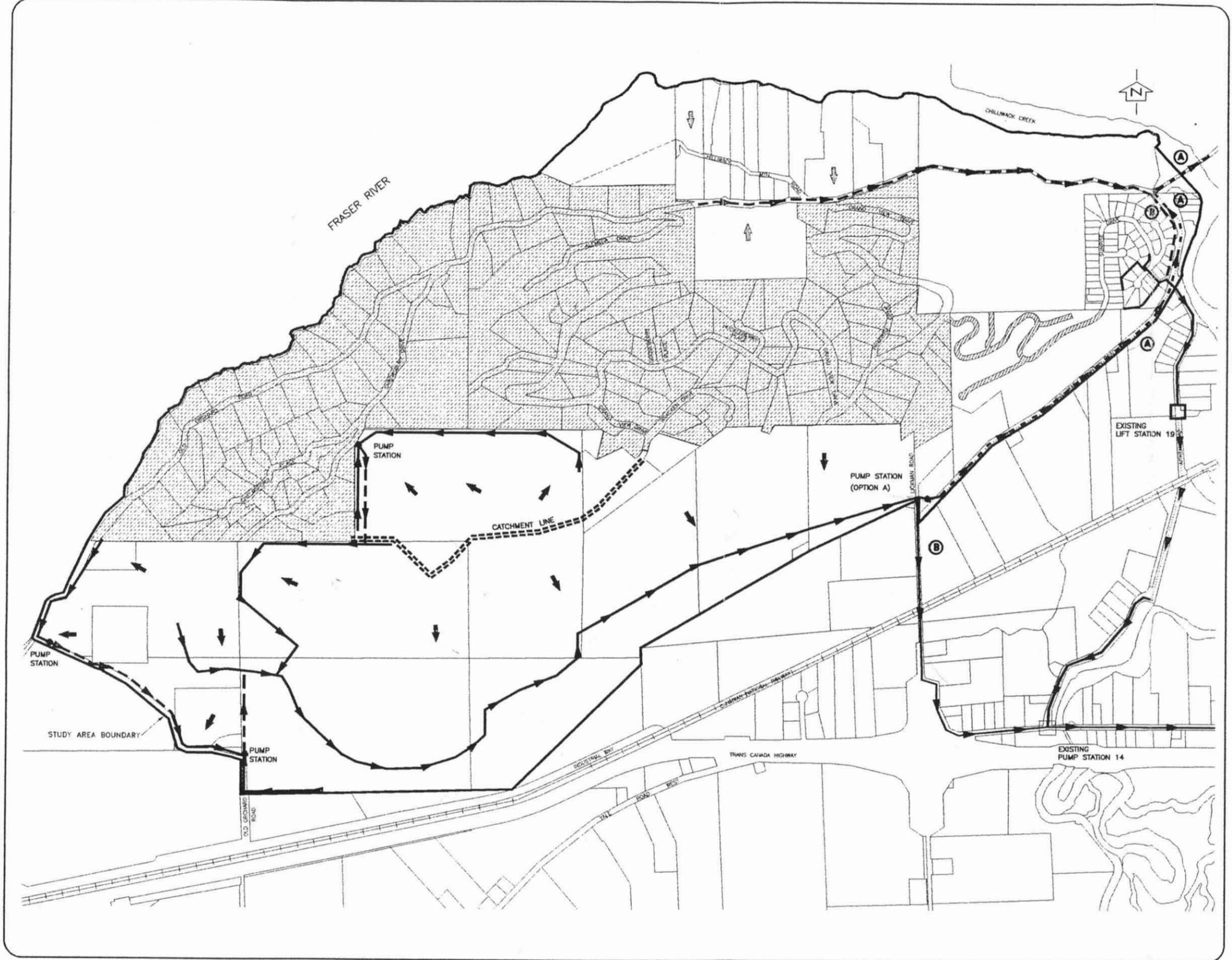
PROPOSED SANITARY

LEGEND

-  POTENTIAL SERVICE AREA
-  PROPOSED GRAVITY SEWER
-  PROPOSED SANITARY FORCEMAIN
-  OPTION A FORCEMAIN ROUTING
-  OPTION B FORCEMAIN ROUTING
-  EXISTING GRAVITY SEWER
-  EXISTING FORCEMAIN
-  GRAVITY SEWER FLOWS
-  PUMPED SEWER FLOWS

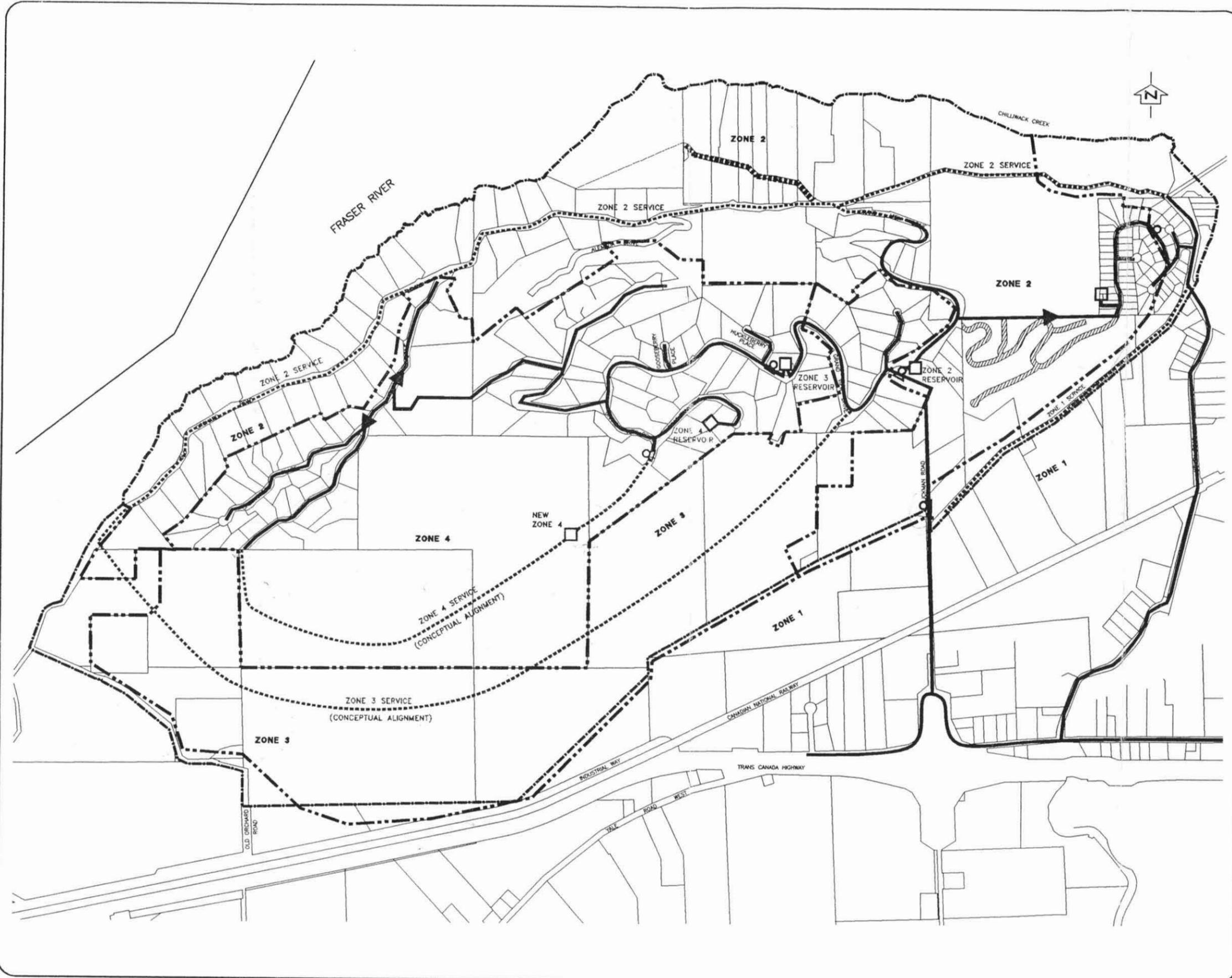
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CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

WATER SERVICING

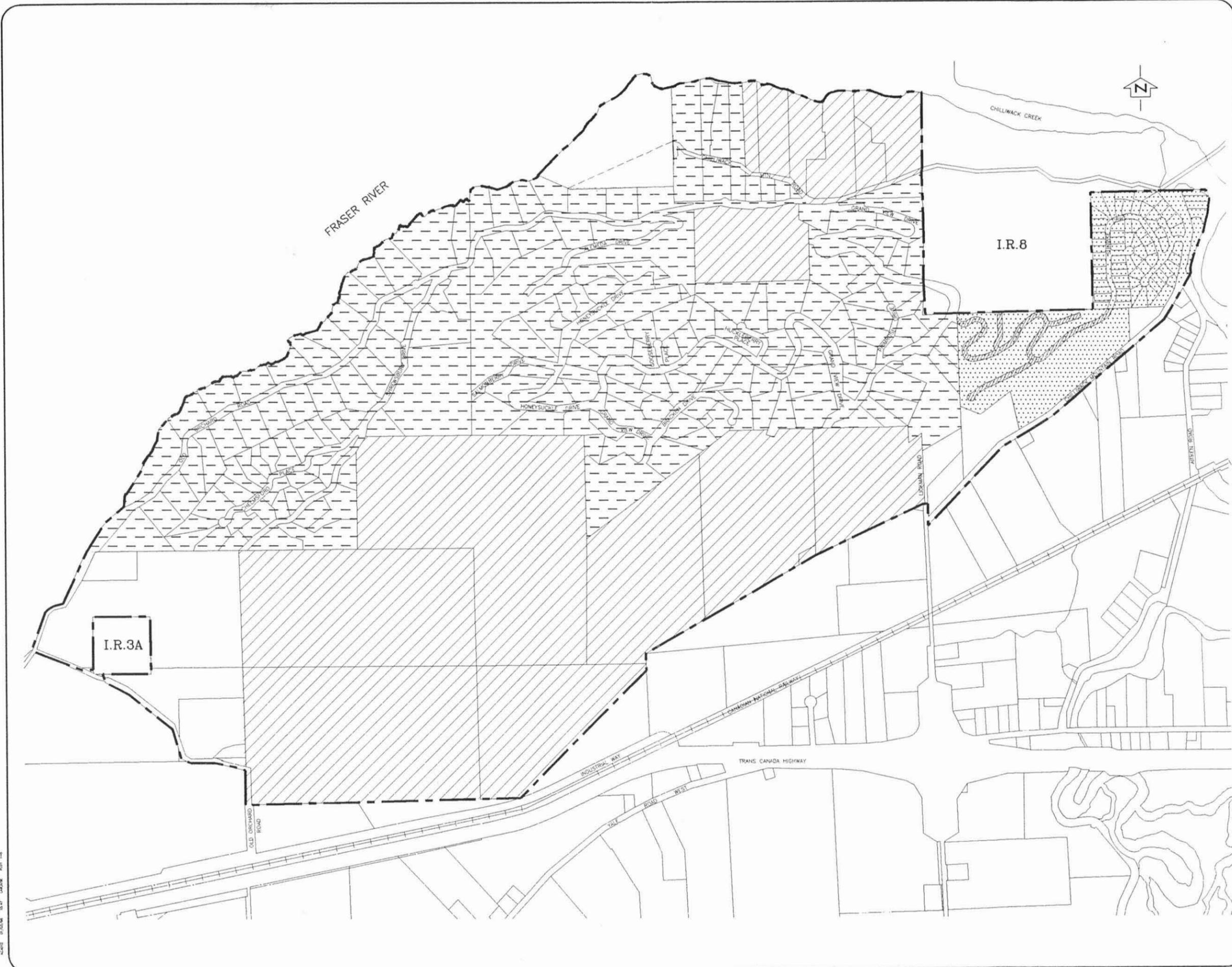
LEGEND

- ZONE BOUNDARY
- EXISTING WATERMAIN
- EXISTING RESERVOIR
- ⊠ EXISTING PUMP STATION
- ⊠ PRV STATION
- - - - PROPOSED WATERMAIN
- PROPOSED RESERVOIR
- ⊠ PROPOSED PUMP STATION

DATE: SEPTEMBER 1985

SCALE: 1:8000

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CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

LAND USE PLAN

LEGEND

- RURAL
- LOW DENSITY SINGLE FAMILY RESIDENTIAL
- LOW DENSITY MULTI FAMILY RESIDENTIAL
- SUBURBAN RESIDENTIAL
- PLAN AREA BOUNDARY

MAP 1

DATE: DECEMBER 1995

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SOURCE: CHILLIWACK MOUNTAIN LAND USE PLAN



CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

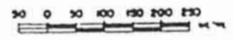
PARKS & OPEN SPACE

LEGEND

-  COMMUNITY PARKS
-  NEIGHBOURHOOD PARKS
-  TRAILS & WALKWAYS
-  NATURAL OPEN SPACE
-  ENVIRONMENTAL RESERVE
-  CONDITIONAL ENVIRONMENTAL RESERVE
-  EXISTING DEVELOPED AREAS
-  PLAN AREA BOUNDARY

MAP 3

DATE: DECEMBER 1995



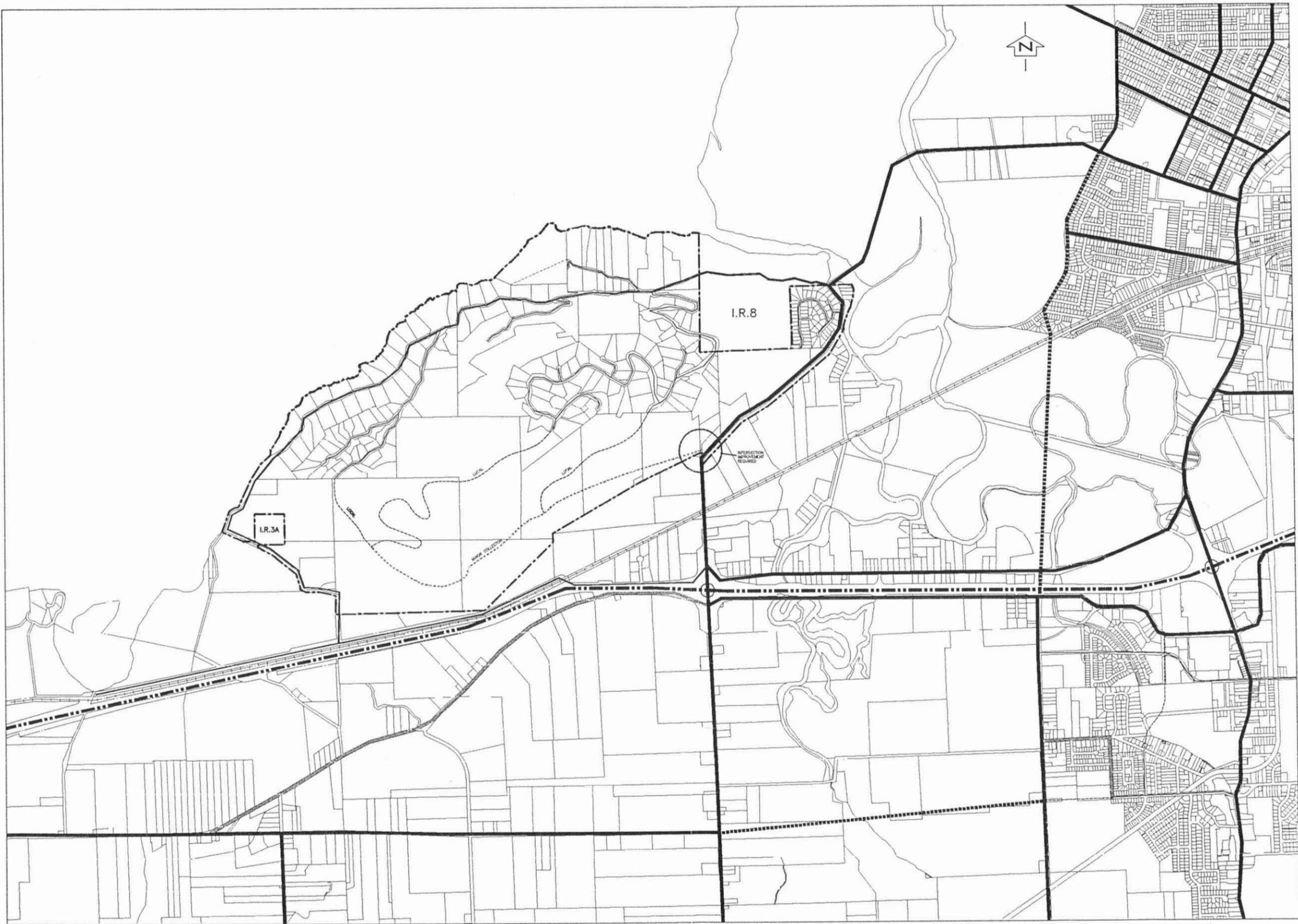
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CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

ROADWAY NETWORK

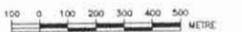


LEGEND

- RAILWAY
- == HIGHWAY
- EXISTING ARTERIAL
- PROPOSED ARTERIAL
- EXISTING COLLECTOR
- PROPOSED COLLECTOR
- EXISTING MINOR COLLECTOR
- PROPOSED MINOR COLLECTOR
- EXISTING LOCAL COLLECTOR
- PROPOSED LOCAL COLLECTOR

MAP 4

DATE: DECEMBER 1995

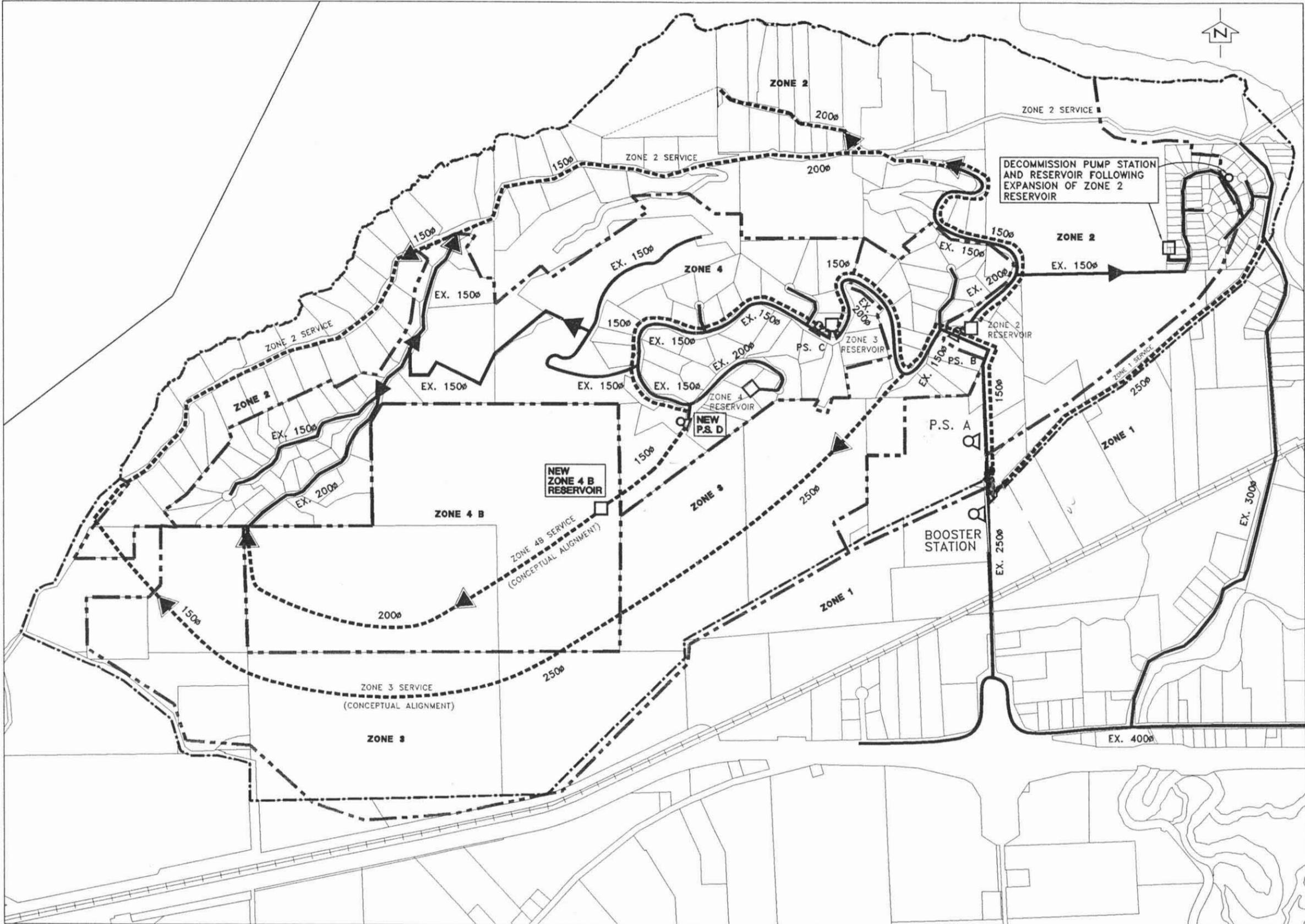


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CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

WATER SERVICING



- LEGEND**
- ZONE BOUNDARY
 - EXISTING WATERMAIN
 - EXISTING RESERVOIR
 - ⊠ EXISTING PUMP STATION
 - ▲ PRV STATION
 - - - PROPOSED WATERMAIN
 - ▲ PROPOSED P.R.V.

MAP 5

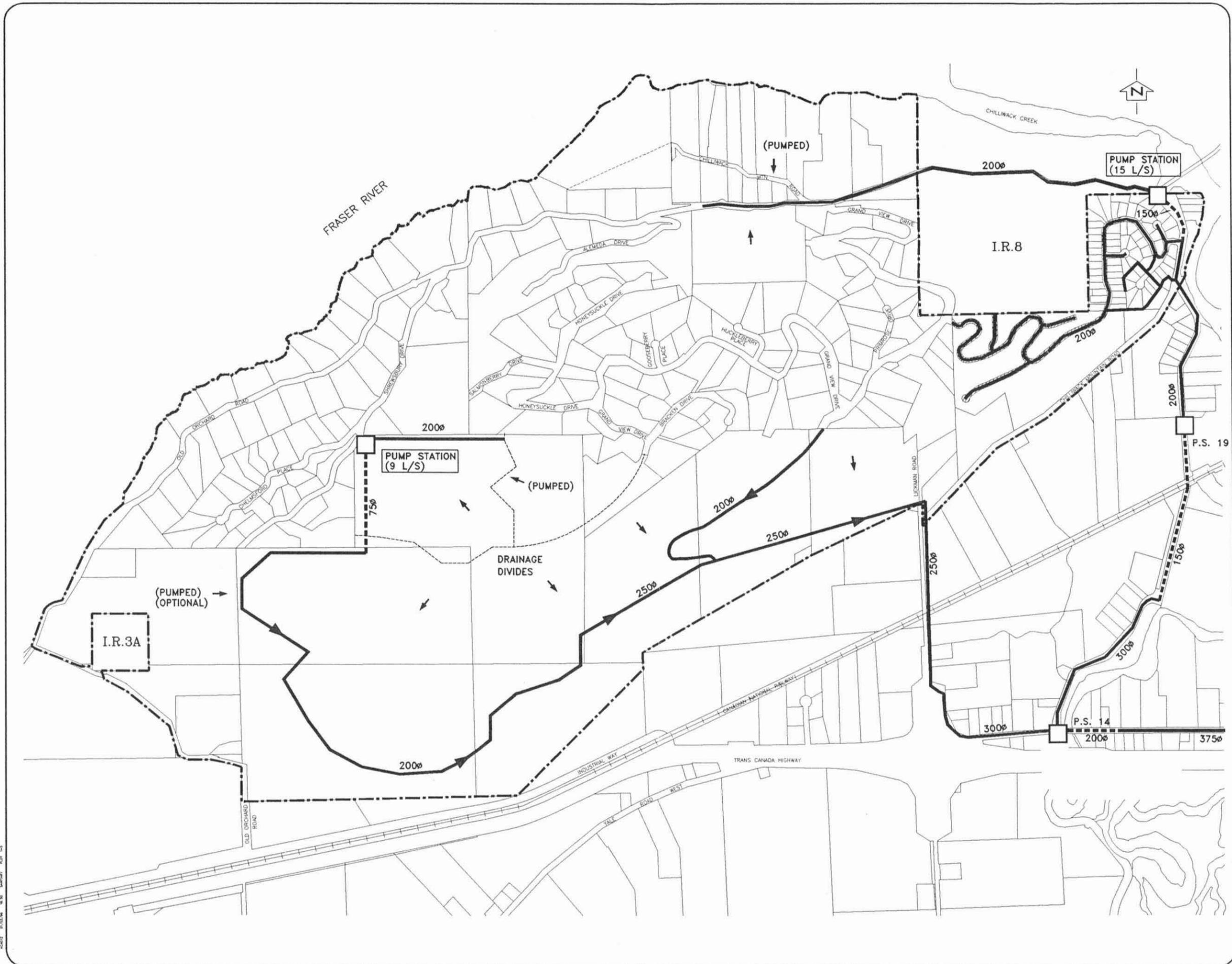
DATE: DECEMBER 1995



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NOTE:
PRV LOCATIONS SHOWN ARE APPROXIMATE.
ACTUAL REQUIREMENTS FOR PRV'S WILL BE
DETERMINED BY THE ACTUAL WATERMAIN ALIGNMENT.

MOUNTAIN 10-22-95 10-23-95 10-24-95 10-25-95 10-26-95 10-27-95 10-28-95 10-29-95 10-30-95 10-31-95 11-01-95 11-02-95 11-03-95 11-04-95 11-05-95 11-06-95 11-07-95 11-08-95 11-09-95 11-10-95 11-11-95 11-12-95 11-13-95 11-14-95 11-15-95 11-16-95 11-17-95 11-18-95 11-19-95 11-20-95 11-21-95 11-22-95 11-23-95 11-24-95 11-25-95 11-26-95 11-27-95 11-28-95 11-29-95 11-30-95 12-01-95 12-02-95 12-03-95 12-04-95 12-05-95 12-06-95 12-07-95 12-08-95 12-09-95 12-10-95 12-11-95 12-12-95 12-13-95 12-14-95 12-15-95 12-16-95 12-17-95 12-18-95 12-19-95 12-20-95 12-21-95 12-22-95 12-23-95 12-24-95 12-25-95 12-26-95 12-27-95 12-28-95 12-29-95 12-30-95 12-31-95



LUCAS ENGINEERING INC. 1995

CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

ON-SITE SANITARY SERVICING

LEGEND

- EXISTING SEWER (GRAVITY TRUNK)
- - - EXISTING SEWER (FORCEMAIN)
- PROPOSED SEWER (GRAVITY TRUNK)
- - - PROPOSED SEWER (FORCEMAIN)
- · - · - PLAN AREA BOUNDARY
- PUMP STATION

MAP 6

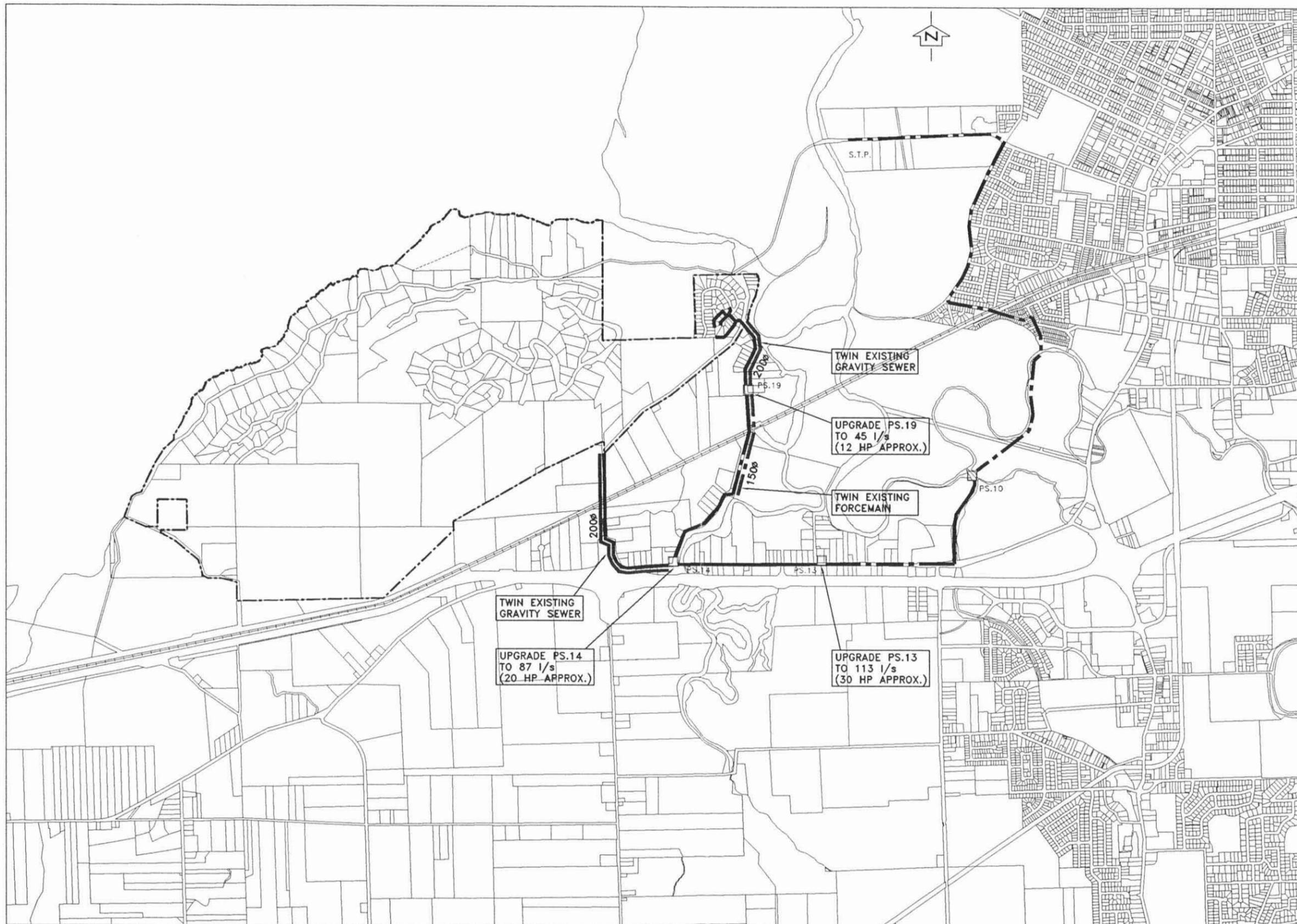
DATE: DECEMBER 1995

PREPARED BY: **URBANSYSTEMS**

CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

OFF-SITE SANITARY SERVICING



LEGEND

	EXISTING FORCEMAIN
	EXISTING GRAVITY SEWER
	EXISTING LIFT STATION
	SERVICE AREA
	PROPOSED FORCEMAIN
	PROPOSED GRAVITY SEWER

MAP 7

DATE: JANUARY 1996



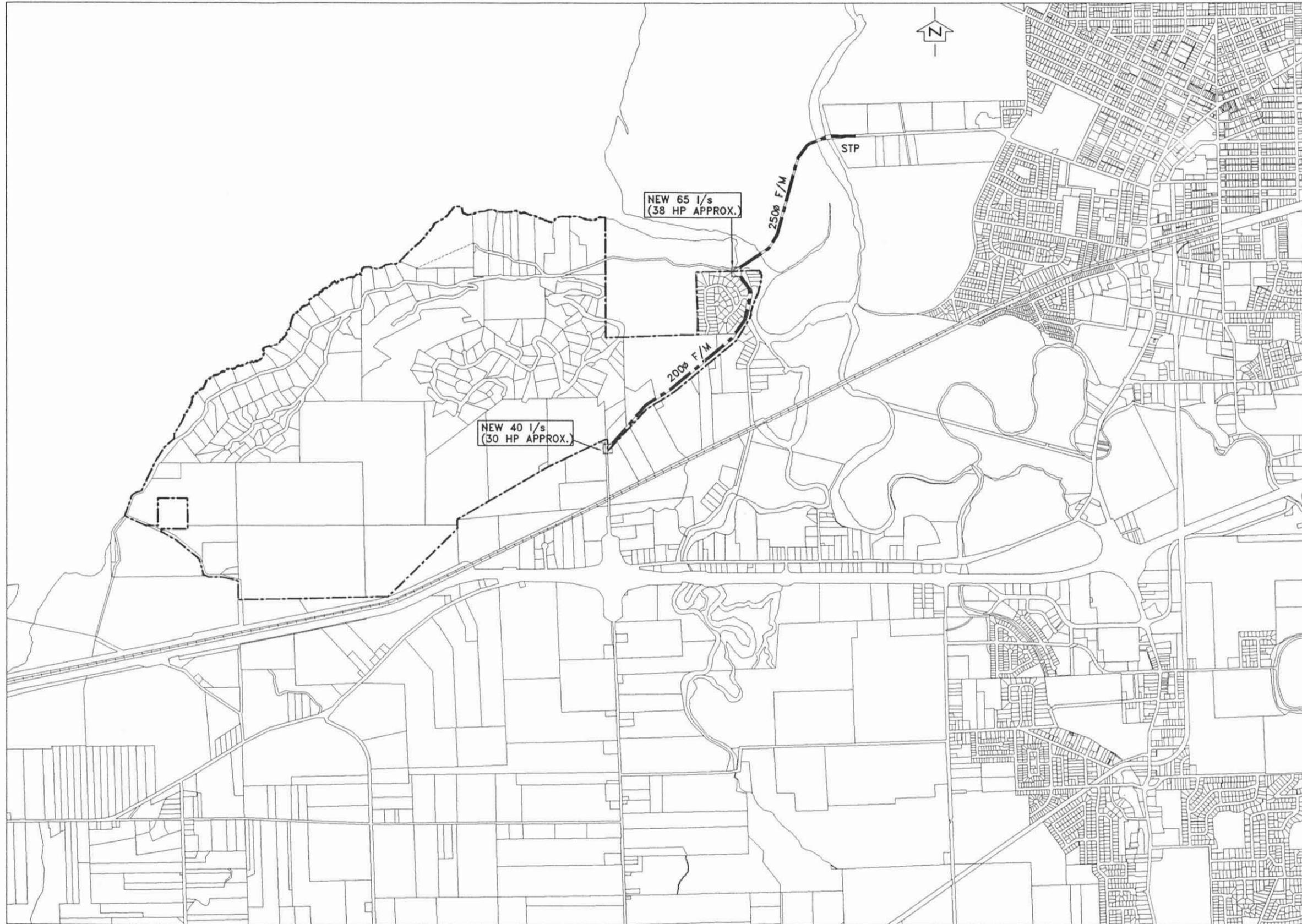
PREPARED BY
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MAP 7 CHILLIWACK MOUNTAIN

CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

ALTERNATE OFF-SITE SANITARY SERVICING

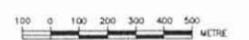


LEGEND

	EXISTING FORCEMAIN
	EXISTING GRAVITY SEWER
	EXISTING LIFT STATION
	SERVICE AREA
	PROPOSED FORCEMAIN
	PROPOSED GRAVITY SEWER

MAP 8

DATE: JANUARY 1996



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1:10000 PLAN 11

CHILLIWACK MOUNTAIN

COMPREHENSIVE DEVELOPMENT PLAN

STORM DRAINAGE

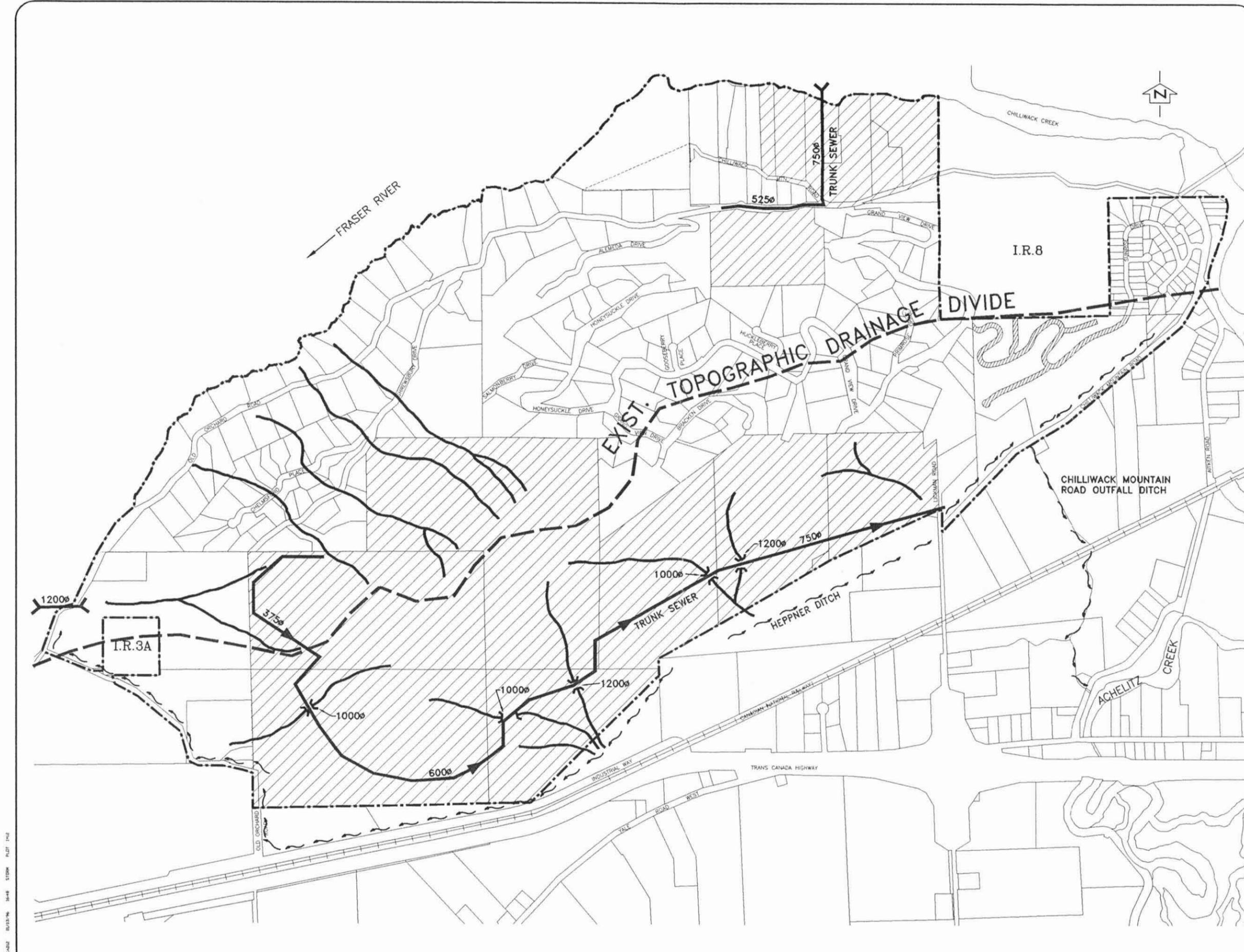
LEGEND

-  PROPOSED DEVELOPMENT AREAS
-  PLAN AREA BOUNDARY
-  EXISTING WATERCOURSE WITHIN PROPOSED DEVELOPMENT AREA

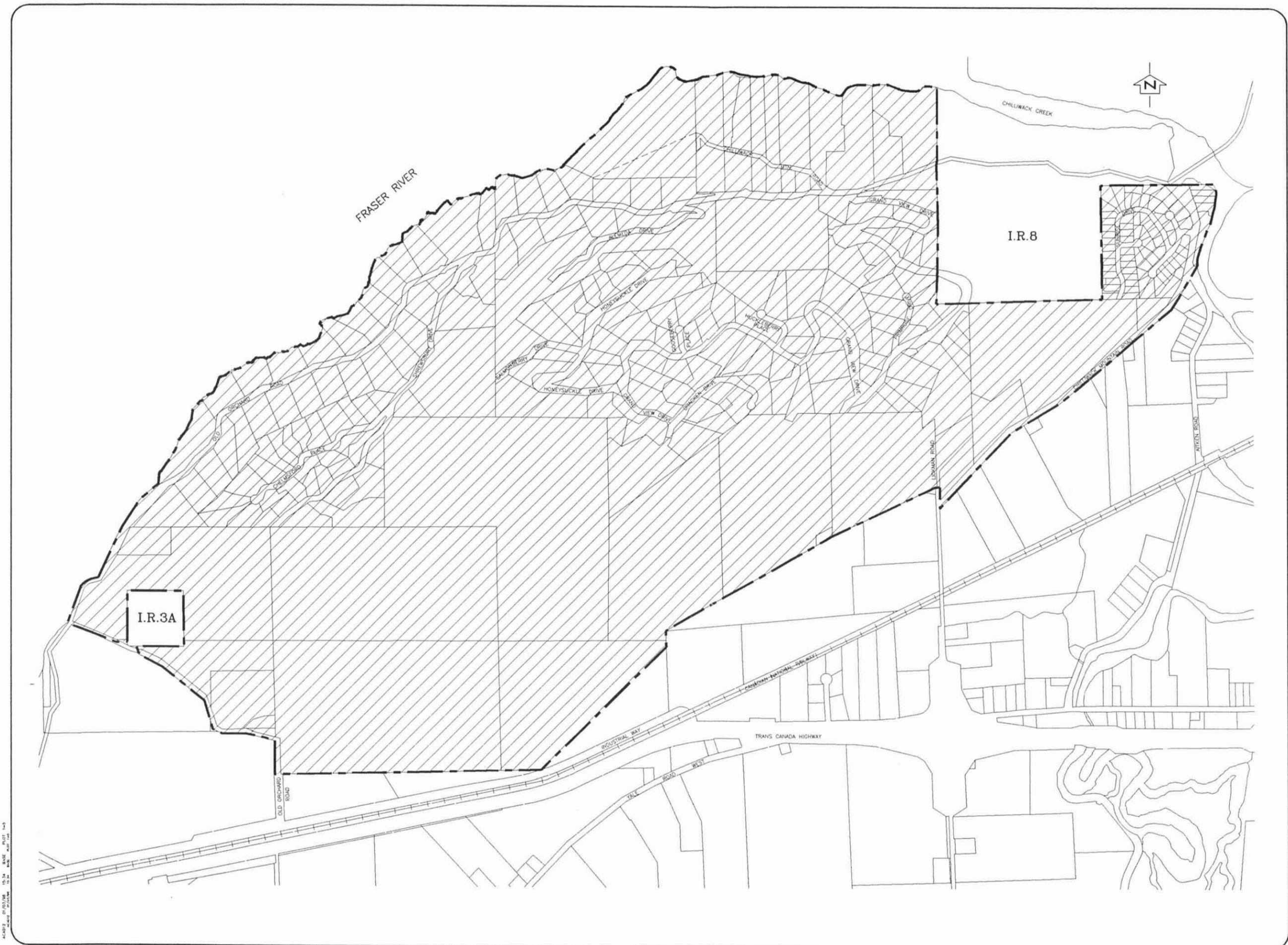
MAP 9

DATE: DECEMBER 1995

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SCALE: 1:5000 STORM PLAT 112



**CHILLIWACK
MOUNTAIN**

COMPREHENSIVE
DEVELOPMENT
PLAN

**DEVELOPMENT
PERMIT AREA
NO.**

LEGEND

-  Hatched area representing Development Permit Area
-  PLAN AREA BOUNDARY

MAP 10

DATE: DECEMBER 1995



PREPARED BY:
URBANSYSTEMS

SCALE: 1:50,000
 DATE: 1995
 DRAWN BY: [illegible]