

**Ministry of Transportation  
and Highways**

**TransCanada Highway Corridor Management Plan  
(Kamloops to Alberta Border):**

**COMMUNITY IMPACT AND DEVELOPMENT STUDY-  
SUMMARY REPORT**

**Final Report**

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# Executive Summary

## Introduction

The Ministry of Transportation and Highways is in the process of preparing a corridor management plan for the section of the Trans Canada Highway between the Afton interchange and the Alberta border. The Community Impact and Development Study examined the role and function of the highway within existing communities in the corridor as well as how future community development may impact the existing role and function, with growth and development eroding the functional performance of the highway. The information from this study also assisted the Ministry in carrying out its consultation program with key stakeholders including local governments and First Nations. Later in the project, information from this report will support the social/community accounts assessment in the multiple accounts evaluation exercises.

## Background

An important objective of this study is to understand the existing relationships between these communities and the Trans Canada Highway as well as to understand the possible future relationship as the communities and traffic volumes on the Trans Canada Highway continue to grow.

## Kamloops

The City of Kamloops is the largest community within the TCH corridor study area. With a current (1997) population of 80,507, it serves as a major service center for the Thompson Nicola region as well as parts of the Shuswap and Cariboo. It is anticipated that the City will continue to grow at rates between 1.5% to 2.0% per annum over the next 20 year period resulting in a population of in excess of 100,000 by the year 2010 and a population of 120,000 by 2020. The policies of the recently revised Official Community Plan provide for the infill and intensification of existing urban areas as well as the development of new urban areas. Almost 50% of future residential growth will be directed to the southwest sector of the City with the remainder to be located in the

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remaining sectors and the central core. Future commercial development will be directed at existing town centers, shopping centers and service and highway commercial uses located along the east and west approaches of the Trans Canada Highway.

## **Village of Chase**

The Village of Chase is located approximately 60 km east of Kamloops at the confluence of the Little Shuswap Lake and the South Thompson River. The Village has a population of 2,600 and has an economy based largely on the forest industry, agriculture and the service sector. Future population growth in the Village is projected to be in the 2% to 3% range. An important issue that the Village is addressing is the location of future growth. The constraints imposed by the Agricultural Land Reserve and steep topography combine to provide the Village with few options.

## **Sorrento Area**

The Sorrento area includes Sorrento itself as well as the Notch Hill, Balmoral, Blind Bay, Reedman Point and Cruikshank Point areas. The Sorrento area has a present population of approximately 4,500. Growth has been rapid in recent years, with an average annual population growth rate of almost 7% between 1991 and 1996. The OCP sets out a comprehensive growth strategy for the South Shuswap region including Sorrento. A key objective of the OCP is the development of a town center in Sorrento.

## **District of Salmon Arm**

The District of Salmon Arm is an incorporated municipality with a population of 15,651 located on the southwestern shore of the Shuswap Lake. As a larger community, the economy is more diversified and relies more heavily on the service sector. The forest, agriculture and manufacturing sector are still important as the mainstays of the District's economic base. Recent population growth rates in the District have been very high ranging between 4% and 5% per annum. While it is not expected that this growth rate can be sustained over the long term, it is expected that the District will continue to be one of the fastest growing communities in the corridor.

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## District of Sicamous

The District of Sicamous is located approximately 30 km east of Salmon Arm. The community was incorporated as a municipality in 1989 and presently has a population of approximately 3,000. Past population growth rates have varied. In the past five years, annual rates have been as high as 7.8% and as low as -1.4%. It is expected that population growth for the District will be in the 2% to 2.5% range for the next 25 years period. As in the case of Chase, the District of Sicamous is somewhat constrained in its future development by the ALR and topography. The District's Official Community Plan and a recently prepared strategic plan places a heavy emphasis on infilling and intensification of existing urban areas.

## City of Revelstoke

The City of Revelstoke is located 102 km east of Salmon Arm and 148 km west of Golden. With a population of 8,356. The City's economic growth and population growth has fluctuated over the past years in response to the construction activity associated with major hydroelectric projects. Population growth in the City has been modest over the past five years with annual growth rates ranging between .5% and 1.5%. The revised Official Community Plan addresses a range of policy areas including land use, servicing and transportation. Land use policies of the OCP provide for continued highway commercial development between the Columbia River bridge and the Highway #23 North junction.

## Town of Golden

The Town of Golden is an incorporated municipality located at the confluence of the Columbia and Kicking Horse Rivers. The Town presently has a population of approximately 4,200. Population growth rates for the Town of Golden have been modest over the past ten years. Recent annual growth rates have been in the 1.0% to 1.5% range.

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## Field

Field is an unincorporated community of some 270 residents located in Yoho National Park. The community is administered by Parks Canada. Parks Canada recently prepared a plan to guide future development in the community. Only modest increases in growth are desired and provided for in the plan.

## First Nations

Four First Nation communities are located in the corridor. Each of the four First Nations have developed or are in the process of developing plans which will impact the Trans Canada Highway.

*Kamloops Indian Band:* The KIB has a population of over 1,000. The Band has ambitious plans for the further development of Reserve #1. In addition to continued development of band member housing and the Chief Louie Center, there are a number of major market oriented developments proposed including Mt. Paul Industrial Park, Shuswap Landing, Mt. Paul Tram, and Sun Rivers.

*Little Shuswap Indian Band:* The Little Shuswap Indian Band has five reserves in the corridor although most of the development is located on Quaaout #1 Reserve located on the Thompson River at the east end of Little Shuswap Lake. Development on Quaaout #1 Reserve includes a variety of uses including resorts, lakefront cottages, light industrial uses, townhomes and a variety of band related uses including community halls, administration buildings, fire hall and a church.

The Band has an on-reserve population of approximately 113 with 121 Band members living off reserve.

*Adams Lake Indian Band:* The Adams Lake Indian Band has seven reserves in the corridor. Most of the Band's 360 members live on the Sahhalkum Reserve #4 located on the north side of the South Thompson River across from the Village of Chase. The Band believes that the further development of Switsemalph Reserve #6, some of which is located within the District of Salmon Arm, has potential for development to a variety of commercial and industrial uses. The Band has been working with the District of Salmon Arm to provide for the servicing and development of these lands.

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*Neskonlith First Nation:* The Neskonlith First Nation has three reserves in the corridor and a population of 209. A number of the reserves front directly onto the Trans Canada Highway such as Neskonlith Indian Reserve #2 located west of Chase and Neskonlith Indian Reserve #3 which is located within the boundaries of the District of Salmon Arm.

## Rural Areas

*Thompson Nicola Regional District:* The Thompson Nicola Regional District has initiated the preparation of a Growth Management Strategy which will address growth and development in the South Thompson Valley. While the Growth Management Strategy has not yet been completed, preliminary reports propose a movement away from dispersed rural residential developments to a development strategy which concentrates development in more compact and complete rural villages.

*Columbia Shuswap Regional District:* There are settled rural areas within the Columbia Shuswap Regional District which could impact the Trans Canada Highway in the future. The major area - Sorrento - has already been discussed.

## Traffic Characteristics and Growth

The review of traffic characteristics and growth projections were designed to assess the general role and function of the Trans Canada Highway. The review included historic and current traffic conditions as well as future conditions projected based on community and economic growth, and historic traffic characteristics.

Historical SADT and AADT volumes on the TCH between 1988 and 1996 have increased at a rate of 2.8% and 3.5% per year, respectively. Both growth rates have been considerably higher in the western sections of the corridor, where annual increases have reportedly been as high as 6%.

Socio-economic changes, both provincially and in communities immediately adjacent to the corridor, will add to the current traffic demands on the TCH. The 25 year SADT projections were prepared for each trip type — including work, shopping, personal business, recreation and commuter trips. Overall, the external traffic demands for

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this section of the TCH are projected to grow by 42% to 46% over the next 25 years.

The most probable growth scenario reflected both the average population forecasts for each of the communities and actual traffic forecasts on the TCH in the Kamloops area based on the City's transportation model. The most probable growth scenario was recommended for the purpose of assessing future traffic conditions on the TCH. Overall, the growth estimates indicate that internal traffic along the TCH would increase by approximately 40 to 80% over the next 25 years.

## Impact Overview

### Kamloops

The projected traffic volumes indicate a significant increase in local traffic use on the Trans-Canada Highway. The type, location and scale of development will affect the highway. Highway commercial or other land uses that attract traffic from the highway can negatively impact highway performance by increasing the number of turning movements and demand for accesses, without necessarily increasing the total traffic volume. Development in the southwest and southeast will increase the demand for use of the highway for local trips

In the past, the Trans-Canada Highway has acted as a barrier to development to the south, and has facilitated it to the east. It no longer acts as a barrier, and is continuing to be a driving force behind development to the east and west by providing fast access to other parts of the city. The highway will therefore continue to play an important role as a cross-town arterial for Kamloops.

Improvements to the municipal street network could decrease the amount of traffic that uses the highway for very short trips, but the proportion of longer commuting trips will increase as the highway continues to be an influence on the direction of growth.

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## Chase

If the Chase municipal boundaries are not extended, development will generally be confined to the east side of the highway and local trips on the highway will continue to be minimal. If the proposed development in the Chase Creek Road area proceeds, there could be a significant impact on the highway, and specifically the intersection of Chase Creek Road and the Trans-Canada Highway. A road connection to the rest of Chase will be required for most basic services, including shopping, schools and employment.

## Sorrento/Blind Bay

Pressure for more intense commercial development will be significant as the South Shuswap grows. This will result in greater use of the highway for local trips, particularly between Blind Bay/Eagle Bay and Sorrento. The number of turning movements to/from the highway will increase as a greater proportion of the traffic on the highway will be local residents accessing businesses, potentially leading to increased delays to through traffic.

Increased access management, particularly through Sorrento, will be necessary to maintain reasonable highway performance as the community grows. Collection of driveway accesses or increased use of local roads for business access may be alternatives to frontage. The addition of frontage roads or extra lanes, combined with increased traffic volumes will contribute to community severance effects. The effect will be greatest for pedestrians and cyclists as businesses in Sorrento continue to rely on more local business (as opposed to pass-by-highway related business) than in the past. The Trans-Canada Highway will continue to be the primary route connecting South Shuswap communities and will also continue to be the primary commercial street in Sorrento.

## Salmon Arm

Given Salmon Arm's role as a tourism and industrial service centre, the Trans-Canada will continue to be important to the economic growth of the District. As Salmon Arm grows, the existing level of development in the existing highway commercial areas will intensify, with the

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greatest intensification expected between the downtown area and Highway 97B. Access management has been the main method used to mitigate these impacts in the past, it will continue to be used in the future, likely to a greater degree.

As the District grows, the highway will become a greater barrier between residential areas to the southeast and commercial development north of the highway.

## **Sicamous**

Local traffic using the highway is currently quite low, but any residential development north of the highway would require residents to use or at least cross the highway for access to most services. Development west of the Narrows will require residents to use the highway for all trips to any other part of Sicamous. Highway commercial development is expected to increase. The impact will be greatest at the intersection of Highway 97A and the Trans-Canada where the volume of turning traffic is already a concern.

Since the highway bypasses much of the Sicamous, the impacts of the highway are limited. However, there is some residential development north of the highway, and more is expected as the supply of single family residential land declines. The highway severs this area from the rest of the community, particularly for pedestrians and bicycles.

## **Revelstoke**

At the eastern entrance to the city, future highway commercial development will increase the demand for turning movements to the access road. Given the topography and current access conditions, there should be little demand for new direct access to the highway. Most new residential growth in Revelstoke will be away from the highway and will not use the highway to access other areas of the city with the exception of the highway commercial areas. Therefore, the expected location of future residential growth will have minimal impact on the highway.

Given the expected location of new development, the effects of community severance should be minimal and limited to increased delay crossing the highway and difficulty for pedestrians and cyclists. The



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highway commercial area at Victoria Road is important to Revelstoke, as the visual appearance of the area provides the first impression of Revelstoke.

## Golden

There is potential for a future population of almost 1,500 in the northeast bench area, in addition to new highway and service commercial areas. If this level of development proceeds, the impact on the highway between Upper Donald Road and Highway 95 would be significant. The existing highway commercial area is not expected to grow substantially and the recent upgrading of the frontage road accesses should be sufficient to support any remaining development in this area.

Highway 95 will continue to be a key component of the local street network. The combination of the scale and type of development envisioned for the northeast bench and may require highway upgrading and/or new local street construction to connect the area to the rest of Golden. The highway currently creates some feeling of community severance. This is a result of newer highway commercial development that has been attracted to the Trans-Canada Highway and is therefore separated from much of the rest of Golden. Pedestrian and bicycle access between the built-up area of Golden and the highway commercial area is difficult.

## Conclusions

The national/provincial demands for the Trans-Canada highway are often quite different than those at a local level. The challenge in developing a corridor management plan is to balance national, provincial, regional and local concerns to arrive at a future role and function that achieves the objectives of all stakeholders and serves as a basis for evaluating the performance of the Trans Canada Highway. This report has outlined the concerns and established background information that can be used in performance evaluation.

Future work on the Corridor Management Plan will develop transportation strategies that define problems and identify and evaluate alternative solutions where appropriate. The range of transportation

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strategies that may be considered are categorized into three groupings as follows:

- Highway Improvements
- Local Area Network Enhancements
- Access Management

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# 1 Introduction

The Ministry of Transportation and Highways is in the process of preparing a corridor management plan for the section of the Trans Canada Highway between the Afton interchange and the Alberta border. The objective of the corridor management plan is to provide the Ministry with a basis for making effective investment decisions for the Trans Canada Highway.

This study was one of two studies commissioned by Ministry the to assist in the preliminary phase of the plan; the other was an External Activity Overview Study completed by Actran Consultants.

Both studies have been undertaken to assist the Ministry in assessing the existing role and function of this section of the Trans Canada Highway as well as identifying future trends which may impact the preservation of the role and function of the Trans Canada Highway as a primary route in the Province. A secondary purpose of the studies was to provide background information and analysis for the Ministry in the preparation of the performance evaluation.

The emphasis of the Community Impact and Development Study was the role and function of the highway within existing communities in the corridor as well as how future community development may impact the existing role and function, with growth and development eroding the functional performance of the highway. The information from this study also assisted the Ministry in carrying out its consultation program with key stakeholders including local governments and First Nations. Later in the project, information from this report will support the social/community accounts assessment in the multiple accounts evaluation exercises.

## 1.1 Objectives and Scope of the Study

Specific study requirements were established by the Ministry for this study to ensure that the necessary information and analysis were provided to assist in the corridor management planning process. The following specific requirements were identified for the study:

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- Developing a base line for undertaking the assessment of impacts. Specific activities included:
  - preparing community profiles;
  - describing the existing relationship of the Trans Canada Highway to each of the communities;
  - reviewing the plans and policies of local government and First Nations for future development;
  - identifying the possible impacts of local government and First Nations plans on the Trans Canada Highway.
- Preparing projections of population growth and demographics for each of the communities and First Nations.
- Forecasting travel demand within the corridor.
- Assessing the impacts of growth on this section of the Trans Canada Highway.
- Assessing the impact of growth in TCH traffic volumes on the individual communities.
- Discussing the implications of future growth and development for the strategic role and function of the Trans Canada Highway.
- Identifying additional study requirements to assist in the identification and definition of problems.

## 1.2 Format of Summary Report

This report is written in five sections. The findings of this study are organized as follows:

*Section 1* is an introduction to the report and describes how this report fits into the overall Corridor Management Plan.

*Section 2* provides an overview of the existing communities within the corridor and briefly discusses the relationship of the Trans Canada Highway to the communities.

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*Section 3* describes the outcome of the travel demand forecast for the corridor.

*Section 4* summarizes how the existing role and function of the highway may be affected in each community as well as how the communities may be impacted by increasing traffic volumes.

*Section 5* provides a summary on how the existing role and function of the Trans Canada Highway could be impacted and identifies potential issues. The section also identifies further work that would serve to better define the problems as well as identify options for addressing them.

In addition to the summary report, two appendices were prepared:

- Appendix A – Community Profiles; and
- Appendix B – Traffic Forecasts.

These appendices are bound under separate cover and provide more detailed information regarding the current and projected community and traffic characteristics along the corridor.

## 2 Background

### 2.1 Overview Of Communities Located Within The Corridor

There are numerous communities located within the Trans Canada Highway corridor between Kamloops and Alberta border. These include incorporated municipalities, unincorporated communities and First Nations. An important objective of this study is to understand the existing relationships between these communities and the Trans Canada Highway as well as to understand the possible future relationship as the communities and traffic volumes on the Trans Canada Highway continue to grow.

This section provides an overview of the incorporated communities as well as a number of the larger unincorporated communities and First Nations. A more detailed description of the communities is provided in Appendix A. Incorporated communities discussed include Kamloops, Chase, Salmon Arm, Sicamous, Revelstoke and Golden. Two unincorporated communities of Sorrento area and Field are discussed due to their size or relationship to the highway. First Nation communities discussed include Kamloops, Little Shuswap, Neskonlith and Adams Lake. Development in rural areas is also discussed in general terms.

#### 2.1.1 City of Kamloops

The City of Kamloops is the largest community within the TCH corridor study area. With a current (1997) population of 80,507, it serves as a major service center for the Thompson Nicola region as well as parts of the Shuswap and Cariboo.

The City and the Thompson Nicola region as a whole benefit greatly from the Provincial highway system. The economies of the City and region rely heavily on the access provided by the highway system to markets outside of the region. The forest, agriculture and mining sectors depend on the highway system for the movement of goods while the

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service sector particularly tourism, benefits from the strategic location of the City in relationship to Provincial highways.

The Provincial highway system is also used extensively in the City for local travel. In many respects the existing highway system has had an important impact on how the City of Kamloops has developed. The Trans Canada Highway, for example, enabled development to take place in the southeast and southwest sectors of the City, while the Yellowhead allowed development to the north (e.g. Rayleigh, Heffley Creek).

It is anticipated that the City will continue to grow at rates between 1.5% to 2.0% per annum over the next 20 year period resulting in a population of in excess of 100,000 by the year 2010 and a population of 120,000 by 2020.

The City adopted a revised Official Community Plan in 1996, which sets out a long term strategy for development. The policies of the OCP provide for the infill and intensification of existing urban areas as well as the development of new urban areas. Almost 50% of future residential growth will be directed to the southwest sector of the City with the remainder to be located in the remaining sectors and the central core. Future commercial development will be directed at existing town centers, shopping centers and service and highway commercial uses located along the east and west approaches of the Trans Canada Highway.

Various types of industrial use are proposed by the OCP:

- Light industrial uses would continue to develop in the Southgate Industrial Park.
- Medium industrial uses would be encouraged in the Campbell Creek industrial area.
- Heavy industrial uses would be retained and expanded in their present locations.

The City also supports the development of the Afton lands in the southwest area of the City for employment oriented uses such as business parks and industrial uses.

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The further development of major institutional uses such as health care facilities, the University College and the airport are also supported in the plan.

Of particular relevance to assessing the future impacts of future growth on the Trans Canada Highway are the City's plans for the development of its own transportation system. The City's transportation plan called Travel Smart was developed in conjunction with the OCP to provide an integrated land use/transportation strategy. Travel Smart placed great emphasis on locating new development in areas that would allow the existing road system to be optimized and to reduce the need for major new roads in the City. While the objective is to reduce the extent and cost of future improvements, improvements will nevertheless be necessary. Various improvements to the City's road system are proposed in conjunction with established population horizons.

The City also recognizes the importance of managing the impact of development on Provincial highways including the Trans Canada Highway. Various initiatives are proposed including an access management plan, increased reliance on transit and other alternative forms of transportation and discouraging strip development along arterials and highways.

Future development in the City of Kamloops will have implications for the existing role and function of the Trans Canada Highway. Areas of potential concern which are addressed in more detail later in this report include:

- Further development in the southwest and southeast sectors of the City will impact the TCH as there are few existing alternatives to the Trans Canada Highway for arterial road access to these areas.
- Further development in the Valleyview area will continue to place demands on the Trans Canada Highway through increased volumes and demands for more efficient access to existing and future development.
- Development of the K.I.B. lands will serve to increase volumes on both the Yellowhead and Trans Canada Highways particularly the Valleyview Interchange.



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## 2.1.2 Village of Chase

The Village of Chase is located approximately 60 km east of Kamloops at the confluence of the Little Shuswap Lake and the South Thompson River. The Village has a population of 2,600 and has an economy based largely on the forest industry, agriculture and the service sector.

As with the other communities located on the Trans Canada Highway, the highway plays an important role in sustaining the local economy particularly the local tourism industry.

The Village itself is located primarily north of the Trans Canada Highway with only a limited commercial strip along the highway. Access from the Village to the Trans Canada Highway is provided at three access points.

Future population growth in the Village is projected to be in the 2% to 3% range. An important issue that the Village is addressing is the location of future growth. The constraints imposed by the Agricultural Land Reserve and steep topography combine to provide the Village with few options.

The Village is presently considering a major development proposal south of the Trans Canada Highway. The proposed development has the potential for 1,000 residential units and some limited commercial development. Access to the proposed development would be by Chase Creek-Falkland Road, which intersects with the Trans Canada west of the Village. There are a number of obstacles associated with this development in that the land is not within the Village's boundaries and is presently not serviced. Should the development proceed, the volume of local traffic on the Trans Canada Highway would increase and the existing intersection of Chase Creek-Falkland Road to the Trans Canada Highway may need to be upgraded.

There is also the issue of the highway bisecting the community in the future as development takes place south of the highway. Severance issues such as pedestrian crossings of the highway and increased use of the highway for local traffic are concerns.

### 2.1.3 Sorrento Area

The Sorrento area includes Sorrento itself as well as the Notch Hill, Balmoral, Blind Bay, Reedman Point and Cruikshank Point areas. The Sorrento area has a present population of approximately 4,500. Growth has been rapid in recent years, with an average annual population growth rate of almost 7% between 1991 and 1996.

The Trans Canada Highway plays an important role in the Sorrento area, particularly in Sorrento itself. The majority of businesses and commercial uses in Sorrento have direct access to the highway.

Given the importance of the highway to the Sorrento area, it has received a high profile in planning and other initiatives of the community. The Columbia Shuswap Regional District adopted the South Shuswap Official Community Plan as well as a zoning bylaw for the area in 1997.

The OCP sets out a comprehensive growth strategy for the South Shuswap region including Sorrento. A key objective of the OCP is the development of a town center in Sorrento. To implement the town center concept, the OCP recommends a bypass of the existing commercial area by the Trans Canada Highway. The OCP provides for the continued development of a range of residential and commercial uses in the Sorrento town center and provides for continued development in Blind Bay, Reedman Point, Eagle Bay/Wildrose Bay, Notch Hill, Balmoral and Cruikshank Point/Waverly Park area.

Various issues have been raised by the community related to the Trans Canada Highway. These include safety, travel speed, facilitating economic development in the area, and ensuring development patterns which are consistent with community objectives.

### 2.1.4 District of Salmon Arm

The District of Salmon Arm is an incorporated municipality with a population of 15,651 located on the southwestern shore of the Shuswap Lake. As a larger community, the economy is more diversified and relies more heavily on the service sector. The forest, agriculture and

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manufacturing sector are still important as the mainstays of the District's economic base.

The Trans Canada Highway presently plays a major role in the local economy in that:

- basic industries rely on the Trans Canada Highway for the transport of raw and finished materials;
- the TCH is vital to the local tourism industry and other service industries in the District.

Given the local economy's continued emphasis on forestry, tourism and the service sector, it is clear that the highway will remain a key to the future development of the economy and the community itself.

The Trans Canada Highway is also important to the community in other respects. As the highway bisects the community, it is used extensively as the primary east-west route by local traffic. It also serves to provide access to extensive commercial uses which have developed along the highway as well as the downtown area. Its use as a commuter route connecting residential and employment areas is also well established. Highway 97B intersects the Trans-Canada Highway in Salmon Arm, providing access to the Okanagan Valley.

Recent population growth rates in the District have been very high ranging between 4% and 5% per annum. While it is not expected that this growth rate can be sustained over the long term, it is expected that the District will continue to be one of the fastest growing communities in the corridor.

To properly plan for future growth, the District recently revised its Official Community Plan. The plan calls for:

- development of a new residential area known as Area B (Foothills Road area);
- focus on the downtown area in terms of revitalization and further development;
- continued development of the waterfront lands;

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- development of the airport industrial site;
- continued development of highway commercial uses along the TCH.

As future growth occurs, there will be increasing pressure on the TCH to accommodate local travel. This may conflict with preserving the existing role of the Trans Canada Highway as a primary highway route in the Province.

Issues that have been raised through discussions with District and Ministry representatives include:

- need for land use policies along the new frontage roads east of the town center;
- need for additional access management particularly between 30th Street SW and the town center;
- enhancement of the visual quality of the corridor through the District;
- improving pedestrian and bicycle access across the highway;
- traffic operations and safety including the realignment of the TCH across the Salmon River;
- providing increased access from the TCH to the waterfront;
- assessing the type of land uses to be developed along the TCH given the limited land base with highway frontage.

### **2.1.5 District of Sicamous**

The District of Sicamous is located approximately 30 km east of Salmon Arm. The community was incorporated as a municipality in 1989 and presently has a population of approximately 3,000.

The economy of Sicamous is heavily oriented to tourism, forestry and the manufacturing sector (principally forest related). The Trans Canada Highway plays an important role in providing access to the Sicamous area for tourists. It also allows Sicamous to play an important role as a service center for highway traffic as it is strategically located at the junction of 97A and the Trans Canada Highway. The Trans Canada

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Highway also plays a vital role for other sectors of the local economy such as the forestry industry.

As in many of the other communities located in the TCH corridor, the community depends on Provincial highways to provide major east-west and north-south access in the community. The Trans Canada Highway is used extensively by local traffic for commuting to places of employment as well as for shopping, recreation and other trip purposes.

Past population growth rates have varied. In the past five years, annual rates have been as high as 7.8% and as low as -1.4%. It is expected that population growth for the District will be in the 2% to 2.5% range for the next 25 years period.

As in the case of Chase, the District of Sicamous is somewhat constrained in its future development by the ALR and topography. The District's Official Community Plan and a recently prepared strategic plan places a heavy emphasis on infilling and intensification of existing urban areas. It is expected that the gradual transition in demand from single family to multiple family residential units will allow the District to accommodate growth within existing urban areas for the next ten year period.

In the longer term, the District proposes to develop areas west of the Sicamous channel and north of the Trans Canada. Development in both these areas will result in an increased level of local traffic on the Trans Canada Highway. Access to the west side of the channel is of concern in view of the need to upgrade the existing Old Spallumcheen Road intersection.

There are a number of issues that have been raised by the District concerning the Trans Canada Highway. These include:

- development of a safe access to the west side of the channel from the TCH;
- the geometry of the existing TCH - Highway 97A intersection;
- visual impact of the frontage roads throughout the community;
- an interest in exploring the development of turning lanes at intersections with local roads to alleviate congestion and increase safety;

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- increased lighting of Provincial highways;
- increased number of pull-outs and the development of entry features;
- improvement of access across the TCH for pedestrians and cyclists.

## 2.1.6 City of Revelstoke

The City of Revelstoke is an incorporated municipality located 102 km east of Salmon Arm and 148 km west of Golden. The City currently has a population of 8,356.

The City's economic growth and population growth has fluctuated over the past years in response to the construction activity associated with major hydroelectric projects. Since the early 1980's the City's economy has stabilized largely due to diversification. Presently the economy is based on forestry, tourism, transportation and public sector employment.

The Trans Canada Highway is vital to the continued stability and growth of the local economy. The tourism industry and the forest industry depend heavily on the highway for access and the transportation of goods.

Revelstoke is less dependent on the Trans Canada Highway for accommodating local traffic than some of the other communities along the TCH in that the highway virtually bypasses the community. The highway still plays an important local function in providing access to commercial uses along the highway.

Population growth in the City has been modest over the past five years with annual growth rates ranging between .5% and 1.5%.

The revised Official Community Plan addresses a range of policy areas including land use, servicing and transportation. Land use policies of the OCP provide for continued highway commercial development between the Columbia River bridge and the Highway #23 North junction. It is generally felt that the market for highway commercial uses such as accommodation and food services is saturated at the present time. However, interest remains in this type of development. The plan projects the need for some 150 new dwellings over the next five year period and identifies areas to accommodate future development. The

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only area where continued development will directly impact the TCH is the Big Eddy area. Development in this area is expected to be modest resulting in only minor impacts on the highway.

Should the Mt. McKenzie Ski area develop, upgrading of the existing intersection on the Trans Canada may be required with the potential for a second access to the ski area.

The community has identified various issues related to the Trans Canada Highway. These include:

- reduction in posted speeds along the eastern approaches to the City;
- development of additional rest areas and look-outs;
- Victoria Road intersection;
- improvement of signage; and
- upgrading the visual character of the western approach to the City.

A local committee established by Council is making various recommendations to improve the visual character of the community as a whole. The committee is placing a heavy emphasis on the TCH corridor.

Other issues which may occur as a result of future growth in the community may include:

- addressing the issue of community severance;
- upgrading of the intersection of Highway #23 North and the TCH;  
and
- better definition of access drives and increased control of access.

The present OCP recommends the retention of the existing alignment of the TCH through Revelstoke rather than establishing a new alignment.

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## 2.1.7 Town of Golden

The Town of Golden is an incorporated municipality located at the confluence of the Columbia and Kicking Horse Rivers. The Town presently has a population of approximately 4,200.

The Town's economy is based on forestry, which is responsible for 70% of the gross income in the Golden area. With the downturn in the forest industry, the Town has made increased efforts to diversify the economy. Key targets include value added wood products, manufacturing of other natural resources (e.g. silica) and tourism. The sale of the White Tooth Ski area to a private developer has resulted in plans to develop a major destination resort known as Golden Peaks. The Town's tourism industry also benefits from its proximity to natural parks and its strategic location on the Trans Canada Highway.

Like other communities in the corridor, the Town of Golden depends heavily on the Trans Canada Highway for its economic stability and growth. It also depends on the highway for access to highway commercial uses although the core area of the Town is located south of the highway itself. The use of the TCH for local traffic is presently less pronounced in Golden than in some of the other communities along the corridor.

Population growth rates for the Town of Golden have been modest over the past ten years. Recent annual growth rates have been in the 1.0% to 1.5% range.

The Official Community Plan for Golden proposes that future residential development occur in the NE sector of the community. Approximately 500 units could be developed in this area. This area is linked to the remainder of Golden by the Golden-Donald Upper Road and the TCH. If development proceeds in the NE sector, the section of the TCH between Golden-Donald Upper Road and the Highway #95 junction will experience a significantly higher level of local traffic.

The development of the Golden Peaks Resort will also have implications for the Trans Canada Highway by increasing volumes.



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## 2.1.8 Field

Field is an unincorporated community of some 270 residents located in Yoho National Park. The community is administered by Parks Canada.

The economy of Field depends heavily on Parks Canada as many employees and contractors working in Yoho National Park reside there. The tourism and transportation sectors also provide employment.

Field is located south of the TCH and has two accesses to the highway. As many residents of Field work in Lake Louise or elsewhere in the National Park, the highway is used extensively for commuting. School children (grades 5 to 12) are bussed to Golden.

Parks Canada recently prepared a plan to guide future development in the community. Only modest increases in growth are desired and provided for in the plan.

Impacts associated with community growth and development are expected to be minimal.

## 2.1.9 First Nations

Four First Nation communities are located in the corridor. Each of the four First Nations have developed or are in the process of developing plans which will impact the Trans Canada Highway.

### Kamloops Indian Band

With a population of over 1,000, the Kamloops Indian Band is the largest band with reserves in the corridor. Kamloops Indian Reserve #1 contains a wide variety of land uses including residential, commercial, industrial and institutional uses. In addition to Band member housing, cultural and other institutional facilities, the reserve contains many commercial and industrial operations operated by non-members on leased land. The majority of these existing uses are located in the Mt. Paul Industrial Park.

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The Band's reserves are not located directly on the Trans Canada Highway. However, the Yellowhead Highway runs through the reserve and connects with the Trans Canada Highway at the Valleyview Interchange immediately south of the reserve.

The Kamloops Indian Band has ambitious plans for the further development of Reserve #1. In addition to continued development of band member housing and the Chief Louie Center, there are a number of major market oriented developments proposed. These include:

- **Mt. Paul Industrial Park.** Development of the Mt. Paul Industrial Park will continue with an additional 100 acres available for development.
- **Shuswap Landing.** A total of 175 acres located between the Halston Connector Road, the Yellowhead Highway, Junction Road and the CN tracks is proposed for development. Proposed uses include housing, retail, entertainment and highway oriented commercial uses.
- **Mt. Paul Tram.** A proposal is being entertained for the development of a tram line and associated commercial uses for Mt. Paul.
- **Sun Rivers.** A major residential development consisting of 2,000 residential units, golf course and retail areas is being constructed on the benchlands above the Chief Louie Center.

The impact of these developments on the Yellowhead and Trans Canada Highway would be high particularly on the Valleyview Interchange.

**Little Shuswap Indian Band**

The Little Shuswap Indian Band has five reserves in the corridor although most of the development is located on Quaaout #1 Reserve located on the Thompson River at the east end of Little Shuswap Lake. Development on Quaaout #1 Reserve includes a variety of uses including resorts, lakefront cottages, light industrial uses, townhomes and a variety of band related uses including community halls, administration buildings, fire hall and a church.

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The Band has an on-reserve population of approximately 113 with 121 Band members living off reserve.

The Band is proposing additional development on Quaaout #1 Reserve including:

- Development of a 27 hole golf course and related housing development
- Expansion of the Quaaout Lodge.
- Retail commercial area in the vicinity of the Bannock Hut.
- Casino on locatee lands on the Chum Creek side of the reserve.

Most of this development is expected to take place within the next five years, and work on the golf course has already started. Additional townhome development is also contemplated and the Band intends to develop additional museum and heritage oriented facilities on the reserve.

Further development of the Band's lands may have implications for the Squilax Bridge access and egress.

### **Adams Lake Indian Band**

The Adams Lake Indian Band has seven reserves in the corridor. Most of the Band's 360 members live on the Sahhaltkum Reserve #4 located on the north side of the South Thompson River across from the Village of Chase.

The Band believes that the further development of Switsemalph Reserve #6, some of which is located within the District of Salmon Arm, has potential for development to a variety of commercial and industrial uses. The Band has been working with the District of Salmon Arm to provide for the servicing and development of these lands. Much of the Band's lands front directly onto the Trans Canada Highway and therefore will directly impact the highway.

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## **Neskonlith First Nation**

We were unable to meet with the Neskonlith First Nation during the preparation of this report, therefore specific information about potential development was unavailable.

The Neskonlith First Nation has three reserves in the corridor and a population of 209. A number of the reserves front directly onto the Trans Canada Highway such as Neskonlith Indian Reserve #2 located west of Chase and Neskonlith Indian Reserve #3 which is located within the boundaries of the District of Salmon Arm. In particular, Reserve #3 has significant development potential to a variety of commercial and industrial uses. As the reserve also fronts onto the Trans Canada Highway, it has the potential to impact the highway.

## **2.1.10 Rural Areas**

### **Thompson Nicola Regional District**

The rural area with the greatest potential for impacting the Trans Canada Highway is the South Thompson Valley east of Kamloops. The Thompson Nicola Regional District has initiated the preparation of a Growth Management Strategy which will address growth and development in the South Thompson Valley. The reports prepared to date recognize the potential for development pressure in the area due to its accessibility to employment and commercial services in Kamloops.

While the Growth Management Strategy has not yet been completed, preliminary reports propose a movement away from dispersed rural residential developments to a development strategy which concentrates development in more compact and complete rural villages.

Such rural villages could be developed at Pritchard and Monte Creek. At present, the TNRD is considering a number of development proposals for the Pritchard area. The Thompson Nicola Regional District has enacted Official Community Plans and zoning bylaws for much of the South Thompson Valley. Revision of these plans and bylaws will in all probability occur once the Growth Management Strategy is adopted.

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The potential for development in the South Thompson Corridor is high and its impact on the Trans Canada Highway will be significant. Many of the reports prepared by the TNRD in support of the Growth Management Strategy stress the need for a cooperative approach between the TNRD and the Ministry in defining future development policy for the South Thompson area.

**Columbia Shuswap Regional District**

There are settled rural areas within the Columbia Shuswap Regional District which could impact the Trans Canada Highway in the future. The major area - Sorrento - has already been discussed.

Many of the other unincorporated communities and areas also depend heavily on the Trans Canada Highway. These include:

- Squilax, Anglemont and the North Shore of Shuswap Lake
- Deep Creek
- Sunnybrae/White Lake
- Sicamous Rural Area
- Revelstoke Rural Area
- Golden Rural Area

A number of these communities and rural areas do not have any form of planning or land use regulation. These include:

- Anglemont, Scotch Creek, Magna Bay, Celistia and the north shore
- Sunnybrae/White Lake
- Golden Rural area

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## 2.2 Traffic Characteristics and Growth

The review of traffic characteristics and growth projections were designed to assess the general role and function of the Trans Canada Highway. The review included historic and current traffic conditions as well as future conditions projected based on community and economic growth, and historic traffic characteristics. This information will ultimately be used to evaluate projected conditions on the TCH, to identify potential problems and to assess alternative strategies toward managing internal and external traffic in subsequent stages of the Corridor Management Plan process. The current and forecast conditions are highlighted below.

### 2.2.1 Current Traffic Characteristics

Background data and analysis provided an indication of the current role and function of the Trans Canada Highway between Kamloops and the Alberta border. The overall features are highlighted below.

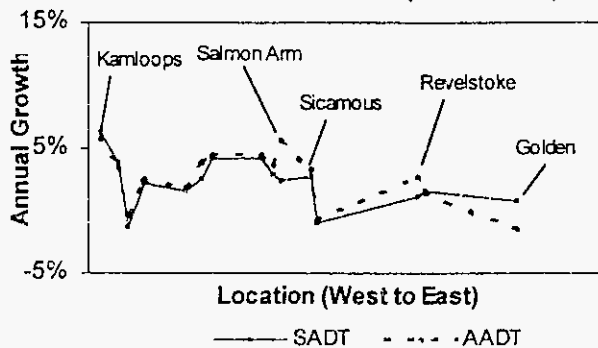
The TCH traverses through several communities between Kamloops and the Alberta border, and provides connections to numerous provincial highways that accommodate travel throughout the province. The primary features of the TCH — such as operating speed, number of lanes, classification, surrounding land uses and terrain — vary significantly throughout the study area and affect various types of travel. In order to distinguish between these differing sections of the Highway, 36 segments were established in which to assess the traffic characteristics presented within this report.

Summer average annual daily (SADT) and average annual daily traffic (AADT) volumes are also different throughout the corridor. In the western sections of the highway, both the SADT and AADT volumes are significantly higher than in the eastern areas. The overall differences between SADT and AADT, however, are found to be generally consistent throughout. This pattern indicates that the tourism travel component on the TCH is relatively constant.

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**Historical Traffic Growth (1988-1996)**



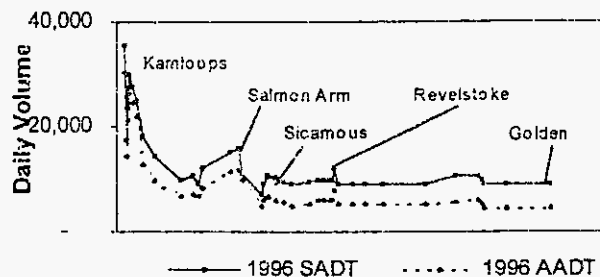
Historically, the relationships between SADT and AADT volumes on the TCH have not changed over the last 10 years. Since 1986, the opening of the Coquihalla Highway made winter travel to the Lower Mainland

and other parts of the province more attractive, thus reducing the spread between SADT and AADT. The more recent trends would indicate that tourist travel on the TCH as not changed dramatically over the last couple years.

Throughout the subject section of the TCH, daily traffic volumes are generally highest on Thursdays and Saturdays. The combination of local work/shopping/personal business trips and

recreational travel during these days of the week are the primary factors contributing toward this pattern. During a typical weekday, approximately 80% of the daily trips occur between 8AM and 8PM. In the western sections of the corridor, the reported traffic volumes are relatively even throughout this period, with slightly higher levels during the morning and afternoon peaks. In the eastern areas of the highway, the later afternoon and early evening periods account for the largest proportion of the daily travel on the TCH. This pattern is reflective of the general location of these communities to other urban centres and the large proportion of tourism-based travel on the highway.

**1996 SADT and AADT**



Historical SADT and AADT volumes on the TCH between 1988 and 1996 have increased at a rate of 2.8% and 3.5% per year, respectively. Both growth rates have been considerably higher in the western sections of the corridor, where annual increases have reportedly been as high as 6%. Overall, the average daily patterns are consistent with those recorded for the last 20 to 30 years on the TCH. The Design Hour

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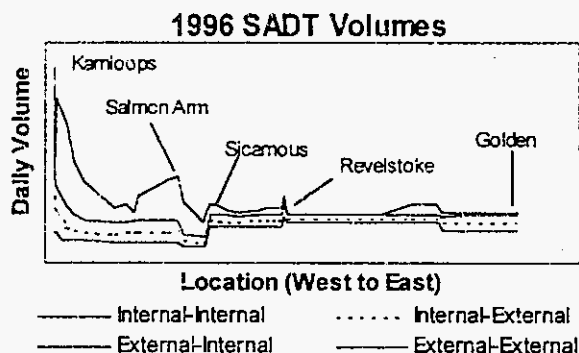
recorded for the last 20 to 30 years on the TCH. The Design Hour Volumes (DHV) have also grown at a rate of approximately 3% per year, confirming a consistency with daily traffic volumes.

The composition of vehicle traffic on the TCH provides an indication of the daily patterns, and can dramatically affect the operation of the Highway. During summer months, passenger vehicles and pick-ups/vans account for the largest proportion — average of approximately 85% — of the vehicles on the TCH. Recreational vehicles and buses represent approximately 7% of the daily summer traffic. Commercial vehicles — such as light trucks, heavy trucks and logging trucks — also account for approximately 7% of vehicle travel on the highway.

Trip Purpose (Summer)	
Work —	17.9%
Shopping —	6.9%
Personal Business —	10.5%
Recreation (1 Day) —	7.1%
Recreation (Multi-day) —	50.3%
Commercial Traffic —	7.3%
Total —	100%

During the summer months, over 55% of the vehicle trips on the TCH are reportedly recreational trips, a majority of which are multi-day. A significant proportion of the multi-day trips are generated to and from communities beyond the immediate area of the TCH corridor. Work, shopping and personal business trips — which are generally made to communities adjacent to the highway — account for approximately 35% of the summer daily traffic. These

patterns highlight the local, provincial and national roles and functions of the TCH between Kamloops and the Alberta border.



The extent of internal and external traffic is different on each segment of the TCH between Kamloops and the Alberta border. In the western section of the corridor, internal trips (to and from communities adjacent to the corridor)

are significantly higher than in the eastern areas; particularly between Monte Creek and Kamloops. Although, externally related trips are essentially balanced throughout the corridor, these trips account for a large proportion of vehicle travel on the TCH in the eastern areas.

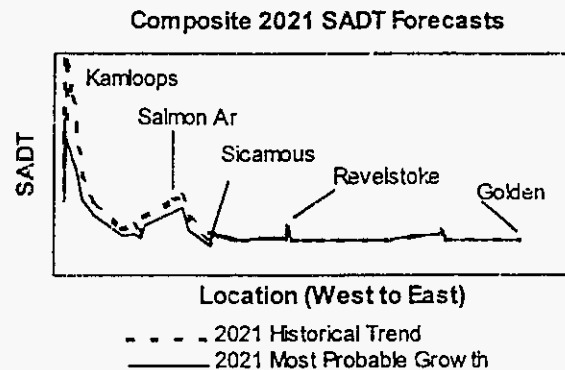


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## 2.2.2 Future Traffic Projections

Socio-economic changes, both provincially and in communities immediately adjacent to the corridor, will add to the current traffic demands on the TCH. The factors that will affect future internal traffic between communities along the TCH were combined with the external forecasts produced by Actran Consultants' work on the External Activity Overview Study. Externally generated traffic on the TCH included trips that originate and / or are destined to communities beyond the immediate corridor. The 25 year SADT projections were prepared for each trip type — including work, shopping, personal business, recreation and commuter trips. Overall, the external traffic demands for this section of the TCH are projected to grow by 42% to 46% over the next 25 years. Because the projections of external traffic indicate that all trip types will grow at constant rate, it is reasonable to assume that the historical relationships previously highlighted will not change with the projected growth along the TCH.



Internal traffic growth was projected using two methods:

- Trend growth; and
- Population based growth.

The trend growth scenario was projected using the historical rates of change recorded along various segments of the TCH over the last 10 years. Population-based growth scenarios were prepared for a high, low and most probable levels of change within communities along the corridor. The trend growth scenario produced varied forecasts throughout the corridor, because of the high growth rates experienced in the western sections. The high and low growth projections of internal traffic on the TCH were established based on population growth estimates for communities immediately adjacent to the corridor.

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Population growth factors considered the ability of each community to accommodate growth (services, property).

The most probable growth scenario reflected both the average population forecasts for each of the communities and actual traffic forecasts on the TCH in the Kamloops area based on the City's transportation model. The most probable growth scenario was recommended for the purpose of assessing future traffic conditions on the TCH. Overall, the growth estimates indicate that internal traffic along the TCH would increase by approximately 40 to 80% over the next 25 years. The 2021 composite SADT and AADT volumes along the TCH are summarized in Table 2.1.

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**Table 2.1**  
**2021 SADT and AADT Forecast Volumes for the Recommended Growth Scenario**

Segment	1996 Volume		Average Annual Compound Growth		2021 Volumes	
	AADT	SADT	AADT	SADT	AADT	SADT
10	30,110	35,370	1.8%	1.9%	47,400	57,219
13	14,280	17,290	1.7%	1.8%	21,894	26,902
17	26,330	29,840	2.1%	2.1%	43,998	49,961
20	24,510	27,430	1.7%	1.7%	37,394	41,592
30	22,025	25,010	1.7%	1.7%	33,600	37,966
33	12,985	18,045	1.7%	1.7%	19,629	27,267
37	9,900	14,470	1.7%	1.7%	14,913	21,798
40	6,800	9,900	1.6%	1.6%	10,155	14,557
50	7,130	10,410	1.6%	1.6%	10,661	15,337
60	6,675	9,180	1.7%	1.6%	10,083	13,532
70	8,290	12,080	1.7%	1.7%	12,715	18,258
80	11,330	14,985	1.8%	1.7%	17,595	23,026
90	11,600	15,810	1.7%	1.7%	17,871	24,213
100	9,760	10,935	1.7%	1.7%	14,852	16,767
110	5,020	7,270	1.8%	1.6%	7,746	10,863
120	5,870	8,908	1.7%	1.7%	8,839	13,535
130	6,720	10,545	1.6%	1.5%	9,950	15,375
140	6,100	10,040	1.4%	1.4%	8,713	14,274
150	5,480	9,540	1.4%	1.4%	7,812	13,548
160	4,855	9,040	1.4%	1.4%	6,934	12,847
170	5,430	9,470	1.4%	1.4%	7,753	13,452
180	5,995	9,890	1.4%	1.4%	8,550	14,044
190	5,995	9,890	1.4%	1.4%	8,550	14,044
200	5,995	9,890	1.4%	1.4%	8,550	14,044
210	5,995	9,890	1.4%	1.4%	8,550	14,044
220	8,070	12,105	1.4%	1.4%	11,502	17,190
230	5,150	8,900	1.4%	1.4%	7,356	12,626
240	5,150	8,900	1.4%	1.4%	7,356	12,626
250	5,150	8,900	1.4%	1.4%	7,356	12,626
260	5,150	8,900	1.4%	1.4%	7,356	12,626
270	5,150	8,900	1.4%	1.4%	7,356	12,626
280	5,525	10,410	1.4%	1.4%	7,890	14,738
290	6,065	10,711	1.4%	1.4%	8,659	15,160
300	5,360	9,940	1.4%	1.4%	7,652	14,083
310	4,655	9,175	1.5%	1.4%	6,677	12,915
320	4,655	9,175	1.5%	1.4%	6,677	12,920
330	4,655	9,175	1.5%	1.4%	6,677	12,920

\*See Appendix B for segment descriptions.

## 3 Impact Overview

### 3.1 Kamloops

Kamloops is located at the west end of the corridor and is the largest municipality. It has historically been an important transportation centre as it is at the junction of two major rail lines and three major highways: Highways 1, 5 and 97. The freeway section of the highway was initially constructed as a by-pass around the southwest area of Kamloops and specifically to avoid the steep grades and dense development on Columbia Street, the previous corridor. The City has developed south, past the by-pass, and the Trans-Canada Highway once again acts as an important component of the local transportation system.

The highway has played an important role in the direction and nature of growth in Kamloops. At the eastern and western ends of the city, the highway has been a catalyst to growth, providing a fast efficient link between neighbourhoods such as Dallas and Aberdeen and the city centre. Much of the new commercial growth has been adjacent to the highway because of the easy access and high visibility.

#### 3.1.1 Existing Conditions

##### Land Use and Development

The highway has been most influenced by development south of the Thompson/South Thompson River. Local travel to/from North Kamloops is generally via the Overlander Bridge, or internal to the north shore. Existing development on Kamloops Indian Band land is relatively sparse and contributes relatively little traffic to the Trans-Canada Highway. Growth in either of these areas could have an effect on the Trans-Canada in the future, but the current scale of development, combined with attractive alternate routes to much of the city results in a small effect on the highway.

Virtually all urban development on the south side the river is within two kilometres of the highway. The south shore population is approximately 60% of the total Kamloops population, of which the city centre and southwest sectors each account for approximately 25% and the southeast

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sector 10%. Almost half of the existing commercial and light industrial development is within the southwest and southeast sectors, and adjacent to the highway.

The southwest sector includes the neighbourhoods of Sahali, Aberdeen, College Heights, Mount Dufferin, and Ironmask. In addition to residential land uses, the sector includes a wide range of land uses including retail, residential, industrial and institutional. The City's primary light industrial area, Southgate Industrial Park is located adjacent to the highway, as are the major retail shopping areas in Aberdeen and Sahali. South of the highway, the land use is predominantly residential, and is mostly single detached but includes significant townhouse and apartment developments.

Within the southeast sector, much of the development is in the valley, on a narrow band of land between the steep hillsides and Trans-Canada Highway. There are relatively large residential developments on the benches to the south, namely Rosehill, Juniper Ridge and Barnhartvale. The land uses in the benchlands are almost entirely residential, with a small amount of local commercial land use in Barnhartvale. There is a small amount of development in a few areas between the Trans-Canada Highway and South Thompson River. Industrial uses predominate near the Valleyview Interchange with residential prevalent in other areas. The bulk of the development in the southeast is in the valley, parallel to the south side of the highway. Through Valleyview, the development adjacent to the highway is primarily highway commercial land uses, with residential immediately to the south. Industrial development in the southeast is located in Valleyview, between the highway and river, and in the Campbell Creek Industrial Park. The industrial park is relatively spread out with a significant amount of vacant land.

### Transportation Network

The existing highway characteristics, including 1996 SADT and AADT volumes, number of lanes, facility type and major intersections are summarized on Figure 3.1. The volumes through southwest Kamloops (freeway section) are the highest on the corridor. Despite the high total volumes, the external to external SADT volumes in Kamloops are lower than those on the eastern half of the corridor. Traffic with at least one origin/destination within the corridor accounts for 85% of the summer

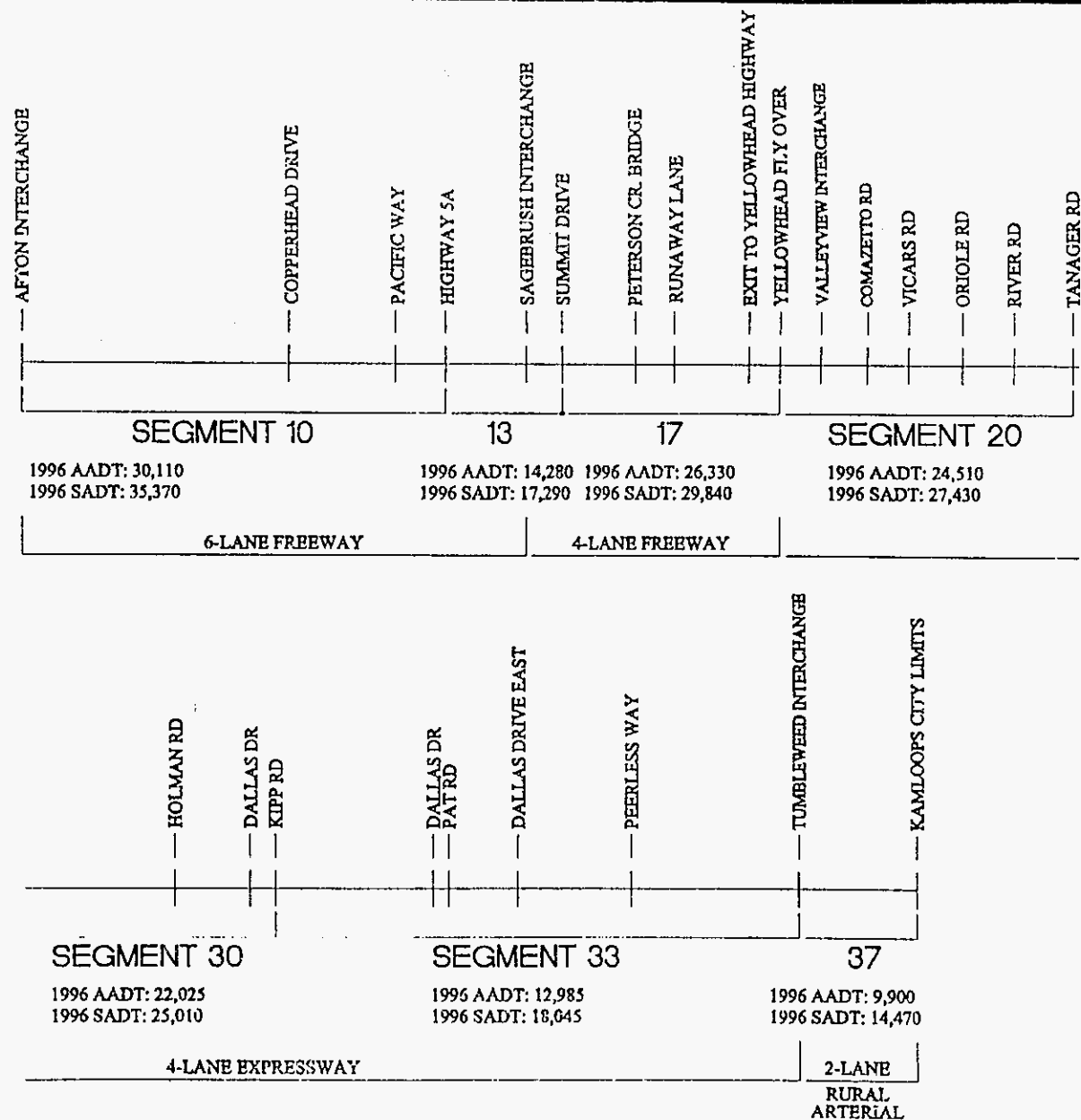


FIGURE 3.1  
HIGHWAY CHARACTERISTICS - KAMLOOPS

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traffic on Segment 10. Segment 13 (Columbia Street to Summit Drive) carries little local traffic, therefore the proportion of internal traffic is much lower than on the segments to the east and west. Internal to internal traffic on segments 20 to 37 represents over 50% of the total traffic on the highway – only Salmon Arm has similar internal traffic proportions. Internal traffic represents a considerably lower proportion of the total traffic in all other areas. Additionally, due to the amount of local traffic, the traffic characteristics remain similar in summer and winter.

The freeway portion of the TCH extends from the Afton Interchange to the Yellowhead Highway. There are seven interchanges, with full interchanges at Afton, Copperhead Drive, Pacific Way, Highway 5A and Valleyview (Yellowhead Highway). The partial interchanges at Columbia Street and Summit Drive provide full movements between them. Because of the short distance between Pacific Way and Highway 5A, a collector-distributor road connects these interchanges on the north side of the highway.

East of the Valleyview interchange, there are two interchanges (Kipp Road and Tumbleweed), four signalized intersections (Vicars Road, Highland Road, River Road, and Tanager Road), and six unsignalized, stop-controlled intersections. There are no direct property accesses to the Trans-Canada Highway in Kamloops. The highway is a four-lane expressway west of the Tumbleweed Interchange, then becomes a two-lane rural arterial highway.

The grade varies between the Afton Interchange and Yellowhead Highway and reaches a maximum of 6.3%. East of the Yellowhead Highway, the grade is relatively flat. On the steep uphill (westbound) section from the Yellowhead Highway to Pacific Way, the vehicle type mix creates a wide range in speeds. Additionally, the mixture of local and through traffic is perceived to present a problem for movements between highway ramps and through lanes.

Travel to the city centre from the southwest and southeast sectors make up much of the local demand for highway use. The segment volumes along the freeway section of the highway

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demonstrate the degree of local use. The AADT and SADT volumes on Segment 13 (Columbia Street to Summit Drive) are about half of those on Segment 10 (west of Columbia Street). In the pm peak hour, approximately 60% of the traffic on the TCH westbound between Columbia and Highway 5A accesses the TCH at Columbia Street, reflecting the high component of commuter traffic. The reliance on the highway for travel between Aberdeen and other areas of the city is high, and Hillside Drive/Notre Dame to the Summit Extension or Columbia is the only alternate route.

In the southeast sector, there is no continuous alternative to the highway for access to the city centre. In Valleyview, Valleyview Drive could be used, but throughout the rest of the southeast sector the Trans-Canada Highway is the only alternate route.

### 3.1.2 Future Conditions

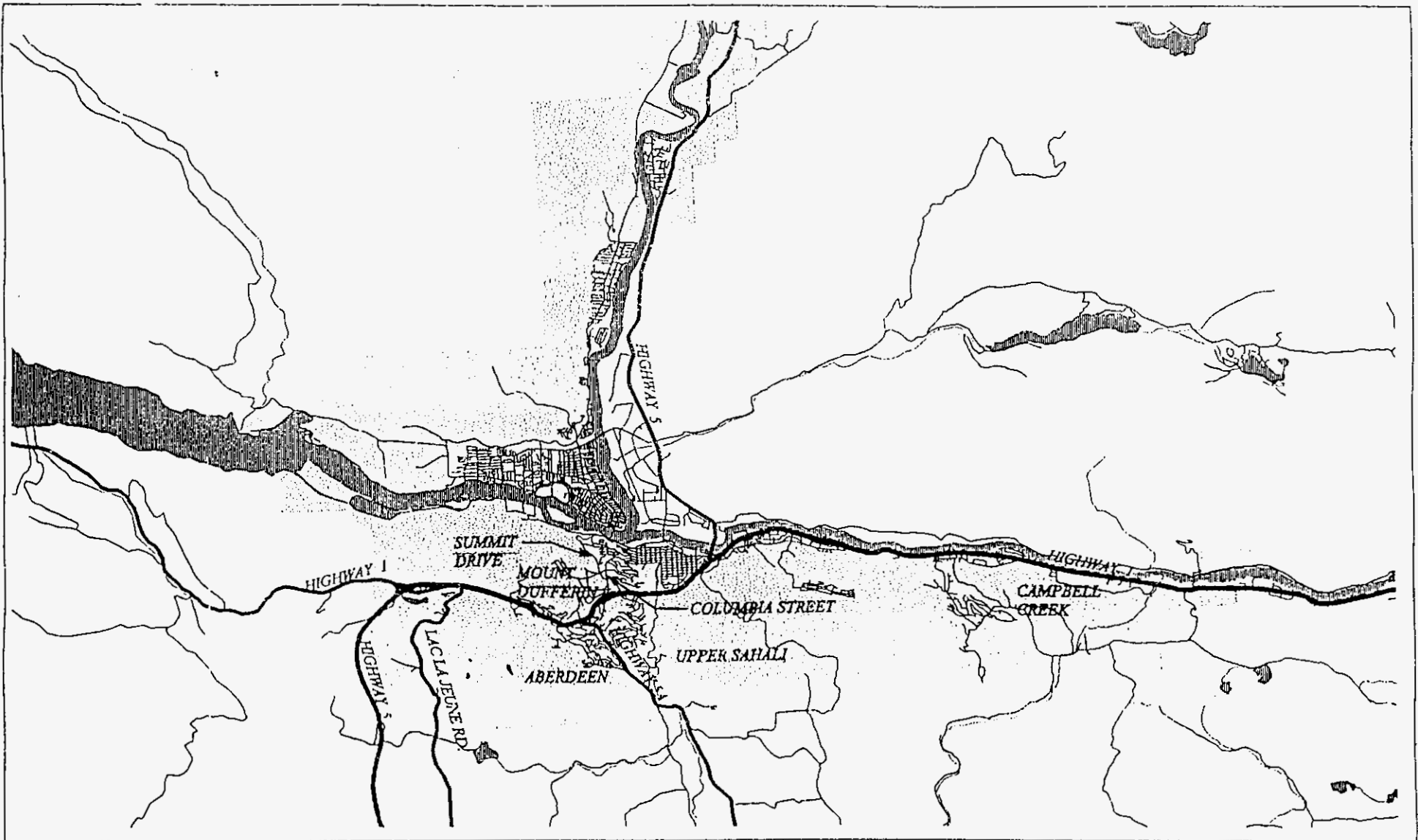
#### Land Use and Development

The growth projected in the City's Official Community Plan (Kamplan) is anticipated to be 100,000 by 2010 and 120,000 by 2020. Most of the land required for development to the 100,000 population is zoned. Growth in the southwest and southeast sectors will have the greatest effect on the performance of the highway. It is expected that the southwest will account for 40% of the City's population growth to 2010, and 60% of the new growth between 2010 and 2020. This results in future populations of 28,000 and 40,000 in the southwest sector respectively.

Most of the residential growth will be concentrated south and west of existing development in Aberdeen, south of the existing Upper Sahali development, and in the Mount Dufferin area. Most of this new residential development will be south of the Trans-Canada highway, or will be near the highway. These areas are shown on Figure 3.2.

New residential development in the southeast sector is expected in the bench areas above Valleyview. In particular, there is significant pressure for new development in Juniper Ridge. Some residential development is also expected in the valley, specifically in the Dallas, Barnhartvale and Campbell Creek areas. The southeast is expected to account for 11% of City's population growth between now and 2020.





- Road
- Local Roads
- Major Roads
- Trans-Canada Highway Corridor
- Road
- Local Roads
- Major Roads
- Water Bodies
- Watercourses
- Incorporated Areas



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Figure 3.2  
 Development Areas - Kamloops

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Commercial, industrial and institutional development is expected to be high in the southwest sector. Retail development pressure will continue to be concentrated along the Trans-Canada Highway and the city's existing arterial roads, with a specific emphasis in the Sahali area. For example, the current Real Canadian Superstore proposal for the McGill/Summit/Columbia area represents a major potential retail development in this area. Some retail development is also anticipated in the Hillside/Notre Dame, Aberdeen and Versatile areas and new industrial development is expected along the western portion of McGill Road, and in Versatile. The University College of the Cariboo has expanded significantly in recent years, and this expansion is expected to continue, both in terms of facilities and students.

In the southeast, commercial development will continue to be concentrated along the highway. The existing highway commercial strip through Valleyview is not expected to expand significantly, however redevelopment of many of the properties along with intensification of uses will probably take place. Some pressure to extend the highway commercial area to the east is also expected. Most new industrial development will be in the Campbell Creek Industrial Park. There is currently a proposal to develop much of the area adjacent to the Trans-Canada Highway between Peerless Way and Dallas Drive for industrial uses.

Development on Kamloops I.R. #1 could represent a major portion of the future residential, retail and industrial growth of the Kamloops area if several of the development proposals and concepts proceed. Construction has started on the Sun Rivers development, northeast of the Chief Louis Centre. Sun Rivers is a combination residential and resort development that will include a range of housing types and a golf course. There have also been proposals to develop the area to the northwest of the Halston/Yellowhead Highway intersection for a variety of uses. Continued development of the Mount Paul Industrial Park is also expected.

### Transportation Network

Traffic volume increases are expected to be greater in Kamloops than most other parts of the corridor because of the high proportion of local trips and the stronger influence of community growth on traffic volumes

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than in other areas. AADT and SADT volumes are projected to be 51 to 67% higher in 2021 than 1996, with Segment 17 (Summit Drive to Yellowhead Highway) having the highest growth. External traffic is projected to grow at about 1.6 to 1.7%/year west of the Yellowhead Highway and 1.5%/year to the east. Total growth is expected to be between 1.7 and 2.1%/year, with the higher growth expected on the freeway section. This is a reflection of the increased growth in the southwest, and in particular the importance of the retail and commercial uses to the rest of the city and regionally.

Recent background studies have identified candidate improvements to accommodate the growing travel demand on the Trans-Canada Highway. The Kamloops Freeway Study (McElhanney, 1991) recommended that collector/distributor roads be implemented in both directions from Summit Drive to just west of Pacific Way. Also, Travelsmart recommended that an auxiliary lane (possibly a collector/distributor lane) be added in the westbound direction between Columbia Street and Highway 5A by the 120,000 population horizon.

No significant improvements are proposed through Valleyview, but as traffic volumes increase, there is the possibility for closure of intersections, or removal of specific movements at some unsignalized intersections. This potential exists at all at-grade intersections, and closure of left turns to Comazetto has been recommended recently in a study undertaken for ICBC.

The City's transportation plan, Travelsmart, has identified the need for increased local street network capacity between the Southwest Sector and the City Centre prior to the 120,000 population horizon. The connection is primarily needed to account for demand created by the new residential development. An extension to Hillside Drive, from Notre Dame to Summit Drive is expected by the 100,000 population horizon. This extension will divert portions of the Aberdeen/Mount Dufferin traffic from Columbia Street, and Trans-Canada traffic between Highway 5A and Columbia Street.

By the 120,000 population horizon, additional capacity on the local corridors in the southwest sector will be required. The city is considering two options as follows:

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- Sixth Avenue Extension: The proposed extension is a four-lane urban arterial that would connect the existing Sixth Avenue at Columbia Street to Summit Drive at Springhill. It would cross under the Trans-Canada with no connection to the highway.
- Columbia Street/Summit Drive Upgrading: Additional capacity would be provided to Columbia Street between First Avenue and Notre Dame, and Summit Drive from McGill to Springhill through a combination of road widening and intersection improvements.

### 3.1.3 Impact of Community Development on the Highway

The projected traffic volumes indicate a significant increase in local traffic use on the Trans-Canada Highway. Growth in the southwest and southeast sectors will have the greatest effect, but potential development on the Kamloops Indian Band lands may also have a significant impact on the Valleyview interchange and Trans-Canada Highway segments immediately to the east and west. The type of development will also affect the highway. In particular, highway commercial or other land uses that attract traffic from the highway can negatively impact highway performance by increasing the number of turning movements and demand for accesses, without necessarily increasing the total traffic volume.

Specific community development impacts for Kamloops are summarized as follows:

- Increased local traffic on the Trans-Canada, particularly between Highway 5A and Columbia Street.
- Construction of the Hillside Extension will have a significant effect on reducing local traffic on the highway by the 100,000 population horizon.
- Increased development in the southeast sector will significantly increase traffic on the expressway portion of the highway, including an increase in demand for turning movements on and off the highway.

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- Increased turning movements may require improved access management, which could include consolidating accesses, limiting specific movements at accesses and local roads, or closure of some intersections.
- Traffic generated by the proposed developments on K.I.B. lands will increase traffic volumes on the Trans-Canada Highway, particularly through the Valleyview Interchange.
- Redevelopment and intensification of highway commercial development will increase the demand for movements on and off the highway.
- The distance between the frontage roads and the highway will present problems for queues and traffic exiting the highway and accessing the frontage roads.

### **3.1.4 Impact of the Highway on the Community**

In the past, the Trans-Canada Highway has acted as a barrier to development to the south, and has facilitated it to the east. It no longer acts as a barrier, and is continuing to be a driving force behind development to the east and west by providing fast access to other parts of the city. The highway will therefore continue to play an important role as a cross-town arterial for Kamloops.

Improvements to the municipal street network could decrease the amount of traffic that uses the highway for very short trips, but the proportion of longer commuting trips will increase as the highway continues to be an influence on the direction of growth. Based on local area travel and development patterns, it will continue to serve as the primary east-west arterial for many areas for several years.

## 3.2 Chase

Chase is located approximately 60 km east of Kamloops at the southwest end of Little Shuswap Lake. The highway by-passes much of the village, thus there is little interaction between local development and the highway. Also, the highway has had little influence in directing development within Chase – the Village has traditionally focussed on the railway and waterfront. The highway is primarily used to move people and goods to and/or from locations outside Chase rather than within the village.

### 3.2.1 Existing Conditions

#### Land Use and Development

Virtually all development is on the northeast side of the Trans-Canada Highway. There is little development on the highway, with the exception of a small amount of highway commercial land uses at the west (Shuswap Street) and centre (Cobourn Street) entrances to Chase.

#### Transportation Network

As mentioned above, the highway bypasses much of Chase. Many internal trips are between Chase and Kamloops, however these trips do not represent a large portion of the total traffic. The 1996 AADT volume on Segment 50 (Chase west exit to Squilax Bridge) was 7,130, while the SADT was 10,410. In summer, 70% of the traffic has at least one origin or destination outside the corridor, which indicates the high proportion of tourist traffic, and the relatively low local use of the highway.

The highway is a two-lane rural arterial with a climbing lane in the eastbound direction. There are three accesses to Chase from the highway; all are at-grade, unsignalized intersections. The existing highway characteristics and 1996 volumes for the area around Chase are shown on Figure 3.3.

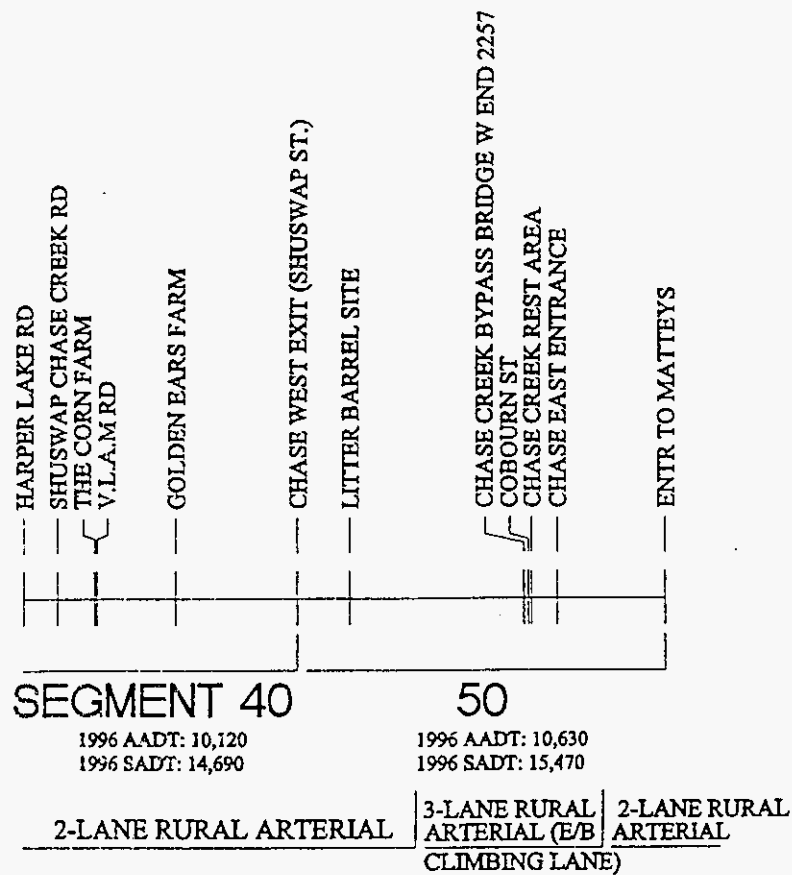


FIGURE 3.3  
HIGHWAY CHARACTERISTICS - CHASE

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### 3.2.2 Future Conditions

#### Land Use and Development

A significant development proposal for the west side of the Trans-Canada Highway is in the preliminary stages. While considerable work needs to be completed before this development proceeds, there is potential for approximately 1,000 units, consisting of a mix of single family, multi-family and mobile homes. The area in question is outside the Chase municipal boundary, but the boundary would likely be extended if the development proceeds. There would be a strong relationship between the development and the rest of Chase. The area is shown on Figure 3.4.

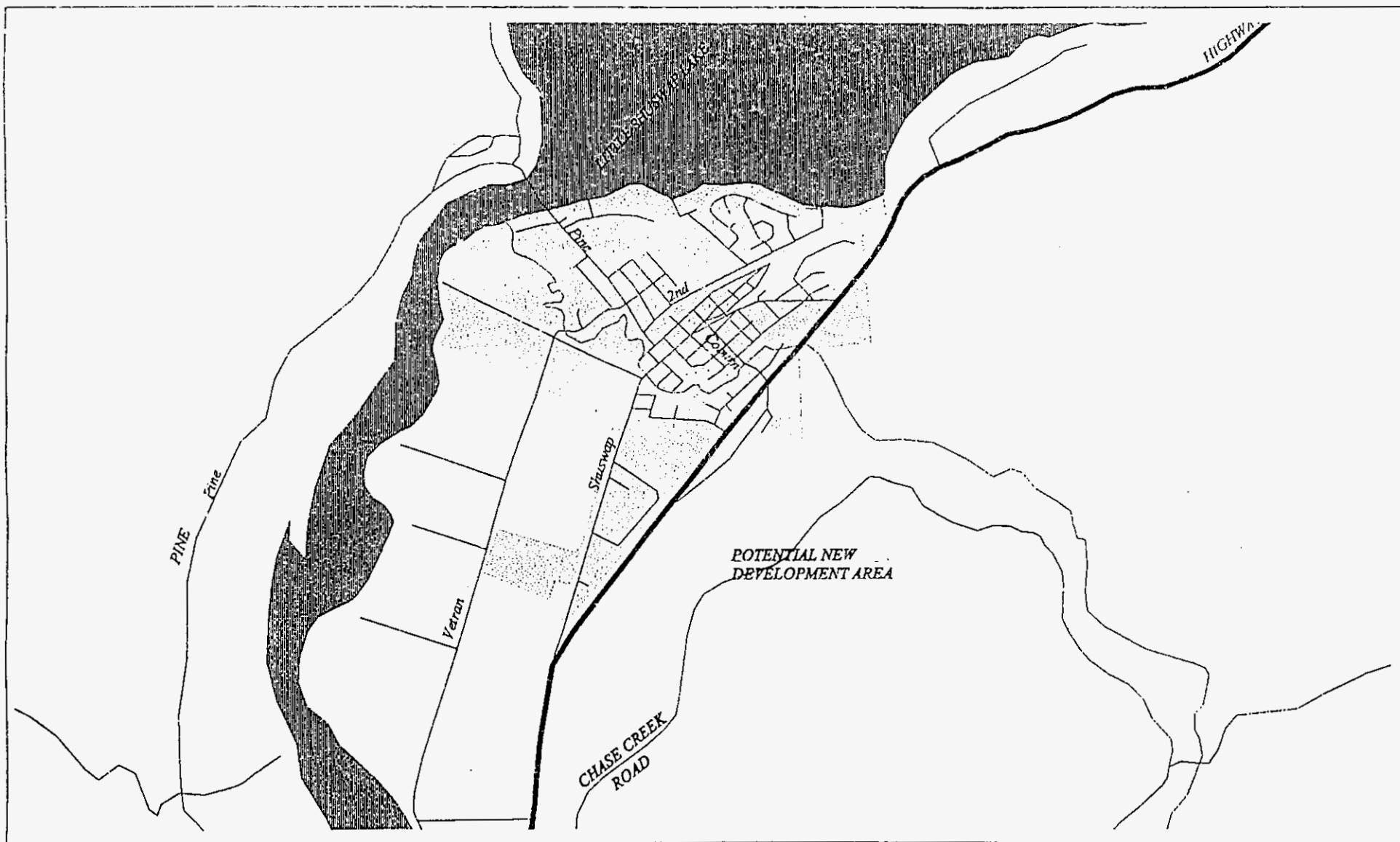
There is potential for further highway commercial development at the entrances to Chase. Unlike other communities in the corridor, highway commercial land uses are not expected to develop as a strip along the highway.

#### Transportation Network

Local traffic is expected to remain a relatively small proportion of the highway traffic if the area west of the highway is not developed. AADT and SADT growth projections for 2021 are slightly less than 50% - among the lowest in the western portion of the corridor, mostly because of the relatively small influence of internal, specifically local, traffic. The 2021 AADT and SADT volumes for Segment 50 are projected to be 10,660 and 15,340 respectively. The volumes on Segment 40 to the west are projected to be about 5% lower than on Segment 50. If the proposed development proceeds, the local traffic on both segments will likely be higher than is accounted for in the projection because the highway will be needed as a connection between the development and the rest of Chase.

There are no short term plans for improvements to the highway through Chase, and there are no plans for additional highway accesses to the Village. If a decision to proceed with the proposed development is made, a traffic impact study will probably be required. Such a study would define the impacts on the highway. This scale of development would generate a significant increase in local traffic using the highway





- Trans-Canada Highway Corridor
- Local Roads
- Major Roads
- Water Bodies
- Watercourses
- Incorporated Areas



0.6 0 0.6 1.2 Kilometers  
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Figure 3.4  
Urban Road System - Chase

because there is no connection across the highway, and topography would make such a connection difficult.

### **3.2.3 Impact of Community Development on the Highway**

If the Chase municipal boundaries are not extended, development will generally be confined to the east side of the highway. Therefore local trips on the highway will continue to be minimal. However, given the increasing number of commuting trips between Chase and Kamloops, there will be some increase in traffic volume between the two municipalities. Therefore, the impact on the highway would be minimal. If the proposed development in the Chase Creek Road area proceeds, the increase in SADT and AADT volumes could be in the vicinity of 5,000 to 10,000 vehicles per day based on the scale of development proposed. This would have a significant impact on the highway, and specifically the intersection of Chase Creek Road and the Trans-Canada Highway.

### **3.2.4 Impact of the Highway on the Community**

The highway currently operates as by-pass around Chase and has limited interaction or impact on the community. If development west of the highway takes place, either within the current boundaries, or the Chase Creek Road area, the highway and topography will act as barriers between that area and the rest of the community. Connections to the rest of Chase will be required for most basic services, including shopping, schools and employment.

## 3.3 Sorrento/Blind Bay

The Sorrento/Blind Bay area is a rapidly developing area on the southwest corner of Shuswap Lake. It has traditionally been a summer recreation area, but has recently attracted a growing permanent retirement population. Sorrento is the commercial service centre for much of the South Shuswap, and most businesses directly access the Trans-Canada Highway. The highway is also the primary route connecting the various communities that make up the South Shuswap area.

### 3.3.1 Existing Conditions

#### Land Use and Development

There are approximately 4,500 permanent residents in the South Shuswap area, with significantly more people visiting the area seasonally. The most intense residential development is in the Blind Bay area, on the north side of the highway, between Shuswap Lake and the highway. Similarly, there are several residences in Sorrento, north of the highway. There are also individual residences along the highway, but no communities or neighbourhoods. With the exception of these individual residences, the only residential development south of the highway is Notch Hill, south of Sorrento. Much of the area on the south side of the highway is within the agricultural land reserve.

Most commercial development is along the highway in Sorrento. Commercial development in Sorrento is made up of mostly highway commercial type establishments including gas stations, motels, restaurants and a small strip mall. There are other commercial establishments along the highway in other areas, but Sorrento is the only significant conglomeration of these types of uses.

#### Transportation Network

The current highway characteristics and 1996 SADT and AADT segment volumes are shown in Figure 3.5. The segment volumes indicate that the volumes on Segment 70 (Cobeaux Road to Blind Bay) are lower than those on Segment 80 (Blind Bay to Salmon River

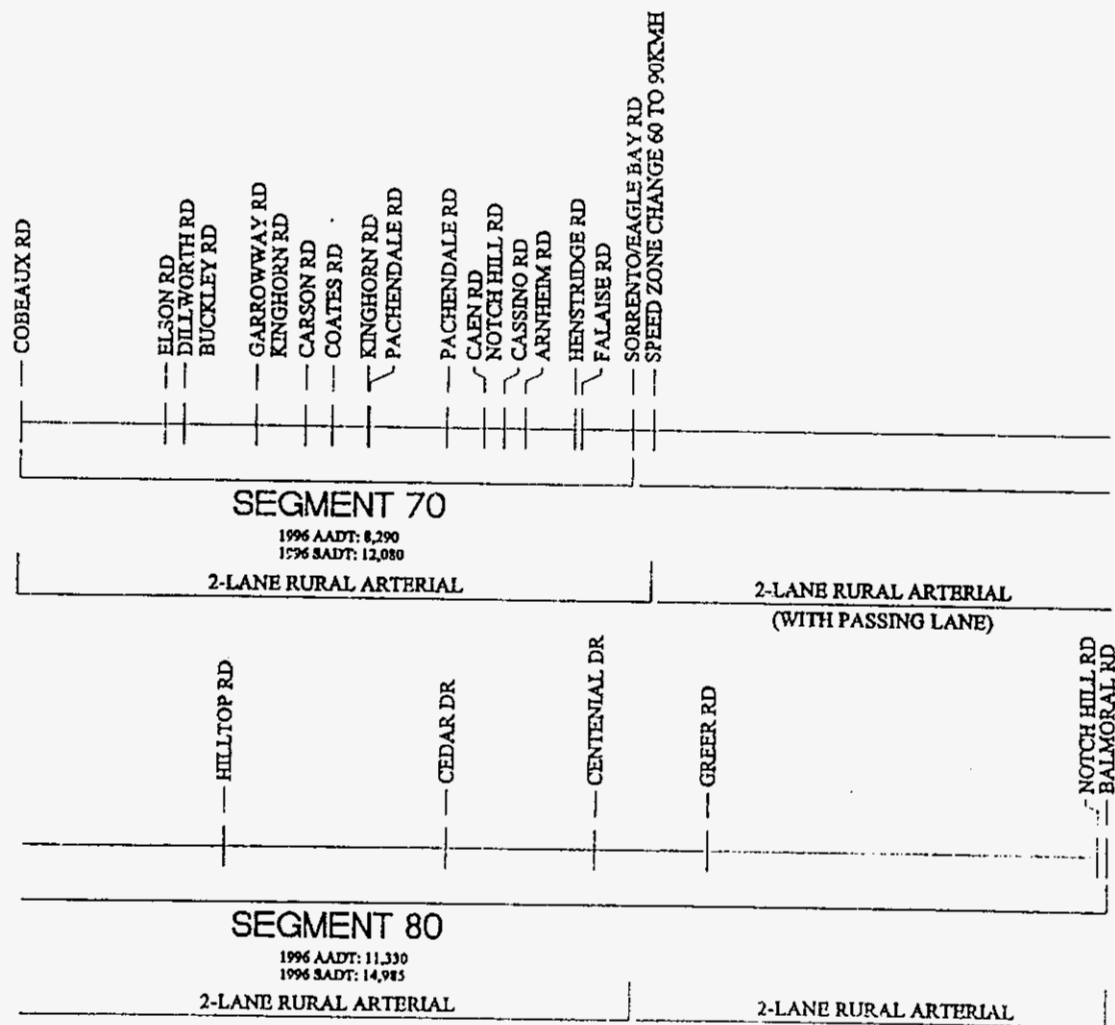


FIGURE 3.5  
HIGHWAY CHARACTERISTICS - SORRENTO/BLIND BAY

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Bridge), which is somewhat misleading. Segment 80 is a long segment and the volumes are more indicative of the conditions near the Salmon River Bridge rather than Blind Bay. Within Sorrento (Segment 70), the SADT volume is approximately 45% higher than the AADT, showing the strong influence of summer recreational activity on traffic. Despite the difference in total volume, the internal traffic proportions remain similar – 37% of SADT and 40% of AADT.

All accesses to businesses and residences along the highway are direct, i.e., there is no frontage road system. There is no traffic control on the highway, and all local road intersections with the highway are at-grade and stop controlled.

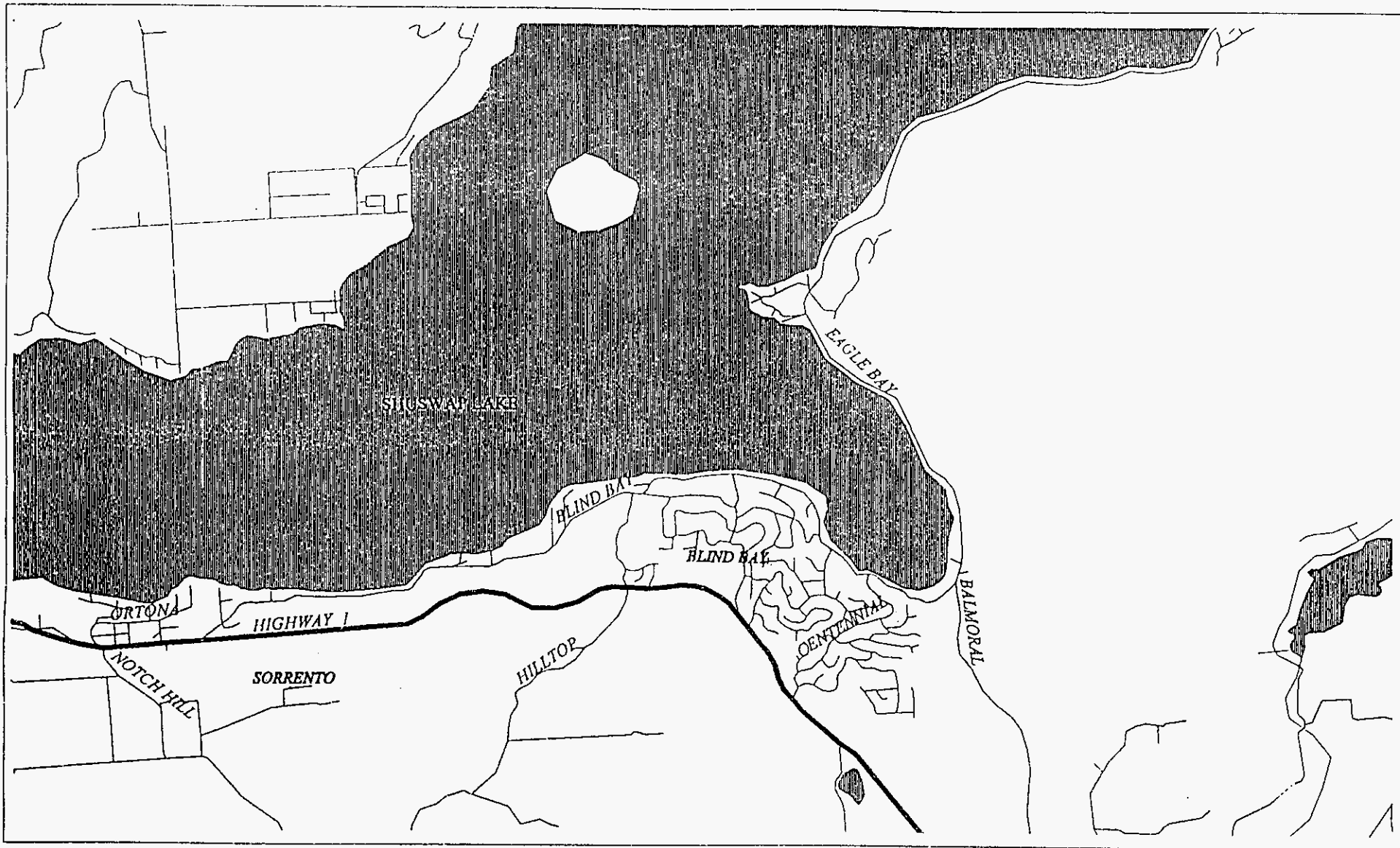
### 3.3.2 Future Conditions

#### Land Use and Development

Growth in the South Shuswap has been rapid, and high growth is expected to continue. A Liquid Waste Management Plan is currently being completed for the area, the results of which are expected to have a significant impact on the form of development in the area. One of the options being considered is a community sewer system for Sorrento and Blind Bay, which may increase the development potential of the area by allowing for significantly higher densities than currently exist. However, market demand will have a greater effect on the scale of development.

There is a desire for Sorrento to become the service centre for the majority of the South Shuswap area. Plans are for concentrated town centre development. The town centre area would include single family residences, lakefront mixed uses, general commercial, mixed commercial/residential and some institutional uses. A small amount of commercial development is expected in the Blind Bay area at the entrance to Shuswap Lake Estates. Direct business access in this area would be difficult because of the steep slope up to the highway.

The Sorrento/Blind Bay area is shown on Figure 3.6.



- Trans-Canada Highway Corridor
- Roads
- Local Roads
- Major Roads
- Water Bodies
- Watercourses
- Incorporated Areas



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Figure 3.6  
Future Development Areas - Sorrento/Blind Bay

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## Transportation Network

Through Sorrento, SADT and AADT volumes are projected to increase by 51% to 53% by 2021, to approximately 18,260 and 12,720 respectively. The internal component accounts for the greatest amount of growth in both cases, although the internal AADT growth is expected to be higher than SADT because of the increasing number of permanent residents and decreasing reliance on summer tourism related to Shuswap Lake.

In the early 1990's, several planning studies investigated options for the Trans-Canada, including:

- by-pass around Sorrento to the south;
- five-lane urban alignment, with frontage roads through Sorrento;
- junior expressway; and
- five lane urban road/junior expressway hybrid.

The bypass option is supported by many local residents and is viewed as being important to development of the Sorrento Town Centre concept. However, the previous studies noted that the bypass option has several constraints and issues to be overcome before it can be seriously considered.

No specific upgrade plans have been developed for the highway around Blind Bay, and upgrading could be difficult due to topography and ALR constraints.

### 3.3.3 Impact of Community Development on the Highway

Pressure for more intense commercial development will be significant as the South Shuswap grows. The increase in permanent residents will be particularly important as there will be a need for increased services in a more urban setting to serve the residents. This will result in greater use of the highway for local trips, particularly between Blind Bay/Eagle Bay and Sorrento. The number of turning movements to/from the highway will increase as a greater proportion of the traffic on the highway will be

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local residents accessing businesses, potentially leading to increased delays to through traffic. Finally, there will be pressure to allow even more accesses to the highway, either direct or via frontage roads.

### **3.3.4 Impacts of the Highway on the Community**

Increased access management, particularly through Sorrento, will be necessary to maintain reasonable highway performance as the community grows. Collection of driveway accesses or increased use of local roads for business access may be alternatives to frontage.

The addition of frontage roads or extra lanes, combined with increased traffic volumes will contribute to community severance effects. The effect will be greatest for pedestrians and cyclists as businesses in Sorrento continue to rely on more local business (as opposed to pass-by highway related business) than in the past. Despite this, unlike other communities, the impacts of separating neighbourhoods from the rest of the community may not be as great as in some communities as most residential development is on the north side of the highway, thus no neighbourhoods of significant size are cut-off from the rest of the community. The agricultural land reserve south of the highway will limit the scale of potential future development south of the highway.

The Trans-Canada Highway will continue to be the primary route connecting South Shuswap communities and will also continue to be the primary commercial street in Sorrento. Given the importance of Sorrento as service centre for permanent residents and the tourism industry, any highway improvements should also contribute to improving the visual quality of the area.



## 3.4 Salmon Arm

Salmon Arm is located approximately 100 km east of Kamloops at the southern tip of Shuswap Lake. It has historically been a service centre for the surrounding agricultural and forest industries. As a service centre, transportation - initially the railroad and recently the highways - has always been an important part of the district's growth. More than any other community along the corridor, the Trans-Canada Highway provides local connections and commercial frontage in addition to its role as a national and provincial highway. It is the primary east-west arterial in the District.

### 3.4.1 Existing Conditions

#### Land Use and Development

There is a significant amount of Highway Commercial development adjacent to the highway through Salmon Arm. The most intense area of highway commercial development is along the Trans-Canada highway at the west end of Salmon Arm. Land uses in this area is typical of most highway commercial uses and dominated by fast food restaurants, motels and strip malls. There are two shopping malls along the highway - the Cenatoka Mall on the Trans-Canada Highway, and the Picadilly Place Mall on 10th Avenue SW. Neither has direct driveway access to the highway. Some of the highway commercial development on the highway is located on Adams Lake Indian Band lands. Highway commercial land uses are beginning to emerge along the highway at the east end of the District as well.

Highway commercial land uses exist through the downtown area, but there is a trend to more town centre commercial uses in this area. There is strong relationship between the downtown and the highway. Not only does the highway act as an entry to the downtown, but it has essentially acted as a barrier to significant expansion of the downtown to the south. This barrier effect is beginning to diminish.

Most residential development is located to the southeast of the downtown area and the highway. A separate and distinct residential area is located in Canoe, at the northeast corner of the District. Rural residential areas are scattered throughout the District. There are three

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industrial areas along the highway through the western portion of the District as well as the Federated Co-op site in Canoe. The primary industrial growth area is the industrial park, at the southeast corner of the District along Highway 97A.

**Transportation Network**

The highway characteristics vary significantly through Salmon Arm. At the west end of the District, it is a two-lane rural highway, and becomes a four-lane urban arterial at 10<sup>th</sup> Street SW. It is currently being upgraded to four lanes from 10<sup>th</sup> St. SE to 30<sup>th</sup> Street. East of 30<sup>th</sup> Street, it returns to a two-lane rural arterial. Accesses and highway characteristics are shown on Figure 3.7. Only the segments through Kamloops had higher 1996 AADT and SADT volumes than Segment 90 in Salmon Arm. Like Kamloops, the internal component of the traffic was very high, with about 52% of traffic having both an origin and destination within the corridor. This reflects the reliance on the highway for local trips in Salmon Arm.

An access management plan was completed for the Trans-Canada Highway through Salmon Arm in 1994. From the inventory conducted for that plan, there are a total of 195 driveways and intersections between First Avenue SW and Canoe Beach Road, for a total of 15.4 intersections per kilometre. The highest density of intersections and driveways is in the downtown area where there are almost 30 intersections per kilometre. Through the entire section, driveways make up the highest proportion of accesses - over three-quarters.

The Trans-Canada Highway currently functions as the main east-west arterial. There is no continuous alternate east-west arterial road to serve as an alternative to the highway, and only two north-south arterial roads cross the highway. Most residential areas are located south of the highway while most commercial areas are on the highway or north of it (downtown). Therefore there is a high demand for use of the highway for local trips.

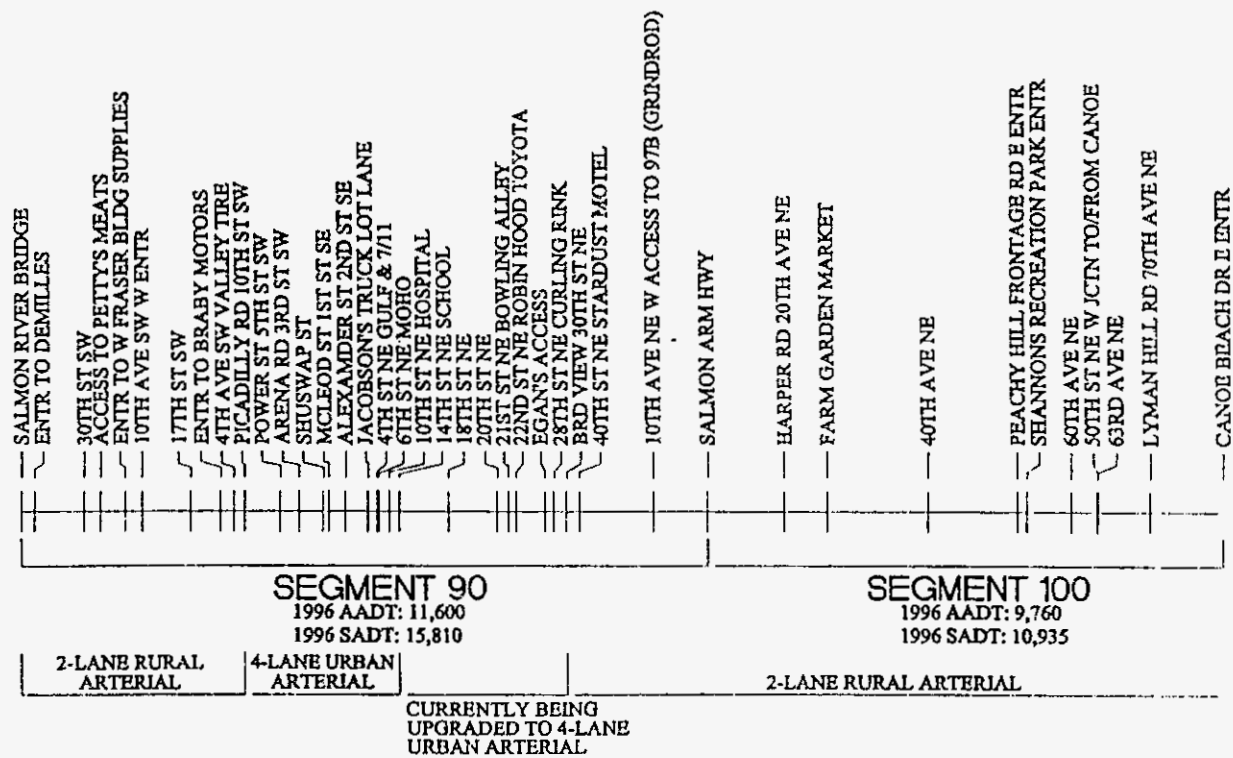


FIGURE 3.7  
HIGHWAY CHARACTERISTICS - SALMON ARM

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### 3.4.2 Future Conditions

#### Land Use and Development

Highway commercial development is expected to continue at the west end Salmon Arm and will likely intensify. Along the highway in the downtown area, the existing highway commercial development will likely evolve into more of a general and core commercial area. The Salmon Arm OCP designates both sides of the highway through the downtown as "Town Centre Commercial" and "encourages consolidation and redevelopment of highway lands within the Town Centre Commercial Area". As the waterfront area develops, the importance of the downtown as the core of Salmon Arm will increase.

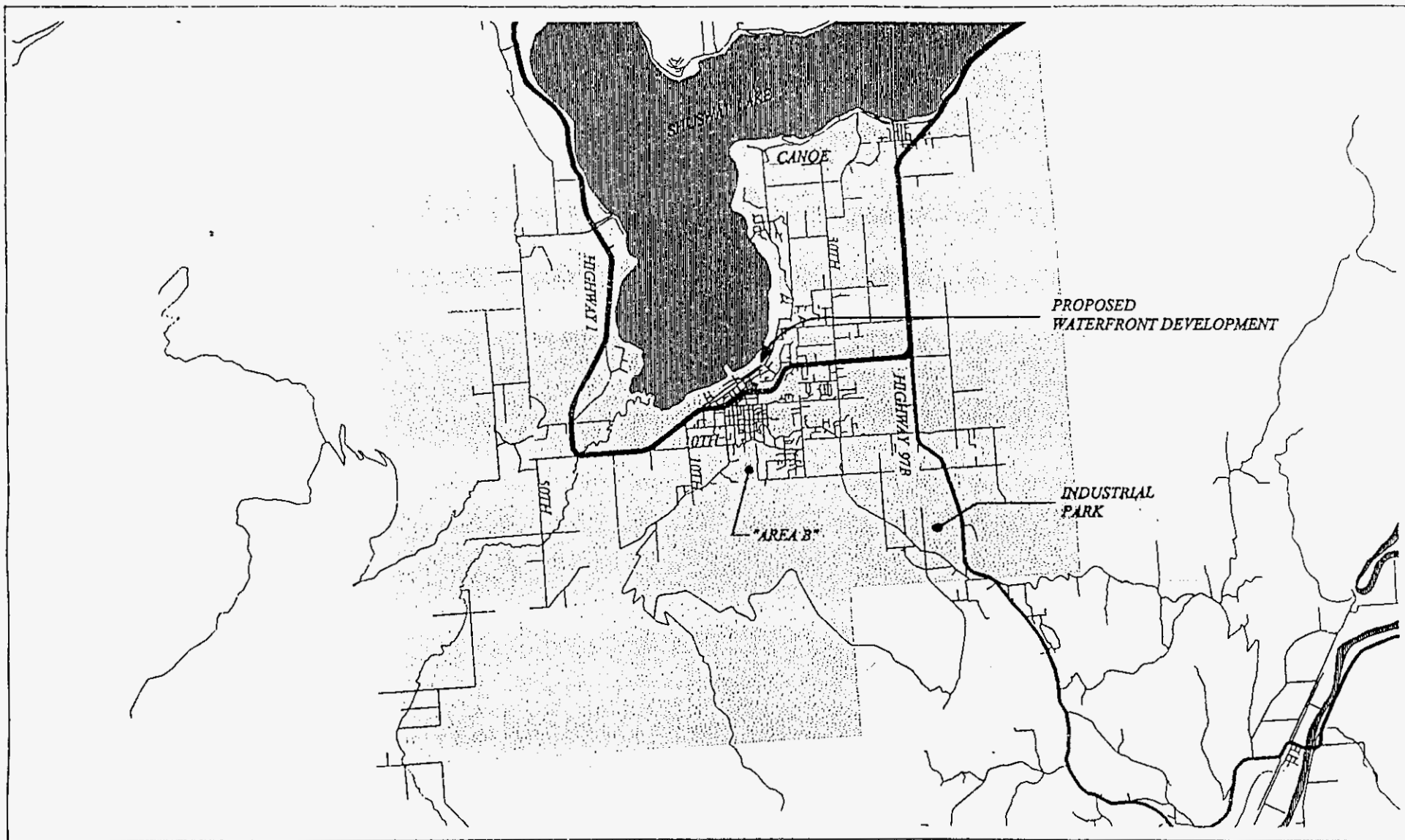
Just east of the downtown, the scale of highway commercial development will likely increase substantially. There are already signs of this starting to happen. North of Highway 97B, little increase in highway commercial or other activity is expected as the highway passes through the agricultural land reserve.








Outside the waterfront area, future residential development will be through infill and redevelopment as well as relatively large new area known as Area B (Figure 3.8), designated as low density residential in the OCP. No specific development proposals exist for Area B, but the District will be completing a Sector plan for the area in the near future. This area will likely be the next significant area of residential development in the District.

Development patterns may also be affected by the future routing of Highway 97B and the selection of the primary route to the Okanagan Valley. If Highway 97B is identified as the main route to the Okanagan, there will likely be increased pressure for highway commercial development near the junction of the Trans-Canada Highway and Highway 97B.

#### Transportation Network

The future highway volumes will vary substantially through the District, however, general segment volumes based on the most-probable population-based projection for 2021 are:



-  Trans-Canada Highway Corridor
-  Roads
-  Local Roads
-  Major Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas



2 0 2 4 Kilometers  
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Figure 3.8  
Future Development Areas - Salmon Arm

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Segment 90:	AADT	17,870
	SADT	24,210
Segment 100:	AADT	13,850
	SADT	16,770

These volumes represent growth of approximately 49 to 54% between 1996 and 2021. Internal traffic growth is expected to be higher than external growth, but external growth is expected to be strong. New growth in Salmon Arm will create a greater demand for stronger connections across the highway than for local travel on it. Also, a connection between 10th Avenue SW and Foothill Drive is indicated on the District's Major Street Network Plan. This connection will provide a continuous east-west arterial route as an alternative to the highway. Okanagan Avenue is designated as a collector street and will also provide an east-west alternative between downtown and the southeast area of the District.

The Access Management Plan recommended that a frontage road system be constructed adjacent to the highway through much of Salmon Arm to provide business access. It also recommended that all local streets intersecting the highway be reviewed to determine if access to the highway from them can be closed. The recommended potential closures include:

- 17th Street SW
- First intersection west of 10th Street SW
- 18th Street NE
- 20th Street NE
- 22nd Street NE
- 28th Street NE
- 30th Avenue NE
- 40th Avenue NE
- 50th Street NE/63rd Avenue NE
- 70th Avenue NE

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The District is currently considering construction of a railway underpass on Ross Street to better access the waterfront area. There is considerable development pressure in the waterfront area and this underpass will be important to reliable traffic flow in the downtown. As a result of both the development and street network improvements, there will probably be a shift in downtown traffic patterns and increased use of Ross Street.

### **3.4.3 Impact of Community Development on the Highway**

Given Salmon Arm's role as a tourism and industrial service centre, the Trans-Canada will continue to be important to the economic growth of the District. The pressure for increased highway commercial development on the Trans-Canada Highway is expected to continue as traffic volumes increase. As Salmon Arm grows, the existing level of development in the

existing highway commercial areas will intensify, with the greatest intensification expected between the downtown area and Highway 97B. The greatest effects of highway commercial growth are the increased demand for turning movements to and from the highway and increased demand for accesses. Businesses locating along the highway will generally be attempting to attract traffic off the highway, therefore the volume of traffic entering and leaving the highway will increase, which will in turn have an effect on the overall performance of the highway. Access management has been the main method used to mitigate these impacts in the past, it will continue to be used in the future, likely to a greater degree.

As the downtown expands, the types of land uses adjacent to the highway in the downtown area will evolve from highway commercial to more intense town centre type uses. This type of redevelopment will increase the demand for direct access for both pedestrians and vehicles.

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### 3.4.4 Impacts of the Highway on the Community

As the District grows, the highway will become a greater barrier between residential areas to the southeast and commercial development north of the highway. As frontage roads and travel or turning lanes are added, the severance effects become greater particularly for pedestrians and cyclists.

Typically, the perceived effect of access management is a negative effect on local business because pass-by traffic is unable to gain easy access to businesses. While this may occur to some degree, overall access should be improved through the use of frontage roads and combined accesses. By separating traffic accessing businesses from through traffic, turning movements to and from businesses become much easier.

Highway upgrading projects should be used as an opportunity to improve the visual quality of the corridor and thus enhance the overall visual quality of the highway within the community.



## 3.5 Sicamous

Sicamous is located at the junction of Highway 97A and the Trans-Canada Highway. It is growing retirement area and tourist destination therefore provision of tourist services is an important component of the local economy. The provincial highways have played an important role in the growth of Sicamous. Much of the District has established along Highway 97A, while a limited amount of highway commercial and other growth has taken place on the Trans-Canada Highway. The Trans-Canada Highway acts more as the access route to Sicamous from the east and west, and in particular to Salmon Arm for work, shopping and other services.

### 3.5.1 Existing Conditions

#### Land Use and Development

Most development is currently along Highway 97A, south of the Trans-Canada Highway and east of the Sicamous Narrows. A sewer system was installed in 1995, allowing for intensification of the development in the core area of the District. As a result, multiple family development is occurring in this area. Many new residential units are expected to be purchased by retirees, however vacationers from the Central Okanagan and Alberta are also expected to be a significant market. Some residential development exists north of the Trans-Canada Highway, but new development in this area has been slow.

Most retail space in Sicamous is in the core area on the west side of Highway 97A and adjacent to the waterfront. There are some highway commercial land uses such as motels, restaurants and gas stations along the Trans-Canada Highway east of Highway 97A. Industrial land uses are very limited.

#### Transportation Network

The Trans-Canada Highway and Highway 97A are two of the most important highway links in the province. Highway 97A essentially acts as the District's main street and thus serves local and through traffic needs. The Trans-Canada Highway bypasses the core area of Sicamous,

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there is some local use of the highway for access to lands to the north and because of the highway commercial land uses. A strong connection exists between Sicamous and Salmon Arm, and the highway carries a significant amount of commuter traffic. Despite the commuter traffic, overall internal traffic on the Trans-Canada through Sicamous is low, and over 60% of the traffic is external - higher than most other segments of the corridor. Through Sicamous, the highway is a two lane rural highway with partial frontage roads for highway commercial access. There are no traffic signals on the highway - all local road intersections are stop controlled. The highway characteristics, accesses and 1996 AADT and SADT volumes are shown on Figure 3.9.

Highway 97A contributes a significant amount of traffic to the Trans-Canada between Segments 120 and 130. The large majority of this additional traffic is external. Because of the amount of traffic between the Trans-Canada and Highway 97A, the westbound to southbound left turn volumes are quite high.

### 3.5.2 Future Conditions

#### Land Use and Development

Infill and intensification are the preferred priority for future development in Sicamous. As noted previously, the sewer system will lead to more intense development and increased multiple family residences than in the past. Construction of 400 to 600 multiple family units are expected in the core area over the next 10 years, but there is currently a shortage of land for single family residences. This shortage will likely speed up development of the area north of the highway. The area south of the highway on the west side of Sicamous Narrows is another possible development area single family residences, but services will need to be implemented before significant development can take place there.

Like Salmon Arm, development patterns, particularly for highway commercial land uses will be affected to a great degree by the location of the main route to the Okanagan Valley. If Highway 97A continues to be the main route, highway commercial growth will "probably be significant in the vicinity of the junction of Highway 97A and the Trans-Canada Highway. Even if Highway 97A is not the preferred route, there

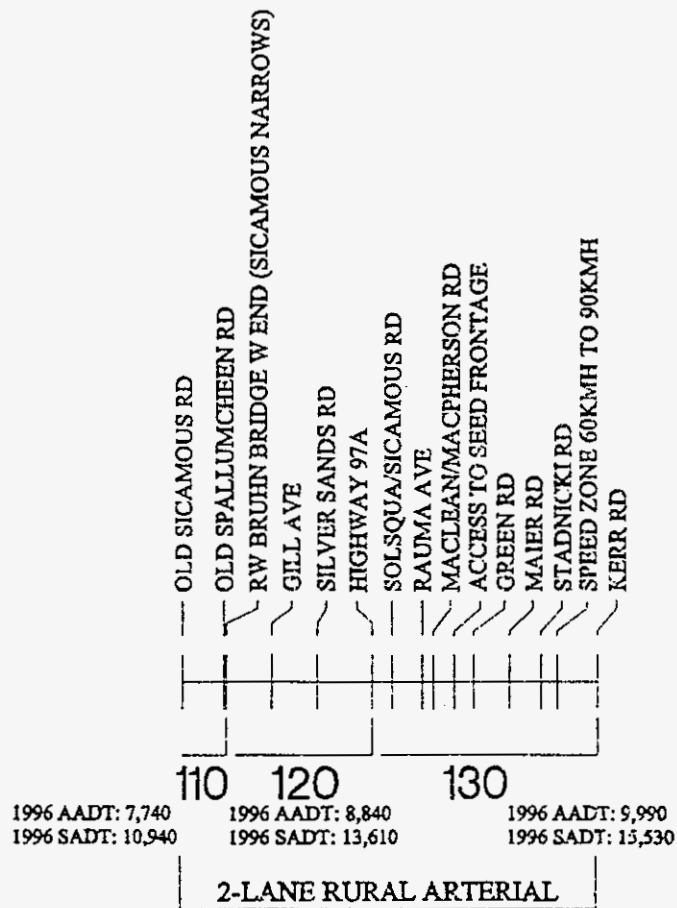


FIGURE 3.9  
HIGHWAY CHARACTERISTICS - SICAMOUS

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will likely be some growth of highway commercial land uses on the Trans-Canada Highway.

### Transportation Network

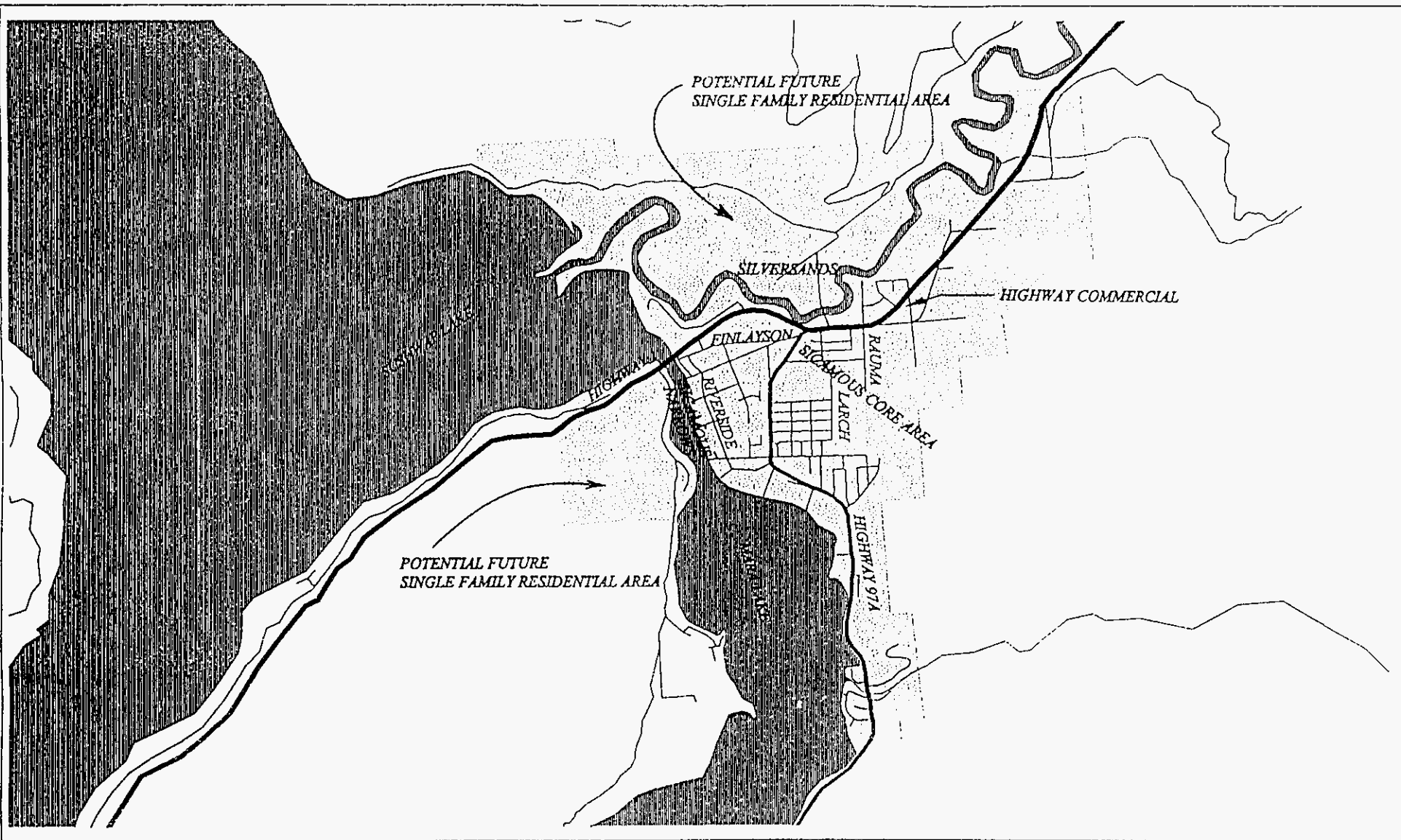
The 2021 SADT and AADT volumes are projected to be 46 to 52% higher than 1996 volumes, but the traffic composition is not expected to change significantly. The demand for local road access is not expected to increase significantly, and businesses access will continue to be via frontage roads.




A westbound passing lane is currently under construction west of the Bruhn Bridge. Long term requirements for the Trans-Canada will depend greatly on plans for connections to the Okanagan Valley. If development north of the highway takes place, there will need to be a strong local street connection across the highway.

### 3.5.3 Impact of Community Development on the Highway

Infill and intensification of existing residential development area will have minimal effect on the highway. Most local trips would not require use of the highway, and commuter traffic to Salmon Arm will account for a relatively small proportion of the overall traffic volume. Development to the north of the highway could have a significant effect. Local traffic using the highway is currently quite low, but any residential development north of the highway would require residents to use or at least cross the highway for access to most services. Development west of the Narrows will require residents to use the highway for all trips to any other part of Sicamous. This will increase volumes on the Bruhn Bridge. Provision for safe turning movements to this area will also be a challenge because of topography. These areas are shown on Figure 3.10.

Highway commercial development is expected to increase. The impact will be greatest at the intersection of Highway 97A and the Trans-Canada where the volume of turning traffic is already a concern.



-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas



1 0 1 Kilometers  
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Figure 3.10  
Future Development Areas - Sicamous

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Increased highway commercial development will further contribute the number of turning movements.

### **3.5.4 Impacts of the Highway on the Community**

Since the highway bypasses much of the Sicamous, the impacts of the highway are limited. However, there is some residential development north of the highway, and more is expected as the supply of single family residential land declines. The scale of development north of the highway will not be sufficient to justify provision of significant services such as schools and shopping, therefore there will be a need for residents of this area to cross the highway on a regular basis to access the core area of Sicamous. The area north of the highway will therefore be severed from the rest of the community, particularly for pedestrians and bicycles. The effects of severance will be even greater if the area west of the Narrows is developed because residents will be forced to travel along the highway. The community is also concerned with potential impacts of highway noise, particularly as development moves closer to the highway, and visual impacts of the corridor on the "gateway" to Sicamous.

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## 3.6 Revelstoke

Revelstoke is located on the Columbia River, between the Selkirk and Monashee mountain ranges. Transportation links are critical to the economic health of the community because of the importance of resource industries and the city's relative isolation. The opening of the Trans-Canada Highway through Rogers Pass in the 1960's was an important factor in Revelstoke's growth and economic diversification. The Trans Canada Highway and railroad are the land transportation links to the east and west, and access to locations north and south by highway is limited.

### 3.6.1 Existing Conditions

#### Land Use and Development

The Trans-Canada highway bypasses the City's downtown and much of the developed areas, therefore there are few areas where existing development interacts with the highway. The greatest degree of interaction is at the western entrance to the City, just east of the Columbia River Bridge. The land uses adjacent to the highway in this area are mostly highway commercial. The only other area in the City designated for highway commercial uses is along the highway at the eastern boundary of the City.

Development of the area adjacent to the highway at Victoria Road and Highway 23 North has been relatively recent, and there is still a limited amount of vacant land available in this area for future development. Uses are typical of highway commercial areas. At the eastern entrance, there has traditionally been little highway commercial development, but a new motel has recently been constructed in conjunction with a heli-ski, which may help to spark other related development in this area.

With the exception of these two areas, there is virtually no development on the highway. West of the Columbia River Bridge, there is some roadside development within and outside the City limits, but it is relatively sparse.

The only areas of development within the city that would contribute local traffic to the highway on a regular basis are Big Eddy, south of the

highway on the west side of the Columbia River and Columbia Park, north of the highway. Current development in Big Eddy is varied, ranging from single family homes to acreages, light industrial, commercial and mobile homes. In general, the density of development is quite low. The area has a population of about 1,500 to 2,000 people.

### **Transportation Network**

The highway is a two-lane highway through Revelstoke. Access to businesses is via frontage roads at the west end of the city and a local road at the east end. There are two traffic signals on the highway: one west of the Columbia River Bridge at Highway 23 South; and the other at Victoria Road. There is also an interchange about 1.5 km east of Victoria Road to Mt. Revelstoke National Park. There are few municipal roads that intersect the highway, and only Victoria Road crosses the highway (it becomes Laforme Road north of the highway).

Segments 210, 220 and 230 pass through Revelstoke. AADT and SADT volumes on Segment 220 are just over 8,000 and 12,000 respectively. The volumes on the segments to the east and west are lower. To the east both the AADT and SADT are about 2,000 vehicles/day lower, while to the west both are about 3,000 vehicles/day lower. Summer traffic in this area has very high external and tourism components. The internal trips are relatively low, with virtually no commuter trips. Most local trips on the highway are for access to the highway commercial development on the highway. The highway characteristics and 1996 volumes are shown on Figure 3.11.

## **3.6.2 Future Conditions**

### **Land Use and Development**

No expansion of the highway commercial areas or other development adjacent to the highway is planned. There is vacant land that will probably be developed in the Victoria Road area, while the highway commercial land at the eastern boundary of the City is virtually undeveloped and will probably see greater development pressure once the other highway commercial area has been developed to its full potential.



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The City has an ample supply of residential land. There is some potential for further development in Big Eddy, but it is limited and has not been identified as a priority development area. There is potential for modest infill of about 50 units out of 1,000 planned for the City. Available land for residential development in Columbia Park will allow for about another 70 units. The largest area of available vacant land for residential development is the Arrow Heights area in southern part of the City. The potential development areas are shown in Figure 3.12.

### **Transportation Network**

No additional local road intersections with the highway are planned. Future traffic characteristics are not expected to be substantially different than today, except that volumes are projected to about 42 to 43% higher by 2021. External and tourism traffic will continue to be major components, and local Revelstoke traffic will be low, with the exception of Segment 220. Residential development east and west of the city is not expected to be significant, therefore commuter and other local traffic should be minimal.

### **3.6.3 Impact of Community Development on the Highway**

The highway commercial development and Columbia Park residents account for much of the difference in traffic volume on the highway between Segment 220 and those to the east and west. At the eastern entrance to the city, future highway commercial development will increase the demand for turning movements to the access road. Given the topography and current access conditions, there should be little demand for new direct access to the highway. Overall, because of the limited area designated for highway commercial development, surrounding topography, and existing access conditions, this type development should have limited future impact on the highway in Revelstoke.

Potential development in Big Eddy may increase highway traffic volumes because there are limited alternative accesses to the rest of the city, leaving the highway as the most feasible connection. Similarly, traffic from Columbia Park has no reasonable alternative to crossing the

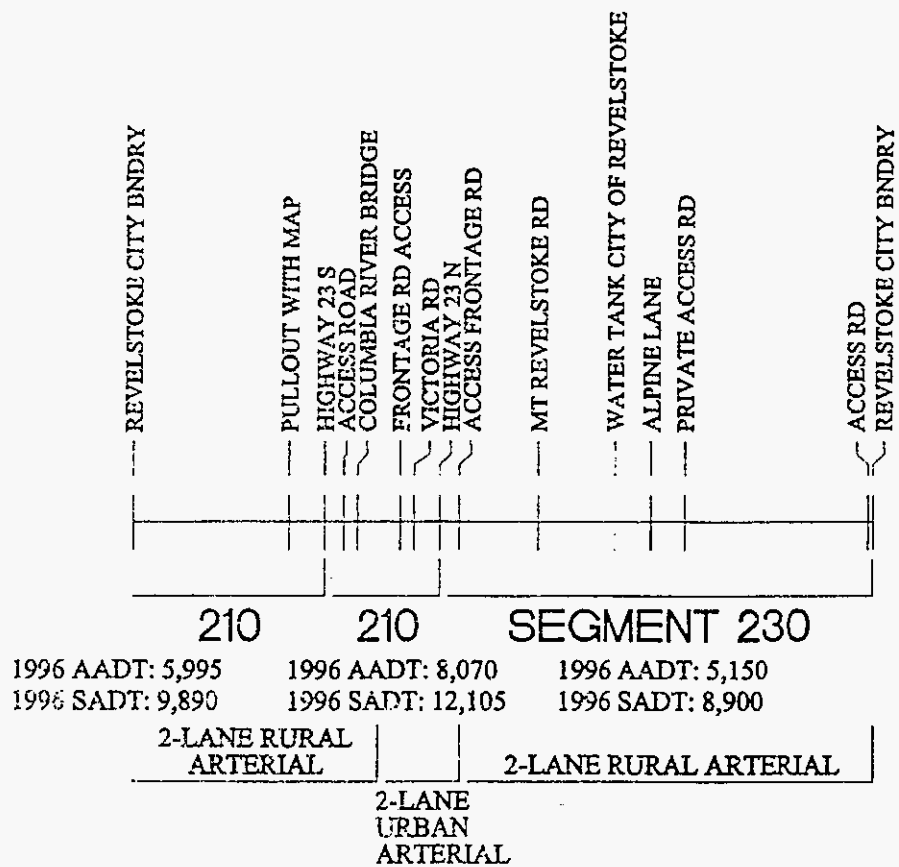
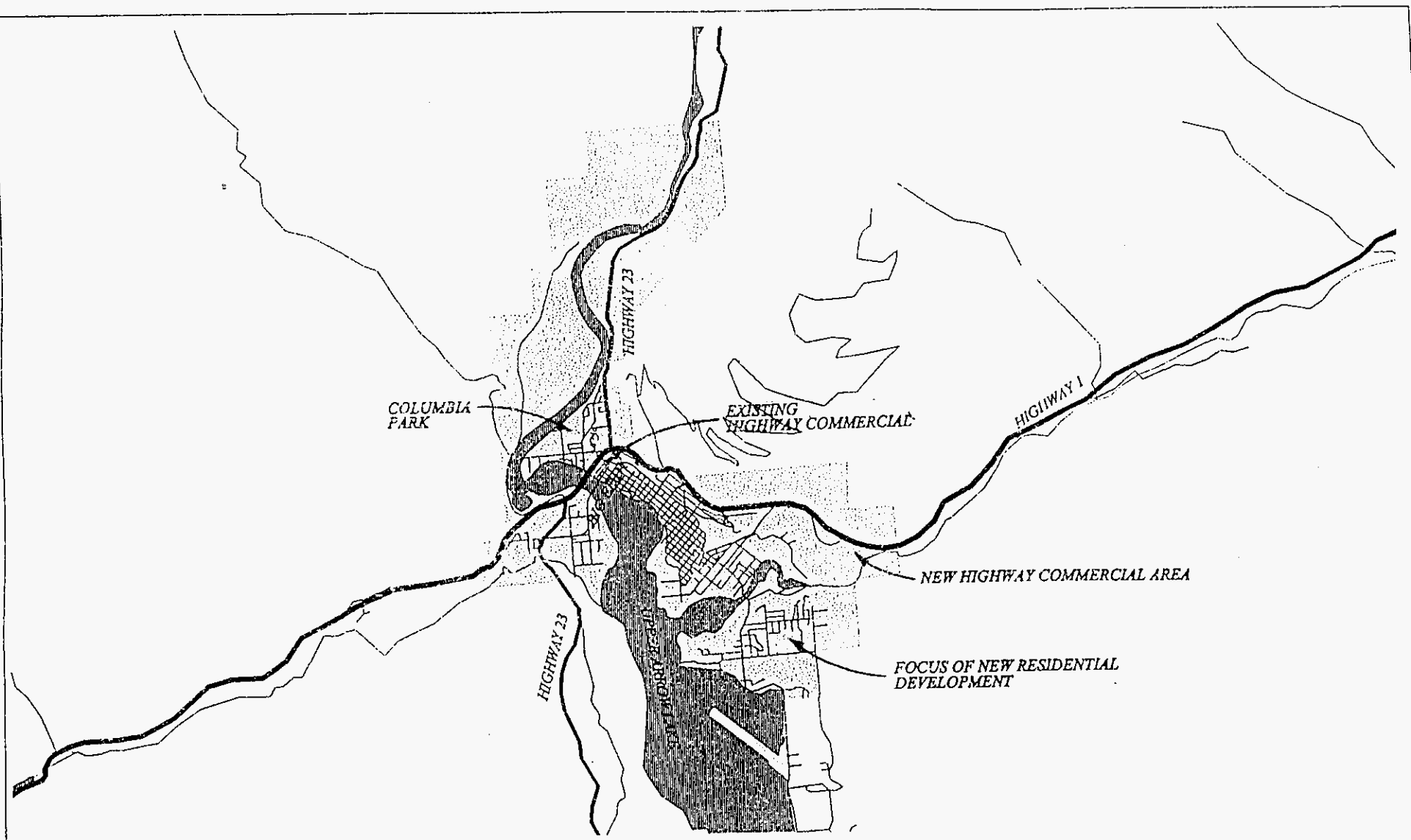


FIGURE 3.11  
HIGHWAY CHARACTERISTICS - REVELSTOKE



-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas



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Figure 3.12  
Future Development Areas - Revelstoke

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highway. Some Columbia Park traffic will use the highway between Highway 23 North and Victoria Road for access to the rest of the city. However, these two areas of the city account for less than 15% (150 units) of the available future residential land. Most new residential growth in Revelstoke will be away from the highway and will not use the highway to access other areas of the city with the exception of the highway commercial areas. Therefore, the expected location of future residential growth will have minimal impact on the highway and the scale of future development will impact a short segment of the highway (Segment 220) to a limited degree.

### **3.6.4 Impacts of the Highway on Community Development**

Because of the minimal interaction between local traffic and the highway on Segments 210 and 230, the impacts of changes to these sections of highway on the community will be minimal. There may be a need for additional access management measures, but these should also be minimal. There is some highway commercial land remaining at this location, but it is relatively small therefore new development will not be substantial.

As discussed above, there is not expected to be a significant amount of future development north of the highway. Therefore, the effects of community severance will be minimal and limited to increased delay crossing the highway and difficulty for pedestrians and cyclists. Additional through or turning lanes would also contribute to the community severance effect.

The highway commercial area at Victoria Road is important to Revelstoke, as it is the first significant development that westbound drivers pass through after coming out of the National Parks. The visual appearance of the area therefore provides the first impression of Revelstoke.

## 3.7 Golden

Like many of the communities along the corridor, Golden is located at the junction of two major highways – Highway 95 and the Trans-Canada Highway. Highway 95, the Kootenay highway serves as one of Golden's "main streets" and passes through the middle of the commercial core area. Trans-Canada Highway traffic helps to support the local economy through the use of a relatively extensive highway commercial area. The Trans-Canada Highway is the only connection to the east and west, and similarly, Highway 95 is the only connection to the south.

### 3.7.1 Existing Conditions

#### Land Use and Development

The majority of existing development in Golden is south of the Trans-Canada Highway between the Kicking Horse and Columbia Rivers. There is a small rural residential community in the northeast bench area, which is accessed by the Golden-Donald Upper Road. The land uses in this area include large lot residential and some light industrial and commercial uses.

The Whitetooth Ski Area was recently purchased and there are plans to develop a destination resort. It currently serves the local market, and has little impact on the highway.

#### Transportation Network

The Trans-Canada Highway is a combination of two and four-lane highway through Golden. The four-lane portion extends from about one kilometre west of the Town boundary to the Highway 95 interchange. All local road and business access along the four-lane section is via frontage roads. Upgrading work was recently completed for the frontage road accesses. Two signalized intersections are the primary accesses, with a limited number of additional right-in, right-out accesses. The interchange at Highway 95 is a partial interchange and does not provide free-flow northbound to westbound and westbound to southbound movements. West of Highway 95, the Trans-Canada

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returns to a two-lane highway, with direct local road intersections. All local streets are stop-controlled. The highway characteristics, accesses and 1996 volumes are shown on Figure 3.13

The SADT and AADT volumes east and west of Golden are among the lowest along the corridor. However, on Segments 280 and 290 within Golden, the 1996 volumes are comparable to most other communities. The proportion of internal traffic however is very low. The SADT internal traffic accounts for less than 20% of the volume, while the AADT internal traffic is less than 10%. The SADT volumes are also about 75% higher than AADT volumes. This is indicative of the large proportion of summer tourist traffic from Alberta.

### 3.7.2 Future Conditions

#### Land Use and Development

The northeast bench (Figure 3.14) is currently being considered as a priority development area. There is potential for approximately 535 residential units and almost 40 hectares of commercial development. This would constitute a significant amount of the future growth in Golden. The other priority new development area is the southeast bench, south of the Kicking Horse River.

Much of the highway commercial land west of Highway 95 has been absorbed, but there may be some infill of remaining vacant land.

Specific development plans for the Golden Peaks Resort (formerly Whitetooth Ski Area) have not been established, but the intention is for it to become a year-round destination resort.

#### Transportation Network

Projected 2021 SADT and AADT volumes are:

Segment 300:	AADT	7,650
	SADT:	14,080
Segment 310:	AADT:	6,680
	SADT:	12,920

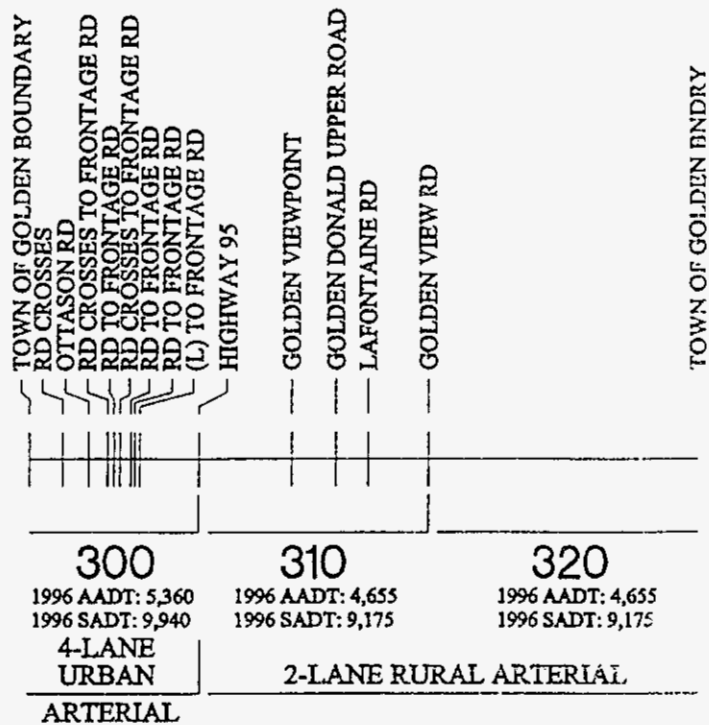
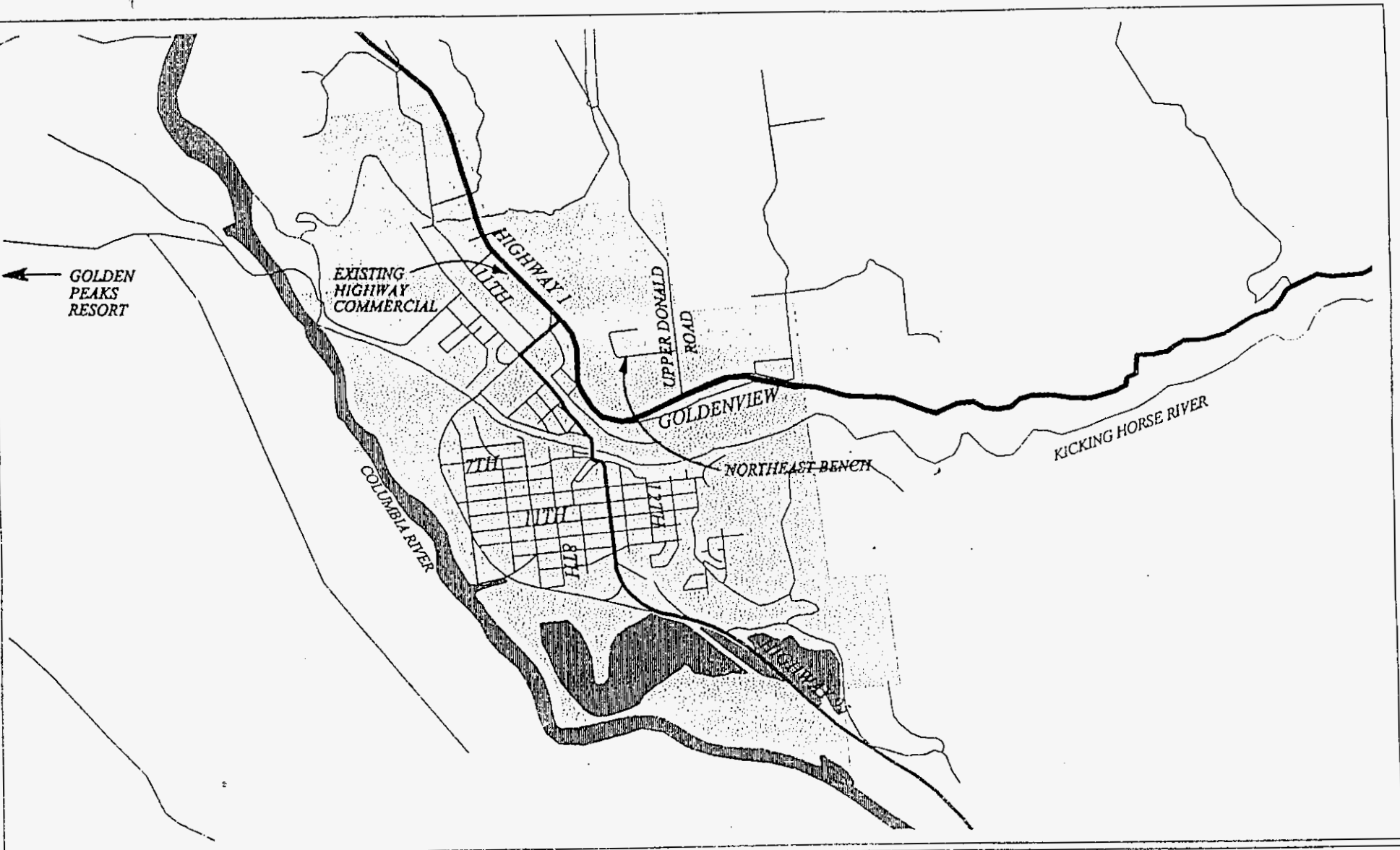


FIGURE 3.13  
HIGHWAY CHARACTERISTICS - GOLDEN



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Figure 3.14  
 Future Development Areas - Golden



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The projected increase for both Segments is approximately 41 to 43% over the 1996 volumes. This is lowest growth of any community along corridor. The relatively low proportion of internal traffic and the small amount of local traffic using the highway result in a low internal traffic growth projection when compared to other parts of the corridor. If the northeast bench area is developed to its potential, the internal traffic growth could be higher than anticipated.

### **3.7.3 Impact of Community Development on the Highway**

There is potential for a future population of almost 1,500 in the northeast bench area, in addition to new highway and service commercial areas. While the residents of the northeast bench may use the adjacent commercial area for convenience shopping, a significant portion of shopping, work and other services will continue to be in the traditional Golden town centre. If this level of development proceeds, the impact on the highway between Upper Donald Road and Highway 95 would be significant and traffic volumes would be significantly higher than projected.

The existing highway commercial area is not expected to grow substantially. The recent upgrading of the frontage road accesses should be sufficient to support any remaining development in this area. The Golden Peaks Resort may have a limited impact on the highway, however peak traffic to ski resort does not coincide with other peak traffic on the highway.

### **3.7.4 Impact of the Highway on the Community**

Highway 95 will continue to be a key component of the local street network. If the northeast bench is not developed to the extent identified in the Comprehensive Development Plan, the Trans-Canada will continue to serve only a minor local function. However, the combination of the scale and type of development envisioned for the northeast bench and may require highway upgrading and/or new local street construction to connect the area to the rest of Golden.

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Since the recent upgrading of the frontage road accesses, there are few direct business or local road accesses. West of Highway 95, there will be little impact due to access management since there is little more that could be reasonably achieved. East of Highway 95, the impact could be significant, depending the speed and extent to which the northeast bench develops. The issue of access could significantly reduce the potential scale of development in that area.

The highway currently creates some feeling of community severance. This is a result of newer highway commercial development that has been attracted to the Trans-Canada Highway and is therefore separated from much of the rest of Golden. Pedestrian and bicycle access between the built-up area of Golden and the highway commercial area is difficult. If the northeast bench is developed, the severance effects will be significant, although the cause will be distance, topography and the river in addition to the highway.

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## 4 Conclusions

The intent of the study was to highlight the relationships between land uses and transportation systems through each of the communities that surround the corridor, rather than to define problems and candidate solutions to support the growing demands on the TCH. There is generally a greater awareness throughout the corridor that land use decisions affect transportation needs and transportation improvements in turn, affect land use decisions. However, integrated strategies that preserve the integrity and safety of the TCH and communities that surround it have been somewhat compromised in some areas. Rapid growth has frequently been the source of many of the challenges facing provincial and local interests.

The Trans Canada highway has many roles that are often conflicting. As part of the National Highway System, it is one of the critical links connecting major urban centres across the country and therefore is important to movement of goods. Similarly, it is the primary highway connecting British Columbia to the rest of the country, and it joins many of the major communities of the province. It is the primary highway for movement of people and goods within the province and to locations outside B.C. As a primary highway, it needs to provide efficient service to its users.

Through many communities, the Trans Canada Highway is also an important component of the urban street network, and in some cases is the community's "main street". Within these areas, the highway provides access to adjacent land uses and is a route for travel within the community.

The national/provincial needs are often quite different than those at a local level. The challenge in developing a corridor management plan is to balance national, provincial, regional and local concerns to arrive at a future role and function that achieves the objectives of all stakeholders and serves as a basis for evaluating the performance of the Trans Canada Highway. This report has outlined the concerns and established background information that can be used in performance evaluation.







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Management  
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## 1.0 Introduction

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This appendix describes the various regions and communities located in that section of the Trans Canada Highway corridor located between the Afton Interchange and the Alberta border. Broad regional overviews are provided with more detailed descriptions of the various communities. The following topics are addressed in the description of the communities:

- Economy and employment
- Population
- Geographic location
- Existing land use and development
- Existing services provided by local government
- Future land use and development
- Interrelation of the community with the Trans Canada Highway.

Various sources of information and data were drawn on in the completion of the descriptions including:

- Statistics Canada Census information
- B.C. Statistics information
- Official Community Plans as well as other plans
- Studies in support of regional growth management strategies
- Servicing studies
- Economic development strategies.

In addition, site visits were undertaken to meet with various community representatives to verify information and to obtain additional information.

The information described in this appendix provided the basis for assessing the impacts of future community growth and development on the Trans Canada Highway. This information was also used to assess the impacts of the Trans Canada Highway on each community.



## 2.0 Thompson Nicola Regional District

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### 2.1 TNRD

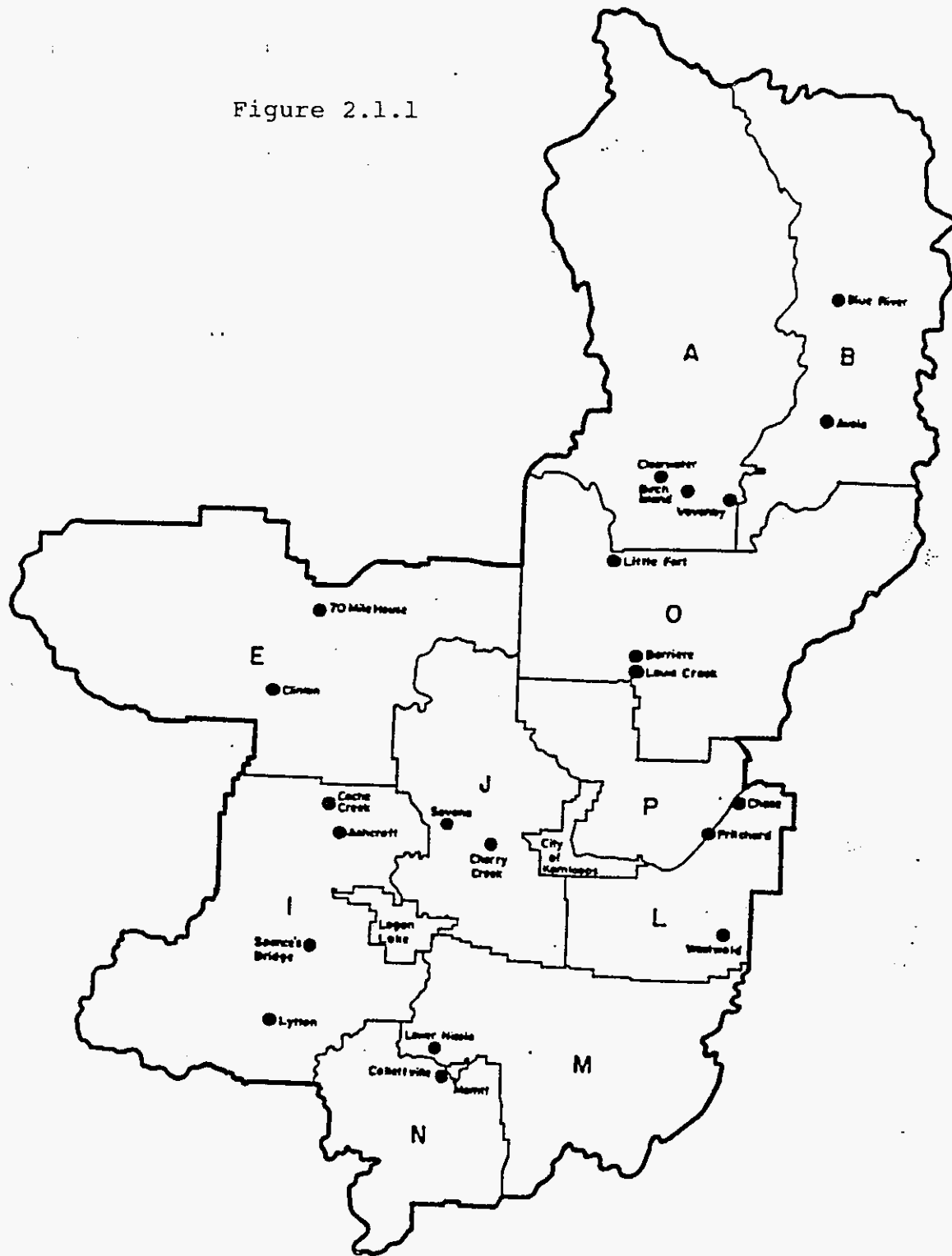
Approximately 55 kilometers of the TCH corridor are located within the Thompson Nicola Regional District (TNRD). The location of the corridor within the TNRD is shown in Figure 2.1.1. A number of key communities which will impact and be impacted by the TCH in the future are located within the TNRD. These include the incorporated communities of Kamloops and Chase as well as smaller unincorporated communities such as Monte Creek and Pritchard. A number of First Nations are also located within the borders of the TNRD but are not legally part of the regional district. These include the Kamloops Indian Band, the Adams Lake Band and the Neskonlith First Nation.

The TNRD was one of the first regional districts in the Province to initiate the preparation of a regional growth strategy as provided for in the Provincial Growth Strategies Act. The regional district has undertaken a number of the technical studies and has initiated the process of preparing the actual growth strategy. Given the importance of regional trends and initiatives for the communities located within them, an overview of the TNRD region is provided. Economic and demographic trends are discussed and regional land use, transportation and servicing issues are highlighted.

#### .1 Regional Economic Trends

Recent economic profiles of the Thompson Nicola Regional District indicates that the region presently has a labour force of approximately 62,350 distributed in various industry sectors as shown in Figure 2.1.2. The region's labour force is growing at the same rate as the population which suggests that the region's population growth is driven to a large extent by job creation. Close to 9,000 new jobs were created in the TNRD between 1991 and 1996. As in the case of many regions in the Province, the industry sectors producing the new jobs are not the traditional resource processing sectors but rather smaller businesses which produce services not goods. Employment by industry sector in

Figure 2.1.1



Map 2.1 The Thompson - Nicola Regional District

the Thompson Nicola Regional District is presented in Figure 2.1.2. Unemployment rates are declining in the region but are still higher than the Provincial average.

**Figure 2.1.2**  
**Labour Force by Industry Sector**

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	2,450	3.9%
Fishing and Trapping industries	70	0.1%
Logging and Forestry industries	2,145	3.4%
Mining (including Milling) Quarrying, and Oil Well industries	1,710	2.7%
Manufacturing industries	5,275	8.5%
Construction industries	4,655	7.5%
Transportation and Storage industries	3,130	5.0%
Communication and other Utility industries	1,450	2.3%
Wholesale trade industries	2,175	3.5%
Retail trade industries	8,090	13.0%
Finance and Insurance industries	1,060	1.7%
Real estate operator and Insurance agent industries	980	1.6%
Business service industries	2,340	3.8%
Government service industries	3,480	5.6%
Educational service industries	4,315	6.9%
Health and social service industries	5,810	9.3%
Accommodation, Food and Beverage service industries	6,165	9.9%
Other service industries	4,735	7.6%
Industry not applicable	2,310	3.7%
<b>TNRD Total</b>	<b>62,345</b>	<b>100.0%</b>

*Source: Statistics Canada 1996 Census*

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Generally speaking, the employment by industry sector has remained constant between 1991 and 1996. The area witnessed a slight increase in employment in the transportation, storage, communications and utilities sectors. Future prospects for regional economic growth vary from sector to sector and from community to community. Generally, all sectors other than the mining sector will generate jobs over the next twenty year period. The growth rates, however, will be different. Recent reports suggest the following trends in the region's industry sectors:

- The forest industry will generate more jobs than in recent years but fewer will be in primary processing. More employment opportunities will occur in the areas of silviculture and higher value added wood processing. More logging jobs will also result due to increases in the annual allowable cuts in the Merritt Timber Supply Area.
- The short term outlook for the region's mining industry is not good. Highland Valley Copper is planning to close in 2008 with the loss of 1,100 jobs. The Afton mine has already closed.
- Agriculture will be a stabilizing influence in the region with the most significant opportunities in the specialty areas of the industry involving value added products.
- Tourism will continue to grow in response to growing markets in wilderness adventure, eco-tourism and other outdoor recreation oriented activities. The Sun Peaks Resort development and increased development of tourism facilities and activities by the Kamloops Indian Band will greatly assist in bringing a higher profile to the regional tourism industry.
- The transportation sector is strong and will continue to grow in response to regional and provincial economic growth.
- The construction industry outlook is positive but there will be fewer mega projects in the public and private sectors.
- Substantial growth in the commercial services sector is forecast including growth in the retail and professional services sector.

- Public sector growth will follow population growth in areas such as health, education and government services.

The region's central sub-region which includes the City of Kamloops, the Kamloops Indian Band and Chase will continue to be the dominant force in the region's economic growth. The City of Kamloops, in particular, will continue to benefit from growth in the tourism, forest and commercial services sector.

Economic growth in the Chase area is predicted to be slower but could be enhanced if a new access road is constructed from Chase to the Sun Peaks Resort.

## .2 Population Growth

The TNRD's population in 1996 was estimated to be over 118,000 of which 91,000 was located within incorporated municipalities. Since 1991, the region's population has been growing at a rate of 3% per annum which is higher than the Provincial average during this period of 2.67%. Over the past 15 years, population growth in the region has been uneven.

In response to a decline in the Provincial and regional economies in the early 1980's, the regional population declined by nearly 2,600 between 1981 and 1986. During the period 1986 to 1991, population grew at an average rate of 1% per annum, still below the Provincial average of 2.3%. Not until 1991 to 1996 did population growth exceed the Provincial average.

The various sub-regions of the TNRD have also grown at different rates. In the period 1981 to 1991, the South Cariboo and North Thompson areas continued to lose population reflecting more difficult economic conditions. In contrast, the Kamloops and Nicola regions recovered more quickly in this period and grew at a rate significantly higher than the regional average. This reflects the dominant position of the City of Kamloops in the regional economy, the diversity of the City's economy and the ability to accommodate industrial, commercial and residential growth. Figure 2.1.3 provides an overview of past rates of population growth in the region from 1981 to 1991 and Figure 2.1.4 indicates growth rates from 1991 to 1996.

FIGURE 2.1.3

TNRD - AVERAGE ANNUAL POPULATION CHANGE BY SUBREGION  
1981 - 1991

	1981		1986		1991		
	Pop.	Pop.	Average Annual Change 1981 - 86		Pop.	Average Annual Change 1986 - 91	
North Thompson	8,825	8,608	-43	-0.5%	8,165	-89	-1.0%
Central	77,845	76,143	-340	-0.4%	81,870	1,145	1.5%
Nicola	9,980	10,044	13	0.1%	10,422	76	0.8%
South Cariboo	<u>8,404</u>	<u>7,686</u>	<u>-144</u>	<u>-1.7%</u>	<u>6,984</u>	<u>-140</u>	<u>-1.8%</u>
TNRD Total	105,054	102,481	-514	-0.5%	107,441	992	1.0%

Note: Figures adjusted for net Census undercount.

Sources: Statistics Canada  
B.C. Stats

FIGURE 2.1.4

TNRD - POPULATION GROWTH  
1981 - 1996

	<u>1981</u>		<u>1986</u>		<u>1991</u>		<u>1996 (est.)</u>	
	<u>Pop.</u>	<u>Share</u>	<u>Pop.</u>	<u>Share</u>	<u>Pop.</u>	<u>Share</u>	<u>Pop.</u>	<u>Share</u>
Municipalities	81,627	77.7%	79,525	77.6%	83,861	78.1%	90,828	77.6%
Electoral Areas	20,065	19.1%	19,779	19.3%	19,992	18.6%		
Reserves	<u>3,362</u>	<u>3.2%</u>	<u>3,177</u>	<u>3.1%</u>	<u>3,588</u>	<u>3.3%</u>	<u>26,255</u>	<u>22.4%</u>
TNRD Total	105,054	100.0%	102,481	100.0%	107,441	100.0%	117,083	100.0%

Note: Figures adjusted for net Census undercount.  
Separate estimates for Electoral Area and Reserve populations unavailable for 1994

Sources: Statistics Canada  
B.C. Stats

The percentage of the population within municipalities as compared to rural areas has not changed appreciably over the past 15 years even though there is the perception that population growth in the rural areas exceeded that in municipalities. Figure 2.1.5 shows the distribution of the population between municipalities and rural areas over the past 15 year period.

Generally, the TNRD's population is younger than the B.C. average. The age characteristics of the region, however, are moving closer to the B.C. average. This reflects aging baby boomers and the growing attractiveness of the region for retirement.

Population growth projections have been prepared by B.C. Stats for the region. A 2% growth rate is projected for the region over the next 20 year period. This means that the region will grow by another 55,000 for a total regional population of 180,000 by the year 2016. The expected distribution of future growth is shown in Figure 2.1.6. The largest share of growth will occur within municipalities and, in particular, the City of Kamloops.

Over the next twenty years, it is anticipated that between 16,800 to 17,500 additional residential units will be required to meet expected demand. Of this total, 13,000 to 13,500 will be required in the eight municipalities and between 3,800 and 3,900 in rural areas. Background studies prepared in support of the proposed regional growth strategy suggest that there is an 18 year supply of residential land in the region available to meet demand.

A large proportion of future population growth and housing demand is projected for the South Thompson Valley. Population growth in the South Thompson Valley is expected to be 30,000 over the next 20 years with 28,000 occurring within the City of Kamloops and 2,000 occurring in Chase and rural areas. Growth in the South Thompson Valley will have a significant impact on the Trans Canada Highway.

### .3 Managing Future Growth

The TNRD initiated the preparation of a regional growth strategy in 1995. Various background and technical reports have been prepared but the strategy itself has not yet been proposed. While a strategy is not yet in place, various studies have identified many of the growth related



**FIGURE 2.1.5**

**URBAN / RURAL POPULATION DISTRIBUTION**

	<b>1981</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>
Municipalities*	77.7%	77.6%	78.1%	78.3%
Electoral Areas	19.1%	19.3%	18.6%	18.3%
Indian Reserve	3.2%	3.1%	3.3%	3.4%

\* Note: When non-incorporated communities with a population greater than the smallest municipality in the region are included in the "Municipalities" category, the number of people in "urban" settlements in 1991 increases from 78.1% to 83.9%.

Derived from B.C. Stats data

Source: E. Vance & Associates; 1996 data by McGuire & Associates

**FIGURE 2.1.6**  
**PROJECTED POPULATION INCREASES**

	<u>2001</u>	<u>2006</u>	<u>2011</u>	<u>2016</u>
TNRD	15,412	28,736	41,483	55,939
Total Municipal	11,974	22,298	32,164	43,368
Other	3,438	6,438	9,319	12,571
Kamloops	9,841	18,326	26,433	35,642
Merritt	965	1,798	2,593	3,496
Logan Lake	313	583	841	1,133
Chase	305	568	819	1,105
Ashcroft	263	490	707	953
Cache Creek	150	279	403	543
Clinton	92	170	246	332
Lytton	45	84	122	164

Derived from B.C. Stats data

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issues for the region as a whole as well as for the South Thompson Valley in particular. The process has also resulted in the preparation of recommendations for possible strategies to be followed by the TNRD Board in managing future growth and development in the region. The process of preparing the strategy has been started and it is expected to be completed next year.

Of particular interest to the TCH CMP process are the recommendations for strategies which affect the South Thompson Valley area.

There is an acknowledgment in the various reports prepared by the TNRD that the South Thompson Valley corridor will continue to be under pressure for development due to the accessibility to employment and commercial services in Kamloops as well as the lifestyle and lower cost housing provided in the area.

The reports acknowledge the City of Kamloops as the primary community within the region. As such, Kamloops has the ability to affect regional settlement such as the development of satellite communities in its commutershed (e.g. Savona, Barriere and Chase). The work in support of a regional growth management strategy recommends that such satellite communities be limited to only designated areas which can be more readily serviced by transit rather than relying solely on automobile use.

In the South Thompson Valley, the TNRD's recommended strategies would see a movement away from dispersed rural residential developments to more compact "cluster" developments or the development of more complete rural villages. These types of development would provide a better balance between employment, commercial and residential uses. Such cluster developments or villages would be serviced by community sewer and other municipal services although the level of services could be lower than in urban centers such as Kamloops.

To avoid unwanted fringe developments, the TNRD recommends the establishment of urban containment boundaries by both the City of Kamloops and the Village of Chase.

There is the view that improvements to the Trans Canada Highway east of Kamloops have enhanced opportunities for increased commercial and

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residential developments, particularly at key highway interchanges such as those proposed for Monte Creek or where residential development has already occurred such as Pritchard. While there is interest in the re-establishment of village and highway tourism services at Monte Creek, the TNRD's reports recommend that the Board exercise caution in approving commercial and residential development at Monte Creek. There is also evidence that commercial development of any significant scale at this location would be opposed by the City of Kamloops.

Discussions with TNRD staff would indicate that the preparation and adoption of an Official Community Plan would be required before any development proposals would be considered in the Monte Creek area. The further development of Pritchard is not addressed in explicit terms in the recommended strategies although many of the recommended strategies are applicable to Pritchard.

An important factor in the future development of Pritchard is the possible development of a road from the Trans Canada Highway to the Sun Peaks development. Two and possibly three alternatives for such a road have been discussed. One option would see a road constructed from Pritchard to Sun Peaks. The construction of a road from Pritchard to Sun Peaks would clearly stimulate the demand for both highway services and perhaps off mountain accommodation and associated commercial services.

The TNRD is not opposed to future growth at Pritchard provided that such growth is limited and that it occurs in a manner consistent with the recommended strategies of the regional growth strategy. These would include the development of complete villages which are properly serviced and which have access to community facilities such as elementary schools. Development applications have been received by the TNRD for fairly dense residential developments on both sides of the Trans Canada Highway. An Official Community Plan is in place for the Pritchard area.

Given the potential development in the South Thompson corridor and its impact on the Trans Canada Highway, it has been recommended in the various background reports that the TNRD work cooperatively with the MoTH to establish a policy for settlement along the Trans Canada Highway which would more clearly define where development should be permitted.

## 2.2 City Of Kamloops

### .1 Introduction

The City of Kamloops is an incorporated municipality of 76,394 residents (1996) located at the confluence of the North and South Thompson Rivers. The Trans Canada Highway runs through this community from Dallas at its eastern end and continues through the southwestern portion of the City in Aberdeen and Dufferin.

### .2 Economy and Employment

The City of Kamloops is the service centre for a large trading area which includes Barriere, Clearwater, Vavenby, Chase, Logan Lake, Merritt, Savona, Cache Creek and Ashcroft. The trading area in the Thompson Nicola Regional District is estimated to be over 170,000 people.

The economy in the City of Kamloops has evolved from one dominated by the forestry and agricultural sectors to a dynamic, well diversified economy. While forestry, mining and the agriculture sectors remain important mainstays of employment in the community, it is clear that the service sector, tourism and retail trade are playing significant roles in the local economy.

Major employers in the Kamloops area include: Weyerhaeuser Canada, B.C. Lotteries, Pollard Banknote, Tolko Industries, Highland Valley Copper Mines, Afton Mines, Lafarge Canada, Royal Inland Hospital, University College of the Cariboo, School District #24, B.C. Tel and B.C Hydro. Figure 2.2.1 provides an overview of the labour force by industry sector.

Figure 2.2.1

Labour Force By Industry Sector

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	645	1.6%
Fishing and Trapping industries	15	0.0%
Logging and Forestry industries	670	1.6%
Mining (including Milling) Quarrying, and Oil Well industries	865	2.1%
Manufacturing industries	3,095	7.5%
Construction industries	3,075	7.4%
Transportation and Storage industries	2,100	5.1%
Communication and other Utility industries	1,015	2.5%
Wholesale trade industries	1,835	4.4%
Retail trade industries	5,955	14.4%
Finance and Insurance industries	825	2.0%
Real estate operator and Insurance agent industries	695	1.7%
Business service industries	1,880	4.5%
Government service industries	2,260	5.5%
Educational service industries	2,860	6.9%
Health and social service industries	4,465	10.8%
Accommodation, Food and Beverage service industries	4,130	10.0%
Other service industries	3,445	8.3%
Industry not applicable	1,585	3.8%
<b>City of Kamloops Total</b>	<b>41,415</b>	<b>100.0%</b>

Source: Statistics Canada 1996 Census

*Forestry*

Kamloops and the surrounding area are the headquarters for many companies involved in the forestry industry. Weyerhaeuser Canada, Tolko Industries, Compwood and Ainsworth Lumber are the largest

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forest product manufacturers in the Kamloops region. Weyerhaeuser alone employs over 900 people.

The forestry industry in B.C. has faced tough times recently. Forestry resources in the Kamloops area are in transition as a result. The Human Resources Development Canada Labour Market Profile for Kamloops indicates that "the industry is currently subject to major restructuring. Some of the factors affecting the industry include the review of the Annual Allowable Cut, the Forest Practice Code, and the current Softwood Lumber Agreement with the United States." As such, many of the producers have shifted their production capabilities to produce more value added forestry products in the region. There is also significant growth in the areas of silviculture and services to the forest industry.

### *Agriculture*

Due to its semi-arid climate, agriculture in the Kamloops region consists of forage crops and livestock production. Cattle ranching is one of the largest agricultural activities in the area. There are approximately 150 ranches in the Kamloops area with approximately 30,000 head of cattle. Traditional livestock operations in the area which include beef, sheep, horses and dairy cows, have been expanded in recent years to include fallow deer, bison, llamas, and emus.

Ginseng production has grown rapidly in the area with Kamloops having earned the reputation as the Ginseng Capital of Canada. Over 1,000 hectares (2,470 acres) are currently in use for ginseng production in the Kamloops area. It is estimated that by 2000, the harvest of ginseng in the Kamloops area will be worth over \$120 million.

### *Mining*

The mining industry provides a substantial amount of employment for area residents. Kamloops is home to one of the largest open pit copper mining facilities in North America. Over 1,100 people are employed by Highland Valley Copper alone. The expected closure of the Highland Valley Mine in 2008 and the closure of the Afton Mine in 1997 will have significant implications for both the City and regional economies.

### *Transportation*

The City of Kamloops and the surrounding region has one of the strongest transportation infrastructure systems in the Province. It is served by a number of Provincial highways, both major national rail companies and has a well developed airport. The City's transportation infrastructure is seen as a major strength in supporting the development of other key sectors of the local economy. The City and region's strong transportation infrastructure, however, has not resulted in a strong warehousing and distribution function other than that associated with the region's basic industries. The construction of the Coquihalla Highway has reduced the likelihood of a strong warehousing and distribution function given that the highway has made the interior very accessible from the Lower Mainland.

### *Tourism*

The tourism industry is expanding in the Kamloops area reflecting broader Provincial trends. In some respects, Kamloops and the TNRD as a whole are exceeding the Provincial growth in tourism activity. For example, the average annual increase in hotel room revenue is twice the rate for the Province as a whole.

The importance of the highway system to the City and region's tourism industry cannot be emphasized enough. Most of the tourists traveling to the region and the community travel by automobile. Significant increases in summer traffic volumes have occurred over the past five years with the greatest increase experienced on the Coquihalla where the SADT increased 55% from 1989 to 1994.

There is agreement in all quarters that the industry will continue to grow in absolute terms and in relative terms to other sectors of the local economy. Significant investments in regional tourism are occurring. The Sun Peaks development is in its fourth year of the projected 15 year development program. Between \$550M and \$600M will be invested over this period. The proposal calls for a four seasons resort consisting of 2,560 residential units, 1,118 hotel and condotel units, a commercial center, 18 hole golf course as well as trail development. Large scale investment in tourism and associated residential development is also projected for the Kamloops Indian Band lands.



This proposal entails the development of a western theme park, 200 room lodge, airstrip, shops and a heritage train station (for the Rocky Mountain train). Build out is expected to take between 15 and 20 years and will require an investment of \$600M (including the residential development).

### **.3 Population**

The 1996 Census indicates that the population of Kamloops is 76,394, up from 67,057 in 1991. The population growth over the past five years in the area was 13.9%. In the more distant past, changes in the forestry and mining industry have lead to declines in the population as was witnessed between 1981 and 1986 when the City's population declined by 3.6%. Kamloops' emergence as an economically more diversified city has lead to consistent positive population growth since 1986.

Over the past 20 years, the community's population has increased at an annual growth rate of 1.40%. Planners in the City of Kamloops estimate that the City will continue to grow at a rate of approximately 2% until the year 2010. B.C. Statistics project that annual growth in the area should continue in the range of 1.5% to 2%. At this rate, B.C. Statistics estimates that the local population will reach 100,000 by 2010.

### **.4 Geographic Location**

The City of Kamloops is located at the confluence of the North and South Thompson Rivers, 347 metres above sea level. The incorporated area of the City covers 114 square miles (296 square kilometres). The City is a transportation hub for the region and is located at the crossroads of the Trans Canada, Yellowhead, and Coquihalla highways.

### **.5 Land Use and Development**

Single family residential uses predominate in the community although there is a growing market for multiple family uses in the area. Commercial development also is growing at a steady rate. A number of institutional facilities have been built or are in the process of being built.

The City of Kamloops population statistics indicate that the City is expected to grow by 25,000 people over the next 10 to 15 years. This population growth will result in a requirement for an additional 10,000 housing units to be built. Since 1986, the largest portion of growth in the City has been in the South Shore, with strong emphasis having been placed on the Southwest Sector. Housing development in Aberdeen and Sahali has accounted for close to 50% of all new growth in the past 5 years.

Figure 2.2.2

**New Residential Dwelling Units by Area (1988-1996)**

Area	1988	1989	1990	1991	1992	1993	1994	1995	1996	Total
Mt. Dufferin	7	44	10	10	5	9	2	8	7	102
Aberdeen	54	96	103	123	261	403	259	89	165	1,553
Sahali	38	80	160	172	277	319	93	75	114	1,328
South Shore	2	7	3	5	7	40	207	88	71	430
Valleyview	10	8	13	5	26	11	12	7	10	102
Rose Hill	0	2	2	2	5	2	2	2	1	18
Juniper Ridge	26	36	36	42	73	55	70	18	10	366
Dallas/ Barnhartvale	7	14	22	25	29	34	58	48	46	283
Hefley Creek	1	1	2	2	1	0	1	0	0	8
Rayleigh	7	9	15	12	24	21	10	10	6	114
Westside	17	17	29	13	37	67	107	49	72	408
North Shore	10	4	14	7	99	180	27	244	28	613
Brocklehurst	20	99	54	127	165	50	79	38	25	657
Batchelor Heights	2	3	1	9	14	10	22	8	12	81
<b>Total</b>	<b>201</b>	<b>420</b>	<b>464</b>	<b>554</b>	<b>1,023</b>	<b>1,201</b>	<b>949</b>	<b>684</b>	<b>567</b>	<b>6,063</b>

In 1996, the distribution of housing units by type was as follows:

- 56.6% single family dwellings (19,566)
- 30.0% multi-family dwellings (10,391)
- 8.5% duplex (2,927)
- 4.9% mobile homes (1,704)

The 1996 City of Kamloops annual report indicates that a large proportion of the dwellings constructed in Kamloops since 1991 have been multiple family dwellings. Since 1991, 5,027 new dwelling units have been built in Kamloops. Of these new units, 2,318 have been multi-family dwellings. This represents 46.1% of all new dwellings built in Kamloops since 1991. Single family dwellings have accounted for 2,282 of the new units or 45.4%.

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Commercial development along the Trans Canada Highway in the eastern, central, and southwestern portions of the City of Kamloops is considerable. Three commercial Town Centres have been designated in Kamloops. The Sahali-UCC Town Centre is the only one of the centres which has uses located in close proximity to the Trans Canada Highway. Commercial uses located in this area include a wide variety of uses including: shopping mall commercial, convenience stores, strip malls, restaurants, hotels, motels, service stations, outdoor amusement centres, gardening supply stores, the Southgate Industrial Park and car dealerships.

Land use designation for Shopping Centres exist for developments along the Trans Canada Highway in Aberdeen. This regional/suburban mall has over 40,000 square metres of leasable space. The Aberdeen commercial area includes the largest shopping mall in Kamloops and a number of retail, personal service, automobile oriented service, convenience, restaurants, entertainment facilities, small clinics, offices and motel/motor hotel uses. These uses are located on extensively developed frontage roads which can be accessed from the Trans Canada Highway. There remains room for further commercial development in this area.

Neighbourhood Commercial centres in Valleyview and Dallas are also located on largely developed frontage roads with access points to the Trans Canada Highway. These areas service primarily the local market and consist of land uses similar to those in the Shopping Centre area. Neighbourhood centres range in size from 5,000 to 20,000 square metres of leasable commercial space. A large amount of redevelopment is occurring in these older neighbourhood commercial areas to attract local business. Redevelopment has intensified land use on many sites and room remains for more infill and new development in this area.

The Service/Highway Commercial designation in Kamloops represents commercial areas which provide service primarily to automobile oriented travelers. Businesses in these areas are largely dependent on exposure to the highway. Uses existing in these areas consist of service and convenience uses and uses requiring relatively large land areas in relation to building size including accommodations buildings, fast food restaurants and grocery stores.

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This land use designation includes strip or ribbon commercial development located on the East and West Trans Canada Highway in Kamloops. Council's policy as stated in the 1996 Official Community Plan is to discourage further development of this kind along arterial roads and highway routes in order to reduce conflict with through traffic patterns.

The City of Kamloops Official Community Plan also indicates that big box retailers catering to regional shoppers will be encouraged to located adjacent to major highways. The construction in the past five years of centres such as Costco in the Aberdeen/Dufferin, Walmart, Office Depot and Toys R Us in the Sahali/UCC area have created a substantial traffic impact on the Trans Canada Highway. Future encouragement of these centres adjacent to major highways will likely result in even greater traffic flows on the Trans Canada Highway.

There remains a considerable amount of land for commercial development in the City of Kamloops.

Land designated as industrial in Kamloops includes: light, medium and heavy industrial uses.

The Southgate Industrial Park is located adjacent to the Sahali/UCC Town Centre. The park has close but not direct access to the Trans Canada Highway. The Southgate Industrial Park land uses included primarily high standard light industrial uses until recently. The area is now evolving into a mixed use commercial and industrial centre with land uses including service commercial, government and major utility office space and trade and technology based offices.

Land designated for medium and heavy industrial purposes includes uses such as manufacturing activities, storage and processing of raw materials (i.e. logs, and wood products, sand/gravel, concrete and minerals, metallic industries and petroleum products). The City is encouraging infill development on already serviced and designated medium and heavy industrial land. A number of these uses such as the Lafarge Cement Plant are located at the eastern entrance to the City of Kamloops along the Trans Canada Highway and others are located on the north shore near the airport.

## .6 Community Services

Given the size of the population in the City of Kamloops, there are a large number of local government services available to local residents provided by the City itself as well as by the TNRD on a regional basis.

### *Sanitary Sewer*

Sewer service in the community is provided by the City of Kamloops. The City has recently extended the sewers to the outlying areas of Westsyde and Barnhartvale and are recovering the costs through specified area taxation.

### *Water*

Water service is also provided by the City of Kamloops throughout the City. The City of Kamloops Five Year Capital Expenditure Plan indicates an expenditure of between \$45 million and \$50 million in the next three years for a proposed water treatment facility in the City.

### *Storm Drainage*

Storm drainage is also provided by the City of Kamloops. Many of the City's urban areas are served by a piped storm sewer system.

### *Recreation*

Recreation facilities and services in Kamloops are extensive when compared with similar sized communities. The City owns and maintains five arenas including the 5,500 seat Riverside Coliseum, three indoor swimming pools and one outdoor swimming pool, a curling rink and a large number of parks and playfields.

### *Education*

School District #24 provides a full range of educational services from K to Grade 12. The Kamloops area is served by 41 elementary schools, ten secondary schools, one storefront school and the Kamloops Community Learning Centre. In 1995-1996, School District # 24 in Kamloops employed the equivalent of 932 full-time teaching staff and administrators and 512 support staff.

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The City is also home to the University College of the Cariboo. This university College offers degree programs, career/technology diplomas, applied industrial technologies, vocational certificates, college preparation, adult special education and continuing education to close to 8,000 students. Over \$21.5 million dollars was spent towards an Applied Industrial Technology Centre which was opened in 1997.

#### **.7 Future Land Use and Development**

The City enacted its revised Official Community Plan in 1996. The OCP sets out a long-term (2020) integrated strategy for land use, transportation, servicing and various other policy areas. This long-term strategy will guide the City to a population of 120,000.

The key guiding principles for the management of growth in the City of Kamloops are closely linked to the City's transportation strategies. They are as follows:

- Infill, intensification, mixed use, and redevelopment will be encouraged, particularly within the Town Centre and neighbourhood centres.
- Existing zoning commitments for development will be honored and services will be upgraded on a planned and phased basis to meet demands.
- The Travelsmart Preferred Scenario will be used as a general guideline for considering levels of development within the Special Development Areas. The levels of development proposed by the preferred scenario in each of the Special Development Areas is shown in Figure 2.2.3.
- The Travelsmart results will be monitored to determine the success of land use adjustments, travel demand management techniques and network improvements on travel behavior, with a major review as the population nears the 100,000 level.
- Where development proposals are made which do not reflect the City's planned phasing, all required infrastructure improvements, including major off-site upgrades, will be the responsibility of the developer.

Figure 2.2.3

**Preferred Growth Management Scenario  
To 2020 (120,000 Population Horizon)**

Area	Existing	Additional Growth	% of Growth	Development Areas	Required Road Upgrading
Northwest	27,100	5,900	13	Batchelor Hills Airport/ Tranquille Tranquille Farm	South end: Overlander Bridge Columbia St.: First to Sixth Ave. Hillside Extension: Notre Dame to Summit Dr.  Sixth Ave. Extension or Columbia St./Summit Dr. widening
Northeast	3,800	4,700	10		
Southwest	17,900	21,800	48	Aberdeen Estates/Whiteshield Cres. Highlands West Taylor Property	
Southeast	9,500	5,100	11	Juniper West Jimeva Farms (Upper) Jimeva Farms (Lower)	Possible: <ul style="list-style-type: none"> <li>• Aberdeen Dr./Copperhead Dr.</li> <li>• Juniper to Rose Hill Rd.</li> <li>• Red Bridge</li> <li>• Trans Canada Highway: Valleyview to Highway 5A; truck climbing land between Valleyview and Petersen Creek Bridge; auxiliary lanes between Highway 5A and Columbia Street interchanges</li> <li>• Remaining tow lane sections of Summit Dr.</li> <li>• Access/capacity enhancement to Copper Ridge</li> </ul>
Central Core	16,700	7,500	17		
<b>Total</b>	<b>75,000</b>	<b>45,000</b>	<b>100</b>		

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An overview of the City's long-term land use strategy is identified in Figure 2.2.4.

In addition to urban residential areas, the OCP provides for continued suburban residential growth in Rayleigh, Heffley Creek, Karindale, Rose Hill, Dallas and Central Barnhartvale. Densities in these areas will range from 2 to 5 units per hectare.

Continued growth of the City's commercial area is also provided for in the OCP. The OCP establishes three major categories of commercial use in the City. These are:

- Town Centres which include the City Centre, Tranquille Market Street, and the Sahali/UCC Town Centre.
- Shopping Centres which include Aberdeen and malls located on the north shore and Valleyview.
- Service/Highway Commercial uses located along the east and west approaches of the Trans Canada Highway.

Of particular relevance to the Trans Canada Highway Corridor Management Plan are the OCP's policies related to service and highway commercial uses. This category of land use applies to areas along the East and West Trans Canada Highways as well as large cluster developments such as the Aberdeen Commercial Park and the Tranquille Road/Brian Street area. Uses provided for in this land use category include a broad range of service and convenience uses requiring relatively large land areas in relationship to building size including tourist, accommodation, strip commercial development, automobile sales and services uses. A number of policies in the OCP apply to the future development of service and highway commercial uses. These include:

- Discouraging further strip development along arterials or highway routes. The City intends to encourage future development within existing designated development areas or in planned cluster developments. Careful attention is to be directed to access, parking, landscaping and signage in order to avoid conflict with arterial and highway traffic patterns.



Figure 2.2.4

KAMPLAN 97



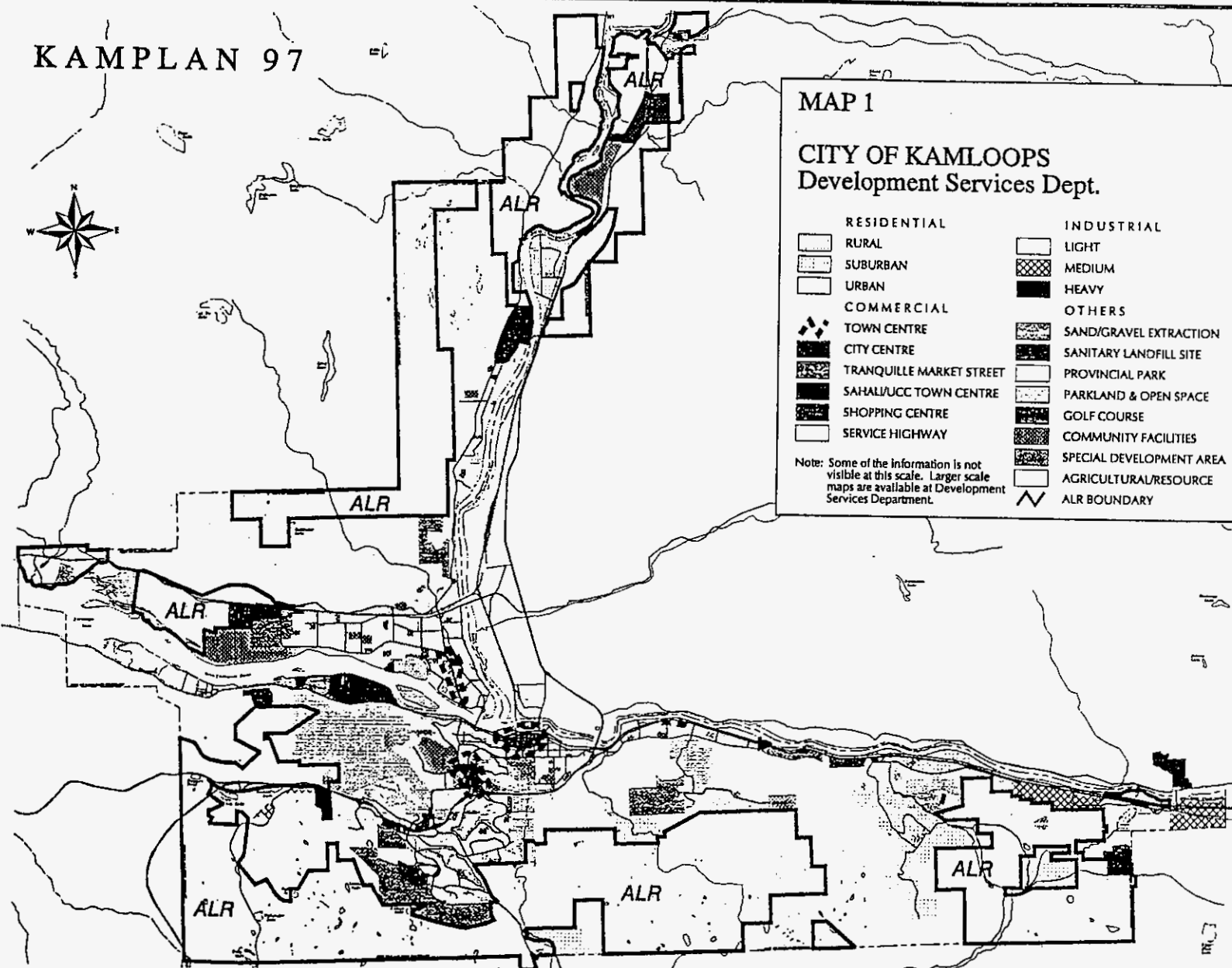
MAP 1

CITY OF KAMLOOPS  
Development Services Dept.

- |                          |                          |
|--------------------------|--------------------------|
| RESIDENTIAL              | INDUSTRIAL               |
| RURAL                    | LIGHT                    |
| SUBURBAN                 | MEDIUM                   |
| URBAN                    | HEAVY                    |
| COMMERCIAL               | OTHERS                   |
| TOWN CENTRE              | SAND/GRAVEL EXTRACTION   |
| CITY CENTRE              | SANITARY LANDFILL SITE   |
| TRANQUILLE MARKET STREET | PROVINCIAL PARK          |
| SAHAL/UCC TOWN CENTRE    | PARKLAND & OPEN SPACE    |
| SHOPPING CENTRE          | GOLF COURSE              |
| SERVICE HIGHWAY          | COMMUNITY FACILITIES     |
|                          | SPECIAL DEVELOPMENT AREA |
|                          | AGRICULTURAL/RESOURCE    |
|                          | ALR BOUNDARY             |
- Note: Some of the information is not visible at this scale. Larger scale maps are available at Development Services Department.

MAP 1  
Generalized Land  
Use 1996 - 2020

Population horizon: 120,000



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- Encouraging the revitalization and beautification of existing arterial commercial developments.

The OCP, however, does promote future big box retailers which cater to a regional market to locate in automobile oriented areas preferably adjacent to major highways.

A further policy which indirectly impacts the TCH is the City's objective to encourage the establishment of neighborhood commercial centres in Aberdeen, Juniper Ridge and Bachelor Heights. Increased commercial development in areas such as Aberdeen and Juniper may reduce the impact of local traffic on the TCH (e.g. decrease in shopper trips).

Three forms of industrial development are proposed by the OCP. Light industrial, uses such as warehousing, storage and light manufacturing will be directed to the Southgate Industrial Park. A range of medium industrial uses will be encouraged in the Campbell Creek industrial area. The City is opposed to the use of Campbell Creek lands for highway or service commercial uses and this is reflected in the OCP. Heavy industrial uses have been designated in areas presently occupied by such uses (e.g. Weyerhaeuser, sawmills, etc.).

The City also supports an industrial use for the Afton lands located in the southwest area of the City as well as in the fringe outside of the City. The City opposes the use of the Afton lands for a satellite residential community or for highway and service commercial use. There is a recognition, however, that some limited commercial uses may be required to support industrial uses on these lands.

Airport related industrial and commercial uses are proposed in conjunction with future airport development and other north shore sites, such as the Tranquille site are also proposed for industrial use.

Further development of major institutional uses such as health care facilities, University College of the Cariboo, the airport and various other facilities are also supported in the plan.

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The City prepared a comprehensive transportation plan in conjunction with the OCP called Travelsmart. The objective to integrate the City's OCP with its transportation plan was to provide for a future land use and development strategy which better achieved the goal of reducing the rate of increase in travel demand and automobile use in the City. This in turn would achieve other objectives such as reducing the cost of transportation infrastructure, achievement of environmental sustainability goals, etc. Building on the findings of Travelsmart, the OCP established a variety of objectives and policies which have implications for the future of the TCH. An objective which specifically relates to the TCH is the protection of the integrity of Provincial highway corridors within the City to facilitate through traffic. Various policies are established in the OCP which support this objective.

The City's Major Road Network Plan, shown in Figure 2.2.5, establishes a hierarchy of roads intended to move internal traffic throughout the City without major impacts on the Provincial highway system.

Additional policies provide for the following:

- development of an Access Management Plan within the terms of this plan to address access issues along Provincial highways;
- the construction of various new roads to implement the Major Road Network Plan. These are described in Figure 2.2.6;
- increasing the reliance on transit as an alternative to the automobile;
- developing a continuous comprehensive system for pedestrians and bicycles.



Figure 2.2.6

Development Horizon (Population)	Development Oriented Streets	Arterials
100,000	<ul style="list-style-type: none"> <li>• Hugh Allan Drive extension to Pineview Valley</li> <li>• Batchelor Drive extension to McQueen Drive</li> <li>• Valleyview Drive extension to Jimeva Farm</li> <li>• Pacific Way upgrading</li> <li>• Aberdeen Drive extension</li> </ul>	<ul style="list-style-type: none"> <li>• South approach to Overlander Bridge</li> <li>• Columbia Street from 1st to 6th Avenue</li> <li>• Hillside Drive extension - Notre Dame to McGill Road</li> <li>• Hillside Drive extension - Westgate to Summit Drive</li> </ul>
100,000 - 200,000		<ul style="list-style-type: none"> <li>• Sixth Avenue extension, Columbia Street to Summit Drive at Springhill Drive or Widening Columbia Street - First Avenue to Notre Dame Drive and Summit Drive, McGill to Arrowstone</li> </ul> <p>May Be Required:</p> <ul style="list-style-type: none"> <li>• Aberdeen Drive/Coppeland Drive</li> <li>• Juniper to Rose Hill Road</li> <li>• Red Bridge</li> <li>• Trans Canada Highway - Valleyview to Highway 5A. Truck climbing lane - Valleyview to Petersen Creek. Continuous auxiliary lanes between 5A and Columbia Street interchanges</li> <li>• Four laning remaining two lane sections of Summit Drive</li> <li>• Access/capacity enhancements to Juniper Ridge</li> </ul>
120,000+		<ul style="list-style-type: none"> <li>• Singh Street corridor</li> <li>• Victoria Street - 6 laning east and west of downtown</li> <li>• Halston Avenue - 4 laning 8th Street to Tranquille</li> <li>• Trans Canada - upgrade to freeway through Valleyview</li> </ul>

## 2.3 Village Of Chase

### .1 Introduction

The Village of Chase is located at the confluence of Little Shuswap Lake and the South Thompson River approximately 60 km east of Kamloops. The community is situated on the bottom of this valley which is oriented in an east-west direction and acts as a major transportation corridor containing the Canadian Pacific Railway and Trans-Canada Highway. Chase relates closely to both the Thompson region to the west and Shuswap region to the east.

The community's location in the valley bottom gives it many of its natural attributes. Rich soils laid down by past glaciation and alluvial activity provide the area with its high quality agricultural lands. Steep slopes lying south of the community separate Chase from rural agricultural lands containing sparse settlement in the Chase Creek valley. The Little Shuswap Lake and South Thompson River form the community's east and northern boundary, respectively. A further natural attribute of the community which deserve mention is the salmon habitat located within the adjacent water bodies and within the portion of Chase Creek which traverses the community.

The Village of Chase is a municipal government incorporated under the British Columbia **Municipal Act**. It is a relatively recent municipality by provincial standards with incorporation completed in 1969. The community's status as a village municipality reflects the relatively small population base (1990 population of 2,460) and its limited land base.

### .2 Economy and Employment

The area surrounding Chase was originally settled as a farming community around 1900. In 1909, the Adams River Lumber Company opened a sawmill in Chase. Eventually the mill closed and the population of the community declined until the middle of the century when the holding lumber company began its sawmill operation. The forestry sector remains the mainstay of the community's economy supplemented by employment in tourism and retail trade. Employment by industry sector is provided in Figure 2.3.1.

Figure 2.3.1

Labour Force By Industry Sector

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	25	2.8%
Fishing and Trapping industries	0	0.0%
Logging and Forestry industries	55	6.1%
Mining (including Milling) Quarrying, and Oil Well industries	10	1.1%
Manufacturing industries	85	9.4%
Construction industries	70	7.8%
Transportation and Storage industries	75	8.3%
Communication and other Utility industries	30	3.3%
Wholesale trade industries	15	1.7%
Retail trade industries	195	21.7%
Finance and Insurance industries	0	0.0%
Real estate operator and Insurance agent industries	0	0.0%
Business service industries	25	2.8%
Government service industries	20	2.2%
Educational service industries	40	4.4%
Health and social service industries	80	8.9%
Accommodation, Food and Beverage service industries	90	10.0%
Other service industries	55	6.1%
Industry not applicable	30	3.3%
<b>Village of Chase Total</b>	<b>900</b>	<b>100.0%</b>

Source: Statistics Canada 1996 Census

As with many communities in the interior of BC, the economy of Chase is heavily reliant upon the service sector. Some of the larger employers in the community include:

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- Adams Lake Lumber, Division of International Forest Products Ltd. (manufacturing and related harvesting activity)
- School District #73
- Quaaout Lodge (located at the western end of Little Shuswap Lake approximately 20 km from the village)
- First Nations adjoining the Village (Adams Lake, Neskonlith and Little Shuswap)
- Agricultural operations on various farms and ranches surrounding the village. These include livestock and market garden activities as well as recently initiated ginseng production and raising of fallow deer, ostriches and llamas
- Tourism-related employment in the various hotels, restaurants, gas stations and other amenities in the village.

Reliance upon the service industry, coupled with forestry and agricultural activities, are expected to remain the back-bone of Chase's economy in the coming years. Efforts to continue and enhance tourism through promotion of the Shuswap Lakes as a vacation area, the Adams River Salmon Run and other features will bolster the service sector in Chase. The Agricultural Land Commission fully supports the vibrant agricultural industry in the community, and efforts are underway in surrounding forest lands to encourage the long-term health of this resource. In addition to these traditional sectors of the community's economy, are various new activities which have gained prominence. These include the rise of Chase as a residential centre and the increase in home-based businesses, offices and other small-employment establishments.

The Trans-Canada Highway (TCH) plays an important role to the Village of Chase, yet somewhat less than in other communities who are more directly oriented to the TCH. The TCH By-pass to the south of the village is a key factor in this regard. The village displays very limited "strip highway" development characteristics of so many other communities along the corridor. What does exist is less extensive and centered around two specific locations. The west entrance to the village (Shuswap Avenue) and the middle entrance (Columbia Street). Other factors to consider with respect to the village's orientation to the TCH include:

- Use of the TCH by forestry sector to move raw materials and finished products.



- Role of the TCH in bringing motorists (private vehicles and bus tours) to the general region. These motorists may stop in Chase in their initial trip, return there for service on future trips or in some cases decide to relocate to the community.
- The continued dependence of the community on tourism (and related service industries) on forestry indicates persisting role of the TCH in community development.

### .3 Population

The 1996 Census showed the Village of Chase with a population of 2,440. The demographic structure of the Village's population is shown below:

Figure 2.3.2

#### Chase Population By Age Cohort

Age Cohort	% of Population
0 - 9	15
10 - 19	12
20 - 29	10
30 - 39	15
40 - 49	9
50 - 59	15
60+	24

Source: Census Canada

Thirty-nine percent (39%) of Chase's population is over 50 years of age with 24% over age 60. This reflects the community's popularity as a retirement area. Many of these retirees have been moving to the community in recent years, as shown by community population growth figures:

Figure 2.3.3

Village Of Chase Population  
1971 - 1996

Year	Population	Growth Rate Over 5 Year Period
1971	1,200	-
1976	1,400	17%
1981	1,800	29%
1986	1,900	6%
1991	2,100	11%
1996	2,500	20%

Source: Census Canada

Chase has been a steadily growing community since its inception. There have been many periods of dramatic growth, with rates over 5% annually occurring in many cases. This is evident within the most recent 5 year period. Future growth is projected to range between 3% and 4% per annum.

#### .4 Description of Community

The Village of Chase's boundaries include 360 hectares of area, a portion of which falls within Little Shuswap Lake and the South Thompson River. Existing land uses may be described as follows:

##### *Residential*

Residential uses are scattered in locations throughout the village. The two main areas include lands between the TCH and the CPR corridor (comprising a mix of single family, multi-family and mobile home development) and the second area between the CPR corridor and the Little Shuswap Lake at South Thompson River (primarily single family residences). A third area which includes single family residences on larger parcels lies south of Aylmer Road.

### *Commercial*

Commercial activities are focused in three areas of the village. The village core area bounded by Chase Creek, Coburn Street, Sicamous Street and the CPR corridor is the major focus of commercial activity. It includes a full range of retail, banking, restaurants, offices, hotels, and related service uses. The village office is also located here. The second area of commercial use parallels Shuswap Avenue to the east from the TCH to Chase Creek. It includes restaurants, motels, gas stations as well as service commercial activities (e.g. welding shop, building supply). In addition, the community shopping mall is located in the area east of Shuswap Avenue. Finally, two highway commercial activities front the TCH - the gas station/restaurant complex at the junction of Shuswap Avenue, at the motel at Coburn Street.

### *Industrial*

Major industrial uses (manufacturing of forest products) are located along Aylmer Road near the South Thompson River and also bordered by Chase Creek. Light industrial uses (auto body repair, mechanics, storage facilities, etc.) are situated between the TCH on Shuswap Avenue in the south part of the village (across from Shuswap Avenue), at the junction of Shuswap Avenue at Aylmer Road, and east of the TCH south of Chase Creek (access via local road).

### *Institutional*

Key institutional activities such as the Village office, post office and medical centre are located in and adjacent to the village core. Other uses such as schools and parks are scattered through the residential areas of the community. The village's wastewater treatment and disposal centre lies west of Shuswap Road at the village's south end.

## **.5 Community Services**

### *Water and Sanitary Sewer*

The village draws its water supply from the South Thompson River. A central intake facility / high lift pump station is located at the point where the Little Shuswap Lake flows into the South Thompson River.

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This facility supplies two interconnected reservoirs situated on the hillside above the village. Water for domestic and fire fighting purposes is supplied throughout the village.

There are two approaches to sanitary sewer treatment and disposal. The majority of the village is served by a central collection, treatment and disposal facility which comprises two aeration lagoons at rapid infiltration basins. The second approach to sanitary sewage involves the use of on-site systems. The main areas using this approach are:

- Paquette Road area east of village core
- Lands east of TCH
- Area south of Aylmer Road (except recently completed subdivisions).

#### *Storm Drainage*

Most of the village is served by small area specific systems which discharge to ground. Open ditch/culvert arrangements are individual on-site septic. Two community systems exist - one servicing the village core area discharging into Chase Creek, the second along Price Street discharging into the South Thompson River.

#### *Transportation*

As noted above, Chase is served primarily by the TCH as its link with the outside world. The CPR mainline also traverses the community. The community has airport or transit services. Major roads within the community include:

- Shuswap Avenue
- Pine Street
- Third Avenue/Veteran Road
- Coburn Street
- Second Avenue
- Aylmer Road

Pedestrian and bicycle modes of travel are also important within the village. Shuswap Avenue has been constructed with extra-width pavement to allow for use by alternate modes.

### *Existing Servicing Issues*

Key servicing issues in the community include:

- Storage capacity of water reservoirs to serve growth.
- Disposal capabilities of sanitary sewer treatment facility.
- Disposal of storm drainage in selected location of village.
- Traffic congestion and parking availability (by smaller community standards) in the village core area.

There are no major issues with respect to the village's existing transportation network.

#### **.6 Existing Role of TCH In Community's Land Use and Transportation System**

The TCH is important as a connection between Chase and the outside world, yet has limited direct connection to land uses in the village and to the village's transportation network. This is due largely to the by-pass around the village and the limited amount of development east of the TCH within village boundaries. Therefore, the village relies on the TCH in a more economic sense for the following:

- Movement of raw materials and finished products vis-à-vis the forestry and other resource industries.
- Capturing of highway travellers who are either passing by the community or are destined for the Shuswap for vacation or recreation purposes.

#### **.7 Future Developments and Related Issues**

There is a substantial proposed development which, if it comes to fruition, has the ability to directly affect the TCH corridor through Chase. As noted earlier, the village continues to undergo high rates of growth and is beginning to experience shortages in the land base for development. Furthermore, the village is bounded by four challenging obstacles - Little Shuswap Lake, ALR lands, First Nations Reserve access and a steep hillside. It is the latter area which is the focus of recent attention.

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Private interests have secured a 230 ha. area west of the Village straddling the Chase Creek - Falkland Road. Separated from the existing village by the steep slopes adjacent to the TCH, this area is proposed to accommodate almost 1,000 units of residential development (at various densities ranging from multi-family to acreage). Limited commercial and no industrial users are proposed for the development.

Other than this major proposal, remaining development within the village is expected to consist of infill of residential, commercial and industrial uses on vacant parcels. This could include intensification of uses in the village core area. One possible area of more significant development is in the Chase Estates lands bordering Chase Creek. These lands have been mired in a complicated estate situation for some years with resorts expected in the next 5 years. These lands are designated for primarily residential uses.

Clearly, the key future development from the Village's perspective is that proposed for the Chase Creek Road area. It would have the following servicing and transportation implications:

- The need to upgrade at the Village's water and sanitary sewer systems.
- Require transportation connection between the new development area and the existing village. It has not yet been determined how this would interface with the TCH corridor. Possibilities include an at grade crossing or a grade-separated interchange in the vicinity of the Chase Creek - Falkland Road junction with the TCH.

## 3.0 COLUMBIA SHUSWAP REGIONAL DISTRICT

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### 3.1 Regional Overview

#### .1 Introduction

The majority of the Trans Canada Highway Corridor Management Plan study area lies within the Columbia Shuswap Regional District (CSRD). The CSRD includes the incorporated municipalities of Salmon Arm, Sicamous, Revelstoke and Golden. The CSRD also includes rapidly growing unincorporated areas such as Sorrento.

Some areas in the CSRD, Salmon Arm, Sicamous and the Sorrento area in particular, have experienced significant growth in population and development in the recent past. It is projected that this trend will continue into the future. Increased population and new development coupled with the growing attraction of the Shuswap Lakes as a tourist area will result in increased traffic volumes on the Trans Canada Highway both for local trips as well as regional travel. Given this growth, economic and demographic trends in the CSRD are discussed in further detail in the following section.

#### .1 Regional Economic Trends

Statistics Canada Census figures indicate that the Columbia Shuswap Regional District had a labour force of approximately 24,000 people in 1996. The labour force by industry sector is presented in figure 3.1.1. The region's traditional dependence on resource processing sectors continues but is being supplanted by growth in the tourism industry and in the retail trade industry. Significant investment has occurred in this region supporting the tourist trade. However, much of this employment is seasonal in response to the summer tourism demand.

- Tourism will continue to supplant economies of the municipalities located in this region. While job loss has occurred in other sectors in recent years, tourism employment remains strong in the CSRD. Potential for ski hill developments in Revelstoke and Golden may further bolster tourism in the eastern portion of the study area.

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- The dependence of the areas on the forestry sector is likely to continue. Increased employment opportunities in silviculture and other non-primary processing areas will occur.
- Agriculture has declined in the area as an employment sector. With increased development pressures in the Shuswap Lakes region, it is likely that the shift away from the agricultural sector will continue.
- Employment in the transportation sector, especially in Revelstoke has declined. It is expected that this sector will stabilize.
- The outlook for the construction industry is positive in Sorrento, Salmon Arm and Sicamous. The demand for new dwelling units will not be as high in Revelstoke and Golden.
- Continued growth in small home based businesses and retail trade is projected.



Figure 3.1.1

Labour Force By Industry Sector

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	990	4.1%
Fishing and Trapping industries	60	0.3%
Logging and Forestry industries	1,365	5.7%
Mining (including Milling) Quarrying, and Oil Well industries	275	1.1%
Manufacturing industries	2,640	11.0%
Construction industries	2,100	8.8%
Transportation and Storage industries	1,540	6.4%
Communication and other Utility industries	470	2.0%
Wholesale trade industries	635	2.7%
Retail trade industries	3,190	13.3%
Finance and Insurance industries	340	1.4%
Real estate operator and Insurance agent industries	425	1.8%
Business service industries	685	2.9%
Government service industries	1,020	4.3%
Educational service industries	1,510	6.3%
Health and social service industries	1,755	7.3%
Accommodation, Food and Beverage service industries	2,590	10.8%
Other service industries	1,865	7.8%
Industry not applicable	465	1.9%
<b>CSRD Total</b>	<b>23,920</b>	<b>100.0%</b>

Source: Statistics Canada 1996 Census

.2 Population Growth

Statistics Canada Census figures from 1996 indicate a population of approximately 48,000 in the Columbia Shuswap Regional District. The population in the CSRD grew by 15.5% between 1991 and 1996. The

annual growth rate in the region between 1991 and 1996 was 2.9%. This exceeds the provincial average during the same period of 2.67%. Despite a declining population base in the mid 1980s, the population has stabilized and grown steadily. B.C. Statistics has indicated that the population in Salmon Arm will lead in terms of growth in the CSRD in the years to come.

The population in the municipalities on the eastern end of the study area, Golden and Revelstoke, will likely experience the slowest population growth in the CSRD in the upcoming years. Golden's population continues to increase despite its resource sector based economy. This is largely attributable to new employment in the tourism industry in the area.

The population in Revelstoke has declined in the past and has only recently stabilized around 8,000 residents. Corporate restructuring by CP Rail and mega project completions have resulted in lost jobs and movement from the Revelstoke area. This area will likely experience low population growth in the upcoming years.

Generally speaking, the population in the CSRD is older than the B.C. average. The attractiveness of areas such as Salmon Arm, Sicamous and Sorrento located along the Shuswap Lake chain for retirees has lead to an increased in the age of populations in these areas. The development of higher density housing in these areas will likely continue to attract retirees. The age profile of the CSRD could potentially become even older in the years to come.

Population growth projections have been prepared by B.C. Stats for the Columbia Shuswap Regional District. A population growth rate of 1.3% for the region has been projected over the next 20 years. This indicates that the population in the CSRD will likely grow by an additional 17,000 people in this time frame for a total population reaching close to 70,000 by 2017.

Over the next twenty years, it is anticipated that there will be a requirement for 6,800 to 7,000 new dwelling units in the Columbia Shuswap Regional District. B.C. Stats is projecting that a significant portion of the growth will occur in Salmon Arm. Growth will also continue to occur in Sicamous and Sorrento. Growth will occur but at a slower pace in Revelstoke and Golden.

### **.3 Managing Future Growth**

At the present time, the Columbia Shuswap Regional District has not embarked on a growth management strategy. Many of the more rural areas in the CSRD are not governed by land use bylaws. Recent needs assessments in some areas have indicated that there is little interest in this type of regulation. However, in areas where growth has been strong, there is more interest in planning to manage future growth. The land use planning and future growth projected for each community are discussed in more detail in the following sections.

#### **3.2 Columbia Shuswap Regional District - Rural Areas**

##### **.1 Squilax, Anglemont and North Shore of Shuswap Lake**

Generally, the Anglemont, Scotch Creek and the North Shore of Shuswap Lake is unregulated. A fairly basic zoning bylaw for Anglemont is being replaced by the CSRD. Major sewage disposal problems persist in the Anglemont area.

Scotch Creek, Celista, Magna Bay and the remainder of the north shore do not have zoning bylaws or other forms of development regulations. There is some discussion in the Magna Bay area on the need for some form of land use regulation.

##### **.2 Deep Creek**

Much of the Deep Creek area is in the ALR thereby preventing non-agricultural developments. The CSRD is revising the Deep Creek Ranchers Land Use bylaw to reaffirm the bylaw's policies. Key policies provide for the locations of commercial and industrial land uses in the District of Salmon Arm.

##### **.3 Sunnybrae/White Lake**

There are no land use regulations in place nor are there prospects for future planning and land use regulations in the future. A recently completed needs assessment for future planning and land use regulation confirmed the lack of interest in developing such regulations.

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**.4 Balmoral, Notch Hill, Blind Bay, Eagle Bay**

A new Official Community Plan and zoning bylaw have been enacted for the South Shuswap area including Balmoral, Sorrento, Notch Hill, Blind Bay and Eagle Bay. Much of the incentive for enacting the OCP and zoning bylaw related to public concerns over the impact of development on Shuswap Lake.

**.5 Sicamous Rural Area/Malakwa**

No major population growth is projected for the Sicamous rural area. The Sicamous Rural Land Use Bylaw #2000 applies to the rural areas surrounding the District of Sicamous. The bylaw is proposed for review and revision in the future although no major changes in policies are expected. Rather, the CSRD will "flesh out" the policies more to provide increased directions to future growth and development.

**.6 Revelstoke Rural Area**

The Revelstoke rural area is not seen as a high growth area in the future. At present, a rural land use bylaw (Bylaw #2200) is in place. The bylaw needs revision but the interest for revising the bylaw at the political level is not high. Building inspection has been discontinued in the area by the CSRD.

Increased development activity and the need for planning could increase demand for development in the Airport Flats area.

**.7 Golden Rural Area**

Land use and development regulations in the Golden rural area are very basic consisting of an old Highway Planning Area Bylaw. There are no plans or political will to implement land use plans or zoning bylaws in the area. The Golden Peaks development could result in increased development pressure on the West Bench area.

### 3.3 South Shuswap Area

#### .1 Introduction

The South Shuswap area includes a number of communities which are located on the Trans Canada Highway and for that reason will be directly impacted by future planning of the TCH corridor. Other communities are located some distance from the highway, but will also impact and be impacted by the TCH Corridor Management Plan.

The discussion of the South Shuswap area is presented on the basis of the following communities:

- The Sorrento area which includes Sorrento itself, Cruikshank Point/West Notch Hill, Notch Hill, West Blind Bay, Blind Bay, Balmoral and Reedman Point is discussed as one community. This is consistent with how the residents of this area would define their community.
- The Eagle Bay and Wild Rose Bay areas are discussed separately.

Figure 3.3.1 identifies the location of these communities.

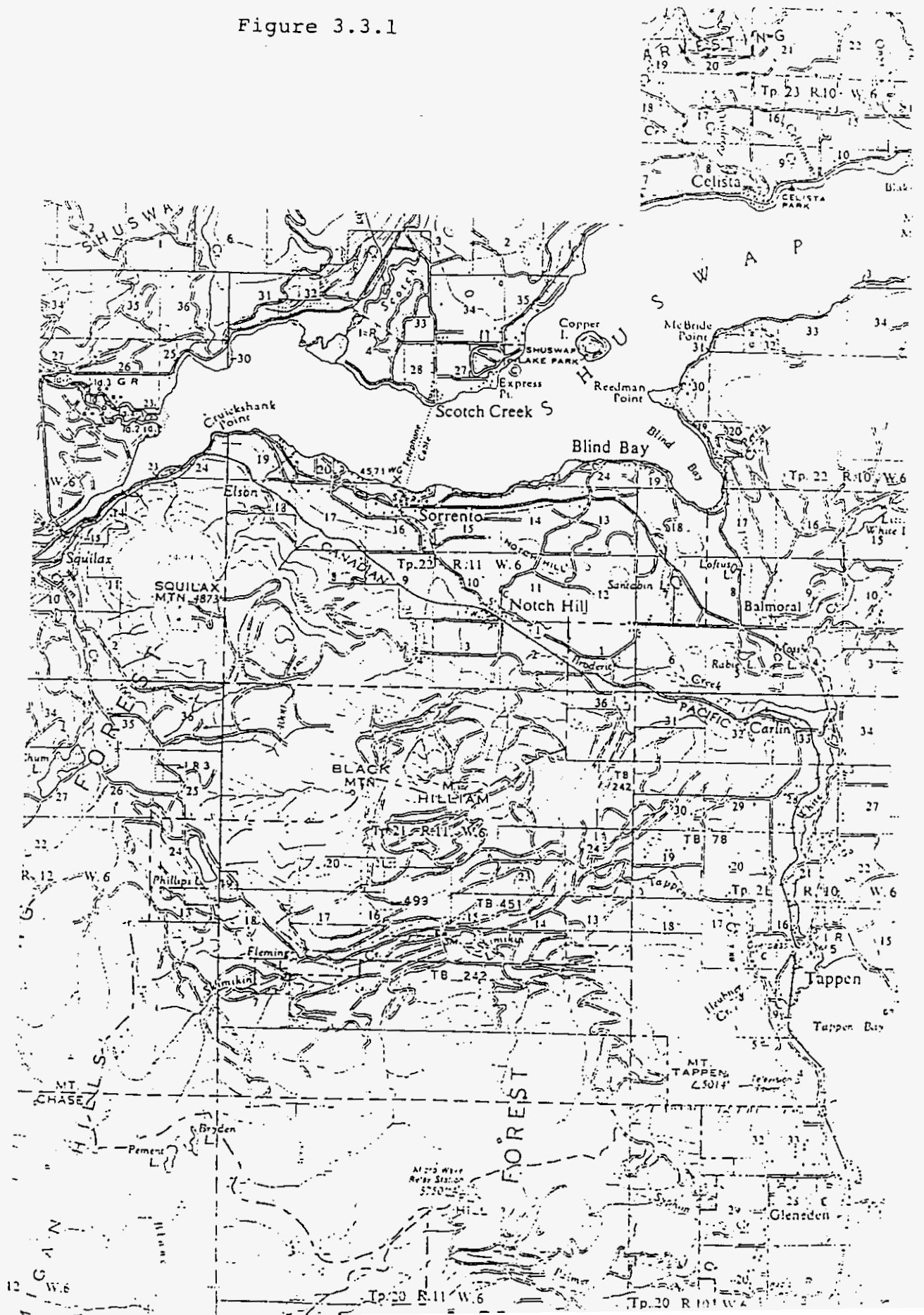
#### .2 Overview of Existing Land Use and Development

##### *Sorrento Area*

Residential and rural land uses predominate in the Sorrento area with the exception of Sorrento itself which contains the main concentration of commercial development in the area.

In Sorrento, the majority of residential uses are located along a strip of land between the lakeshore of Shuswap Lake and the Trans Canada Highway. Commercial land uses are located along the north and south side of the Trans Canada Highway and consist of service stations, a general store, motels, restaurants, a commercial mall and a number of other land uses. A variety of institutional uses are also located in the community including a church, post office, a community hall, an elementary school (K to Grade 7) and a park (Sorrento-Blind Bay Community Park). Residential uses are predominantly single family

Figure 3.3.1



residential uses located on larger lots. There are a total of 341 occupied parcels in Sorrento.

**Notch Hill/Balmoral Area** - The Notch Hill/Balmoral area which is located to the south and east of Sorrento is largely an agricultural area with limited development.

**Blind Bay** - The Blind Bay area is a heavily developed area consisting of various developments or neighbourhoods. These include the Blind Bay Road area, Cedar Heights, Shuswap Lake Estates and the Blind Bay Waterfront. A variety of land uses occur in the Blind Bay area including residential and commercial uses. The area, however, is generally made up of single family residential uses.

**Reedman Point** - The Reedman Point area, other than limited waterfront commercial development, has developed almost exclusively as a single family residential area. The development occurs both along the waterfront as well as on upland areas.

**Cruikshank Point** - The Cruikshank Point area contains a limited amount of residential development along Shuswap Lake with limited waterfront commercial development.

### *Eagle Bay/Wild Rose Bay*

The Eagle Bay and Wild Rose Bay areas are generally single family residential in land use. A range of lot sizes occur from smaller urban sized lots to rural residential lots. Waterfront and other forms of commercial development are very limited. The Wild Rose Bay area is mostly a seasonal community.

## **.3 Community Services**

As an unincorporated area, services to the South Shuswap area are either provided by the Columbia Shuswap Regional District (CSRD), Provincial agencies, School District #89 or improvement districts. The CSRD provides a variety of services to the Sorrento area as well as the other communities in the South Shuswap area. These include solid waste management, park maintenance, as well as planning, regulatory and administrative services.

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#### .4 Sorrento Area Community Services

##### *Water*

The Sorrento area is provided with a range of services. Water service is provided by a number of improvement districts or private utilities including the Sorrento Improvement District.

##### *Sanitary Sewer*

No community sanitary sewer is provided in the Sorrento area although a Liquid Waste Management Plan is being prepared for the Columbia Shuswap Regional District. The provision of a community sanitary sewer system is a high priority in higher density areas particularly Sorrento itself where the OCP proposes more intensive development in the future. At present private sanitary sewer systems service a number of mobile home parks such as the Sorrento Place Mobile Home Park and the Sorrento Heights Mobile Villa.

##### *Storm Drainage*

Drainage is provided through a system of ditches and natural water courses. There are no piped drainage or storm sewer systems in the plan area. All roads and ditches in the Sorrento area are maintained by the Ministry of Transportation and Highways.

##### *Fire Protection and Policing*

Fire protection is provided by the Shuswap Fire Department, a voluntary fire department. Policing is provided either by the RCMP detachment located in Chase (Sorrento and west) or the one in Salmon Arm (east of Sorrento).

##### *Education*

An elementary school provides Kindergarten to Grade 7. High school students are bussed to schools in Salmon Arm. School District #89 has indicated that high school students will continue to be bussed to Salmon Arm although there is interest in the community for the construction of a middle school.



### *Other Community Services*

Other community services include post offices, a church, community hall, cemetery and a library administered by the Okanagan Regional Library Board.

### **.5 Population Growth**

The South Shuswap area has grown rapidly in the past. The following figure indicates that the Sorrento area grew from approximately 2,600 in 1991 to over 3,600 in 1996.

**Figure 3.3.2**

#### **Population Growth In The Sorrento Area**

Area	Population 1991	Population 1996	% Increase
Sorrento	491	579	18%
Cruikshank Point/West Notch Hill	364	363	0%
Notch Hill	544	708	30%
West Blind Bay	689	1155	68%
Balmoral/Blind Bay/Reedman Point	537	842	57%
<b>Total</b>	<b>2625</b>	<b>3647</b>	<b>39%</b>

### **.6 Existing Role Of The TCH In The Community**

The Trans Canada Highway plays an extremely important role in the Sorrento area particularly in Sorrento itself. The great majority of business and commercial uses located in Sorrento front directly onto the highway. These commercial uses serve some of the commercial needs of the South Shuswap area but also cater to visitors and travelers.

Sorrento area residents rely on commercial and other services located in Salmon Arm for shopping. The Trans Canada Highway functions as the "main street" of Sorrento and there are numerous direct access points to the TCH.

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The future of the Trans Canada Highway is a major issue in the community which has generated considerable discussions within the community and between the Ministry and the community.

There are various points of view on this issue. Some believe that the Trans Canada Highway and the Sorrento commercial area are constraining one another. Clearly, the numerous direct accesses and increased local traffic are constraining the ability of the Trans Canada Highway to function as a major route for provincial and national travel and goods movement. Conversely, the continued ability of the Sorrento commercial area to cater to a rapidly growing local population will also be constrained. The issue of the highway bypass in particular has received considerable public discussion in the Sorrento area. From the perspective of regional district representatives of the area, the majority of residents in the Sorrento area are in favour of the bypass, although some business owners and residents directly affected by the proposed bypass oppose it. Those in favour of the bypass cite a number of concerns related to the existing situation:

*Safety*

There are concerns that the existing situation is not safe. Pedestrian and local vehicular traffic is forced to cross the highway for shopping and other activities. In the community's view, this not only poses safety issues but also contributes to congestion. Concerns have been also been raised in respect to school children walking to the elementary school which adjoins the highway and the operation of the fire hall.

*Travel Speed*

The community is concerned that mixing of local and highway traffic creates disruptive traffic patterns. From the community's perspective, this is particularly evident in terms of travel speed. Speed limits in Sorrento have been reduced by the Ministry. There are calls for even further reductions in the speed limits by certain factions of the community (e.g. seniors). There are also claims by the community that speed limits are ignored by through traffic particularly trucks who wish to carry speed through the community to get a run at steeper grades. The community also cites the numerous direct accesses as well as road intersections which they believe contribute to congestion.

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### *Economics*

The community believes that Sorrento has the potential to grow and meet more of the commercial and other service needs of its residents, thereby reducing the number of trips to Salmon Arm. Growth of the community can only happen by expansion to the south and west on lands presently in the ALR. The Agricultural Land Commission has indicated that it is prepared to exclude the land between a possible future bypass and the existing highway. From the community's perspective, the construction of a bypass would therefore not only reduce traffic issues but also provide the land base for further growth and development of the local economy as well as the provision of future community facilities (e.g. middle school).

### *Population Growth*

The population growth rates in the Sorrento trading area have been high over the past years. From the community's perspective, future growth rates could also be high compounding existing problems.

### *Development Patterns*

The community believes that future growth and development pressure may lead to undesirable development patterns such as continued strip development in the Sorrento area. This would further erode the role of the TCH and result in a community form which residents do not want. The community believes that the development of a town centre in Sorrento is the option which the community supports and one which would be in the long term interest of protecting the role of the TCH. The option of developing a new town centre outside of Sorrento proper is not supported by the public.

## **.7 Future Development**

The CSRD adopted the South Shuswap Official Community Plan (Bylaw No. 700) in March of 1997. The plan sets out a comprehensive growth strategy for the South Shuswap sub-region including the Sorrento area.

### *Sorrento Area*

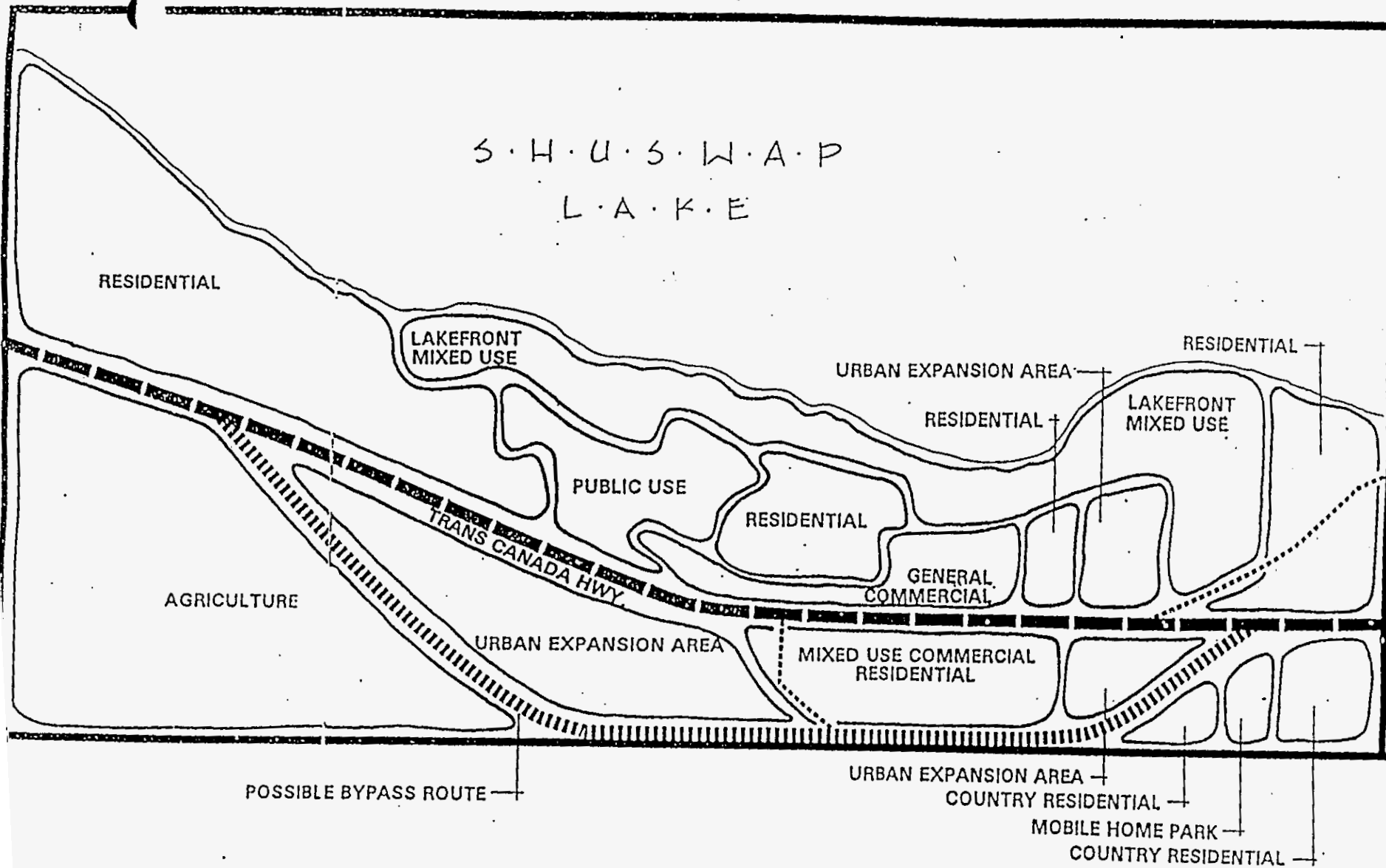
The OCP identifies Sorrento for the development of a "town center" which would contain the major concentration of commercial, multiple family residential and institutional development in the South Shuswap area. The plan provides for a variety of land uses in Sorrento at a density which is characteristic of a small town. The location and extent of such land uses in the Sorrento Town Centre are shown in Figure 3.3.3.

The future development of the Sorrento Town Centre area is predicated on two important factors. The plan recognizes that the development of the town centre to the proposed densities is contingent on the servicing of the area with a community sanitary sewer collection, treatment and disposal system. The plan encourages the preparation of a Liquid Waste Management Plan (LWMP) to provide the necessary guidance in addressing this issue. The LWMP process has been initiated.

A second key factor is the development of the Trans Canada Highway bypass. The plan supports the bypass on the conditions that it can be accomplished with provision for safe, convenient and well designed points of access onto the existing road system through Sorrento from both the east and west sides. It also indicates that the definition of the development potential south of the highway cannot be finalized until the highway bypass alignment is finalized. The OCP encourages the MoTH to carry on with the planning of the bypass to better define improvement options and enable confirmation of the alignment and points of access. Close collaboration between MoTH, the CSRD, the South Shuswap Planning Committee as well as the Agricultural Land Commission is recommended by the OCP.

A variety of uses are proposed in the Sorrento Town Centre area including:

- Residential uses consisting of single family residential uses which preserve the character of existing neighbourhoods.
- Lakefront Mixed Use consisting of commercial, single family and multi family uses including resorts.



POSSIBLE BYPASS ROUTE

URBAN EXPANSION AREA

COUNTRY RESIDENTIAL

MOBILE HOME PARK

COUNTRY RESIDENTIAL

CONSOLIDATED FOR CONVENIENCE ONLY WITH BYLAWS

95/09/22

# SORRENTO TOWN CENTRE LONG TERM DEVELOPMENT STRATEGY

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- General commercial uses consisting of a range of commercial uses with some public and institutional uses as well as dwellings above the commercial ground floor use.
- Mixed Use Commercial/Residential consisting of commercial and multiple family residential uses.
- Urban expansion area which may include residential (including seniors and special housing), commercial and institutional uses.

The OCP also establishes a long term strategy which is relevant to the bypass issue. These include:

- Upgrading of the streetscape of the existing highway through Sorrento to improve safety for pedestrians, improve the aesthetics, and to recognize this section of the highway as a commercial street in addition to its role as a traffic thoroughfare.
- The development of urban density commercial and residential uses in the development cells which will be created by the bypass route if and when it is constructed.
- The definition of urban and rural areas by the highway bypass route. Lands north of the bypass route would be used for a variety of urban uses. Lands south would retain their agricultural designation and remain in the ALR.

*Cruikshank Point/Waverly Park*

The policies of the OCP provide for additional single family, community and rural residential uses but do not permit further medium density residential uses. Existing tourist commercial uses are recognized but no new tourist commercial development will be permitted.

*Notch Hill/Balmoral*

The objectives of the OCP are to retain and enhance the agricultural character of this area. In keeping with the plan's objectives, no new single family and medium density residential will be permitted. Similarly, no commercial development except

for agricultural operations and home based businesses will be permitted. Industrial uses may be permitted subject to an amendment to the OCP.

### ***Blind Bay***

The overall objective of the OCP for the Blind Bay area is to retain the predominantly low density residential character. The policies provide for additional single family residential uses as well as some medium density residential uses in select locations and subject to conditions. The emphasis in the OCP's policies is on residential infill. Some special use commercial development such as tourist, waterfront and neighbourhood commercial uses may also be permitted.

### ***Reedman Point***

The OCP's objectives in respect to the Reedman Point area are to maintain the low density residential character of the area as well as allow for residential infill. Consistent with these objectives, the policies allow additional single family, country and rural residential development but do not permit medium density residential development or commercial development other than neighbourhood commercial uses.

### ***Eagle Bay/Wild Rose Bay***

The objectives of the OCP for the Eagle Bay and Wild Rose Bay areas are to maintain the low density residential character and to allow residential infill. Policies of the OCP permit additional single family, country and rural residential development but do not allow for medium density residential or commercial development other than neighbourhood commercial uses.

## **.8 Overall Policies Relating To The Trans Canada Highway**

The OCP also establishes specific objectives and policies relating to the Trans Canada Highway itself. Objectives include:

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- To fully recognize the important influence, now and in the future, of the Trans Canada Highway on the plan area, including but not limited to:
  - transportation and mobility within the plan area for local residents;
  - economic development potential associated with the highway;
  - land use patterns, especially in close proximity to the highway.
- To recognize that from the perspective of the Ministry of Transportation and Highways, the primary function of the Trans Canada Highway is movement of traffic as an important link in the Province's highway network.
- To encourage localized upgrading of the Trans Canada Highway to resolve safety concerns.
- To pursue a bypass corridor option at Sorrento to improve safety and to facilitate development of the Sorrento Town Center Plan.
- To provide for safe and convenient access from roads within the plan area to the Trans Canada Highway.

### **3.4 District of Salmon Arm**

#### **.1 Introduction**

The community of Salmon Arm is located half-way between the major western Canadian centers of Vancouver and Calgary on the southwestern shore of Shuswap Lake. Salmon Arm is at the northern end of the Okanagan Valley and also associates closely with the Thompson Region to the west and Columbia-Kootenay region to the east.

Geographic features of Salmon Arm offer some of the most striking characteristics of this community. The surrounding physiographic region is known as the Shuswap Highlands, a high interior plateau lying west of and adjacent to the Monashee mountain range. The community takes its name from the "Salmon Arm" of the multi-armed Shuswap lake system, of which the community surrounds the extensive southern tip.

**URBAN SYSTEMS**

May, 1998  
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Other notable geographic features which define the community are the Fly Hills to the west, Larch Hills to the east and Mount Ida to the south.

A further significant natural feature of the community is the richness of its natural resource lands. The soils of the valley bottom areas surround this arm of the Shuswap Lake comprise largely loams and clays which are critical for agriculture. The slopes rising from the valley possess both appropriate soil and climate conditions to support healthy forest cover. The value of various natural features for wildlife, bird and fish habitat, with salmon spawning and waterfowl nesting and flying serving as four examples.

The District of Salmon Arm is a municipal government incorporated under the British Columbia **Municipal Act**. Its status as a district municipality reflects the overall extent of the community along with its more limited population density. Many district municipalities do not possess a distinct urban area. This is not the case with Salmon Arm, which supports a large and vibrant urban core which is described later in this report.

The existing population of Salmon Arm is 14,664 (1996 census). While not a large community by Lower Mainland standards, this population places Salmon Arm in the medium size range for interior municipalities.

## .2 Economy And Employment

As with many other communities along the Canadian Pacific Rail corridor, settlement of the Salmon Arm area began with the completion of the railway in 1885. Clearing of forested lands and use of these lands for agriculture remained the principal industry in the area for many decades. While these two base industries are still important income generators for the community, the importance of other economic sectors has grown. The following table shows Salmon Arm's labour force segmented by industry sector.

Figure 3.4.1

Labour Force By Industry Sector

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	290	4.0%
Fishing and Trapping industries	30	0.4%
Logging and Forestry industries	270	3.7%
Mining (including Milling) Quarrying, and Oil Well industries	30	0.4%
Manufacturing industries	840	11.6%
Construction industries	685	9.5%
Transportation and Storage industries	215	3.0%
Communication and other Utility industries	115	1.6%
Wholesale trade industries	245	3.4%
Retail trade industries	1,105	15.3%
Finance and Insurance industries	95	1.3%
Real estate operator and Insurance agent industries	125	1.7%
Business service industries	240	3.3%
Government service industries	300	4.2%
Educational service industries	595	8.2%
Health and social service industries	780	10.8%
Accommodation, Food and Beverage service industries	590	8.2%
Other service industries	545	7.5%
Industry not applicable	125	1.7%
<b>District of Salmon Arm Total</b>	<b>7,220</b>	<b>100.0%</b>

Source: Statistics Canada 1996 Census

The table presented above demonstrates the reliance of Salmon Arm's economy upon the service sector. This situation is not atypical of other Canadian communities. Major specific employers in the community include:

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- Federated Cooperatives Ltd. and their associated log suppliers in the primary resource area.
- Newnes Machine Ltd. and Federated Cooperatives Ltd. as manufacturing sector representatives. Newnes is an international leader in sawmill equipment and Federated Cooperatives manufactures both plywood and dimension lumber.
- Government services ranging from the District of Salmon Arm to regional (Columbia Shuswap Regional District) and Provincial (BC Forest Service) agencies.
- Tourism related employers such as the visitor accommodation, restaurants and other services which are adjacent to the Trans Canada Highway corridor as it passes through the community.

The continued reliance upon forestry and agriculture as base industries, along with the dominant service sector, is expected to remain the case in Salmon Arm. Efforts to sustain and enhance the forest industry through initiatives such as Forest Renewal BC, as well as the strong preservationist stance of the Agricultural Land Commission, will help to ensure the continued vibrancy of these base sectors. Specific growth areas which have been identified include the tourism and retirement sectors. This is due to many and varied factors ranging from the area's temperate climate, natural beauty, accessibility via various transportation routes, moderate living costs and quiet atmosphere. A migration to the entire Shuswap area (of which Salmon Arm is the key service center) is seen as a key growth industry for the community.

The Trans Canada Highway has, and will continue to play, a primary role in the local economy. The following factors point to various reasons why this is the case.

- Basic industries (particularly forestry) rely on the Trans Canada Highway to move raw materials to the community and finished products to consumers.

- The Trans Canada Highway brings the bulk of passing motorists (private vehicle and bus tours) to the community who are visiting for the first time, along with those destined for Salmon Arm specifically and the Shuswap generally.
- The Trans Canada Highway acts as a key link to those people traveling to Salmon Arm from elsewhere (such as BC's lower mainland and the prairies).

Given Salmon Arm's continued emphasis on forestry, tourism and retirement, it follows that the Trans Canada Highway will remain key to the future of the community.

### .3 Population

The 1996 Census measured Salmon Arm's population at 14,664. The demographic structure of the community's population is summarized in the following table.

Figure 3.4.2

#### Population By Age Cohort

Age Cohort	Percent of Population
0 - 4	6
5 - 14	14
15 - 24	12
25 - 34	12
35 - 44	15
45 - 54	12
55 - 64	11
65+	18

Source: Census of Canada

Forty-one percent (41%) of Salmon Arm's population is over 45 years of age, with 29% in the retirement age cohort of 55 and older. Another noteworthy and dramatic aspect of the community's population is the growth rate over the past years. A summary of population and growth rates over the past 25 years is presented below.

Figure 3.4.3

Population - 1971 To 1996

Year	Population	Growth Rate Over 5 Year Period
1971	7,800	-
1976	9,400	21%
1981	10,800	15%
1986	11,200	4%
1991	12,000	7%
1996	14,600	22%

Source: Census of Canada

The above figures show that Salmon Arm has experienced periods of both modest (1981 to 1991) as well as spectacular (1971 to 1981; 1991 to 1996) growth. The most recent 5 year period (1991 to 1996) included annual growth rates of over 5%, placing Salmon Arm among the most rapidly growing communities in BC.

#### .4 Description Of Community

The District of Salmon Arm encompasses some 188 square kilometers of area, with about 12% of which is water. Existing land uses can be generally located and described as follows:

##### *Residential*

Residential areas are concentrated within 1.5 to 2 km south and east of the southern most bay of the Salmon Arm of Shuswap Lake. They contain a mix of both single and multi-family residential uses with generally more multi-family sections near the community core. A separate and distinct residential area is located at Canoe, in the northeastern most part of the District. Rural residential uses are scattered throughout the municipality, many in close association with agricultural uses.

### *Commercial*

There are two key components of the commercial land base of Salmon Arm. First, an extensive town center commercial area exists on either side of the TCH between 5th Street SW and 6th Street WE, with the railway corridor acting as the boundary to the north. This area contains the most extensive community core commercial area in the Shuswap region and offers a wide range of services. The second major commercial area comprises numerous highway commercial uses straddling the TCH from the District's western boundary to 30th Street NE (just prior to Highway 97B junction). This highway commercial area traverses the town center commercial area with many uses within the latter relating closely to the highway.

### *Industrial*

There are five primary industrial areas within Salmon Arm. These include three locations along the Trans-Canada Highway between the District's western boundary and the town centre area, one on the District's airport lands near Highway 97B at the southeast corner of the District, and the final area at Canoe (Federated Co-op site).

### *Institutional*

There are numerous types of institutional uses in the District including cemeteries, parks, schools, government offices and the like. Most of these services are concentrated in the community core. The town centre commercial and extensive residential areas. The McGuire Lake area beside the TCH host a concentration of institutional uses including the hospital, secondary school and extended care facilities. Institutional uses not close to the community care core include a landfill site near the airport and parks along Canoe Creek and Canoe.

## **.5 Community Services**

### *Water and Sanitary Sewer*

The urban development area of Salmon Arm has been essentially sewerred with water and sanitary sewer mains. The District's sewer treatment plant provides tertiary treatment and therefore a very high effluent quality. The District is presently undertaking an expansion to

the sewage treatment plant. Water is supplied by two sources - Shuswap Lake (70%) and Canoe Creek (30%). Generally speaking, if development is concentrated within the urban development area there will be little need to further expand or upgrade these utilities.

### *Storm Sewer*

The District has recognized the importance of storm water quality and its relationship to Shuswap Lake. In order to preserve the quality of this receiving water body, the District has embarked upon a major program to enhance storm water quality.

### *Transportation*

Salmon Arm is located at the junction of two major highways - the TCH and Highway 97B. Approximately 22 km of the TCH traverses the District. As described above, land uses and activities within the District have a close relationship to the TCH. Other major features of the communities transportation system include:

- CPR main line;
- Salmon Arm airport, offering daily scheduled services to Vancouver;
- public transit system instituted in 1991;
- network of cycling and walking facilities.

### *Existing Servicing Issues*

Key servicing issues in the community relate largely to transportation. These include:

- emphasis on integrated land use and transportation planning;
- need for enhanced pedestrian and bicycle links under or over the TCH to improve safety and recognize the importance of these alternative mixes;
- need for separation of local and inter-regional traffic on the TCH. This could include further access management arrangements such as the frontage roads being constructed along the TCH east of the town centre;
- A major road connection between the TCH and the waterfront area proposed for Ross Street (rail-over road underpass).

## .6 Existing Role of TCH in Community's Land Use and Transportation System

The TCH is fundamentally important to the land use and transportation system of Salmon Arm. From a land use perspective, the following uses rely heavily upon the TCH:

- Highway commercial activities. Extensive highway commercial development has sprung up along the TCH between 30<sup>th</sup> Street SW to 30<sup>th</sup> Street SE. These activities rely heavily on inter-regional traffic using the TCH.
- Town centre commercial. The TCH traverses this area and provides a market for many businesses, including retail, banks, and other activities located in the community core.
- Industrial activities. The three industrial areas near the District's west boundary along with the Federal Co-op site at Canoe rely to varying degrees upon the TCH for movement of raw and finished materials. This degree of reliance is not as strong as that for highway commercial activities, however.
- Residential uses. The TCH serves as a transportation route between the various residential areas of the District. However, given the number of other arterial and collector streets that connect the residential nodes, there is not extensive reliance upon the TCH as an inter-residential link. This is less the case with the Canoe area, however, which served directly by the TCH.
- Commuter uses. Commuters use the TCH as a link between residential areas and commercial activity centre (e.g. town centre commercial, highway commercial, residential sites).

It is clear that the TCH is a key component of the community's land use and transportation system. Of its many roles, however, the connection to highway/tourist commercial traffic is the most direct and obvious.



## **.7 Future Development and Related Issues**

A number of institutional development proposals are at various stages of circulation in the community. Key proposals currently being contemplated include:

- **Waterfront Development.** The lands adjoining Salmon Arm's waterfront north of the town centre have been an underutilized revenue for many years. This began to change over the past 5 - 10 years with the addition of various institutional (parks, CSRD office, government information centre) and multi-family residential uses for the area. This is continuing with recent openings of offices and other commercial enterprises. The waterfront area will be the continued focus of attention and activity.
- **Town Centre Revitalization.** The District has embarked upon a revitalization project which will examine issues ranging from traffic and pedestrian movement to parking, building facades, streetscape and marketing. In combination with waterfront initiatives, this revitalization proposal will place greater emphasis on this area.
- **Residential Development.** A substantial greenfield area has been identified in the District's OCP for further examination as a potential development area (referred to as "Area B"). It has the potential to accommodate residential (various densities), institutional, neighbourhood commercial (e.g.: convenience store) and open space uses. Located south of the TCH is the area of Foothill Road, this would be the next major residential development area of the District.
- **Airport Industrial Site.** The District has experienced some shortages in its industrial land base and is looking to the Airport Industrial site to fulfill this need. The site located well south of the TCH near Highway 97B.
- **Ongoing Demand for Highway Commercial Land.** The District experiences continuing requests for highway commercial to serve a number of purposes ranging from motels, restaurants and gas stations to other less highway dependent activities (i.e. retail commercial).

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These proposed developments, along with general anticipated growth within the municipality point to the following key issues with respect to the role and function of the TCH:

- Planning policies along the new frontage roads east of the town centre. The types, densities and regularities (e.g. setbacks, landscaping, parking, etc.) pertaining to land uses along these frontage roads is a key issue to be addressed by the District in concert with MoTH.
- Need for additional access management planning in the western part of the TCH corridor through Salmon Arm (e.g. area between 30<sup>th</sup> Street SW and the town centre). This area would benefit from the same consideration given the area east of the town centre.
- Highway corridor enhancement. The District has begun a process of developing highway corridor development permit area requirements to ensure the aesthetic appeal of uses fronting the TCH. This measure will improve the visual quality of the corridor and enhance the communities image to tourists.
- Pedestrian access across TCH. Now quite restricted, the District would like to see pedestrian (and bicycle) access across the TCH via underpass at strategic locations.
- Planning for future highway commercial activities. There are two key issues in this regard. Firstly consideration must be given to locating only those uses requiring highway exposure to the TCH. Second, the direction of future highway commercial growth must be considered (e.g. stretch further along the TCH, or move further out from the TCH corridor).
- Landscape standards. Through introduction of a highway corridor development permit areas, the District is attempting to upgrade the visual appeal of the TCH. The District would request that MoTH do the same for its areas of responsibility.
- Traffic safety. An issue of importance to the District is the alignment of the TCH in the vicinity of the Salmon River. The District wishes MoTH to review this from a safety perspective.

- Connection to waterfront area. The District is purposing to construct a through connect between the TCH and the waterfront (north of town centre) along Ross Street. This will have implications for the transportation network in the District's core area.

### **3.5 District of Sicamous**

#### **.1 Introduction**

Sicamous is located approximately 31 kilometres east of Salmon Arm and is 139 kilometres east of Kamloops on the Trans Canada Highway. Sicamous is bounded by Mara Lake to the south, Eagle River to the north and Shuswap Lake to the west. The District Municipality of Sicamous was incorporated in 1989. The 1996 Census indicates that Sicamous has a population of 2,827.

#### **.2 Economy and Employment**

The Sicamous area economy has traditionally relied on the forest industry and agriculture. This reliance has been supplanted by service industries and the growing popularity of the area as a retirement area and tourist destination

The 1996 Statistics Canada labour force participation data indicated that 17.2% of all jobs in Sicamous were in retail trade industries. Approximately 16.4% of all local jobs were in the accommodation, food and beverage sector. With the decline of the houseboat construction industry in the area, it is expected that the number of manufacturing jobs will have declined in the past few years. The labour force statistics provide a strong indicator that tourism has become one of the major industry sectors in Sicamous. Figure 3.5.1 provides an overview of the labour force by industry sector in Sicamous.

Figure 3.5.1

Labour Force By Industry Sector

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	25	2.0%
Fishing and Trapping industries	10	0.8%
Logging and Forestry industries	65	5.3%
Mining (including Milling) Quarrying, and Oil Well industries	25	2.0%
Manufacturing industries	115	9.4%
Construction industries	70	5.7%
Transportation and Storage industries	30	2.5%
Communication and other Utility industries	10	0.8%
Wholesale trade industries	15	1.2%
Retail trade industries	210	17.2%
Finance and Insurance industries	30	2.5%
Real estate operator and Insurance agent industries	35	2.9%
Business service industries	15	1.2%
Government service industries	20	1.6%
Educational service industries	55	4.5%
Health and social service industries	40	3.3%
Accommodation, Food and Beverage service industries	200	16.4%
Other service industries	210	17.2%
Industry not applicable	40	3.3%
<b>District of Sicamous Total</b>	<b>1,220</b>	<b>100.0%</b>

Source: Statistics Canada 1996 Census

Tourism related industries such as accommodations, food and beverage and service industries play a significant role in providing employment locally. It is expected that this trend will continue for the foreseeable future.

### *Tourism*

The access provided to Mara Lake and Shuswap Lake from Sicamous is an attractive feature which leads to substantial tourist traffic each year. Many tourists visiting the Sicamous area have decided that a summer home or retirement home in the area would be desirable. This in turn has spurred growth in retail, trade and construction industries.

Sicamous is known as the "Houseboat Capital of Canada". While tourism continues to be an important sector in the local economy, the level of business conducted by the houseboat industry in the area has leveled off and may be declining. There has been some indication in the area that local houseboat operators may reduce the size of their fleets. There has been some talk locally of attempting to develop Sicamous as a four season tourist destination. However, to date, Sicamous remains mainly a summer tourist destination.

### *Forestry*

The forestry industry has witnessed a net decline in employment in the Sicamous area but continues to contribute to the economy in terms of manufacturing, harvesting, and management. The operations of the Evans Forest Products mill in Malakwa remain constant. This mill currently employs 110 workers and is the largest single employer in the Sicamous area.

### *Agriculture*

Agriculture is no longer considered to be a major sector in the Sicamous economy. According to 1996 Census figures, only 2% of the labour force participation in the area consisted of agricultural production and related service industry workers. To put this figure into context, over 17% of the jobs in the Sicamous area are held in the retail service sector. Some local farmers (i.e. D. Dutchman Dairy) are starting to emerge as niche operations providing specialized products.

### .3 Population

The construction of the Revelstoke Dam generated substantial growth in Sicamous' population in the 1970s. Following the completion of this mega project, the population growth in the area has slowed significantly. The reduction in employment in the agricultural and forestry sectors and the lack of creation of jobs in light industrial and manufacturing sectors has resulted in slow growth in the area.

A report commissioned by the Columbia Shuswap Regional District indicates that the economy and development in Sicamous are intricately linked with tourism and the tourists visiting the area from Alberta.

This is the most easterly community of any size in the Shuswap. If the Shuswap as a whole feels a cultural and economic breeze from Alberta, in Sicamous there is a stiff Prairie wind. For travelers from the east, Sicamous gives the first real taste of the B.C. Interior. Psychologically, many get no farther and as a result, the community has many people with Prairie roots, and businesses founded with Prairie dollars. We believe this will be a permanent features of this community and its fortunes will be linked more than the rest of the Shuswap to energy prices and other events important across the Rockies.

Much of the growth in Sicamous has come as a result of retirees moving to the area to settle and the construction of summer homes for those wanting to take their holidays in close proximity to the Shuswap Lakes system. The 1996 Statistics Canada Census indicated that the population in Sicamous was 2,827.

### .4 Existing Land Use and Development

The construction of the sewer system in Sicamous in 1995 removed a significant constraint to development in the community. The sewer system has spurred redevelopment and intensification through the construction of multi-family housing within the sewer service area.

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There has been significant conversion of available land in the Sicamous area to higher land uses. An example of this is the White Pines development on land formerly developed as a campground. Around the north shore of Mara Lake, other lands are being converted from lower density land use to multiple family residential development. However, single family residential uses remain the predominant residential use in Sicamous. At present, there are 1,563 residential properties in Sicamous.

There is currently a shortage of land available in Sicamous for the construction of single family homes. The Sicamous Official Community Plan indicates that there were approximately 16 hectares of land which were available for residential development in 1995.

Commercial uses in the District of Sicamous are located in four areas - the downtown area, along Sicamous Narrows and the waterfront areas, and along the two Provincial highways. The central business district in Sicamous is adjacent to Finlayson Road and Main Street between Highway 97A and Riverside Avenue. This area accommodates most of the retail space in the District. Commercial uses located on the channel and other waterfront areas include resorts, marinas, charter boat services and houseboat operations. Other commercial uses are located adjacent to the Trans Canada Highway, east of Highway 97A. These commercial uses service the traveling public and include such uses as gas stations, restaurants, motels and hotels. There are 189 business properties in the District of Sicamous.

The Official Community Plan (1995) indicates that the District of Sicamous will permit only light industrial and agricultural industrial activities. The Official Community Plan notes that heavy industrial uses which have a negative effect on the air, water, or ground quality in Sicamous will not be accommodated within the District. As such, there are no heavy industrial uses within the District of Sicamous municipal boundaries. Presently there are only four light industrial properties in Sicamous.

Development constraints in Sicamous include Agricultural Land Reserve (ALR) lands and steep topography. Most of the eastern and northern sectors of the District of Sicamous are in the ALR. These lands have both high agricultural capability but also represent a natural area for the expansion of urban areas in the District of Sicamous.

Indications from the Agricultural Land Commission are that these lands will not be excluded from the ALR. Steep slopes which form the southeastern edge and run along the north central boundary present a considerable constraint to growth in Sicamous.

## .5 Community Services

Sicamous residents have access to a variety of municipal and regional district services. The District of Sicamous provides a wide range of services including water, sewer, storm drainage, road maintenance and various other services.

### *Sanitary Sewer*

The provision of sanitary sewer in 1995 provided increased flexibility to the District in managing growth and development within the District. Higher density residential and commercial uses which could not be developed on septic tank/tile field systems can now be developed in the community. The system is designed to serve a population of 2,500 but only services approximately 300 connections. The District hopes to expand the collection system to promote compact development in the community. The expansion of this system will permit increased densities and infill development in the core area of Sicamous. This will relieve some of the pressure on the demand for new land in the area to accommodate population growth. The continued expansion of the sewer system is supported by the public but elimination of Provincial Government grants have made the extension of the system very costly for community residents.

### *Water*

There are five water systems servicing the community. Technical reports have identified some deficiencies in the water systems which should be remedied in the interest of consistent service delivery and quality, fire protection and public health.

### *Storm Drainage*

Storm sewer drainage in the District of Sicamous is carried out through a limited system of storm sewers, roadside ditches and culverts. A recent survey and community workshop have indicated that local



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residents feel that drainage is an important issue that needs to be addressed in Sicamous. Ditch drainage is generally poor. Many ditches have been blocked by driveways, landscaping or incorrectly installed culverts. A few areas in Sicamous have catch basins and an underground piped system and there is support in the community for expanding this system.

*Recreation*

The community has access to a variety of recreation services and facilities. The community has a curling rink and a recreation centre with an ice rink. The recreation centre and curling rink services are provided to both District and residents of rural areas through arrangements between the District of Sicamous and the Columbia Shuswap Regional District. Improvements to Finlayson Park, Sicamous Beach Park, and lakeside walkways have provided excellent park facilities for local residents.

*Education*

The community has one elementary school and one high school administered by School District No. 89.

*Fire Protection and Policing*

Fire protection is provided by a volunteer fire department and policing is provided by the RCMP from the Salmon Arm detachment.

*Transportation*

The District's road system has been greatly influenced by its location on two Provincial highways. Various frontage roads have been developed along both Highway 97A and the Trans Canada Highway to avoid the proliferation of access drives to the highways. The future improvement of the Trans Canada Highway as well as Highway 97A is of great interest to the District of Sicamous as the highway system presently dissects the community into three sub areas. The construction of a 1.75 kilometer west bound passing lane is presently being constructed west of the Bruhn Bridge up CPR hill.

**.6 Existing Role Of The Trans Canada Highway In The  
Community and Highway Related Issues**

Both the Trans Canada Highway and Highway 97A are used extensively by local traffic for commuting to places of employment as well as for shopping, recreation and other trip purposes. The Trans Canada Highway in particular provides access from Sicamous to Salmon Arm for commuters and shoppers.

As the community is bisected by the Trans Canada Highway, the highway also functions as an arterial road which provides the primary east west road link in the community.

There are a number of highway issues from the perspective of the community:

- The District wishes to ensure that safe access will be provided from the Trans Canada Highway to proposed development west of the channel. This is an issue which has received considerable discussion between the District and the Ministry of Transportation and Highways.
- The District is eager to see the alignment for upgrading of the Trans Canada Highway through the community confirmed as soon as possible by the Ministry. This would allow the District to finalize its own plans related to the provision of services, the design of the District's road network and the review of land uses adjoining the highway.
- There are also some concerns related to the geometry of the intersection of the Trans Canada Highway and Highway 97A. Larger trucks turning south from the Trans Canada Highway onto Highway No. 97A have tipped loads due to the superelevation of Highway 97A at the intersection.
- The extensive development of frontage roads are seen to have a negative visual and aesthetic impact on the community. Efforts to improve the frontage roads through removal of billboard signs as well as improvements to landscaping are seen as positive steps in the improvement of the community's visual character.

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- Council's policy is to permit a range of highway commercial uses in areas that have been designated Highway Commercial. Currently, almost all highway commercial uses are located on frontage roads along the Trans Canada Highway. However, little pressure for new highway commercial development along the Trans Canada Highway is being exerted at this time.
- Many of the District's future residential areas are located north of the Trans Canada Highway. This will place greater pressure on the highway for local use. Widening of the highway would also serve to further divide the highway.
- Pedestrian access across the Trans Canada Highway particularly for school children is presently an issue (e.g. Rauma Crescent area). The District expects that this will become a larger issue as continued residential development takes place north of the Trans Canada Highway and as traffic increases on the highway.
- The District is interested in exploring opportunities to incorporate turning lanes in the upgrading of the Trans Canada Highway to address future safety and congestion issues.
- Lighting of frontage roads, the Trans Canada itself and the bridge is an issue. The District wishes to see increased illumination to address potential safety issues.
- While not a safety issue, the District is interested in exploring opportunities for entry features and pull outs at both the eastern and western entrances to the community. The opportunity to integrate visitor information services with such facilities is also of interest to the District.
- Given the growing importance of the tourism industry to Sicamous, there is the concern that future improvements to the Trans Canada Highway should address the visual impact and aesthetic concerns.

- As the community is dissected by two major highways, there is an interest in the attenuation of noise particularly as traffic volumes and truck traffic in particular increases.

## .7 Future Land Use And Development

The District of Sicamous adopted its present Official Community Plan in 1995. A review of the OCP is proposed for 1998 and it is anticipated that some changes to the objectives and policies contained in the plan will result. A key initiative of the District since the adoption of the existing OCP is the establishment of a community sewer in the District.

In many respects, the District now has options to change its present land use and development strategy which did not previously exist. The ALR poses significant constraints to development as does the topography of the District. The District's present strategy is based on the following:

- infill and intensification of land uses particularly in areas served by sanitary sewer;
- development of the westside area located across the channel;
- development of hillside areas and the Silversands area north of the Trans Canada Highway.

The District's present strategy will focus attention on the use of the Trans Canada Highway for local access to future development areas. The area west of the channel can only be accessed from the Trans Canada Highway. A preliminary alignment has been identified for a major access road in this area. Changes in the location of the present access on to the Trans Canada Highway as well as improvements to the intersection (i.e. turning lane) will be required to provide safe access to this area. The potential for a second crossing of the channel (i.e. extension of Main Street) is not perceived as a viable and cost effective solution at this point in time.

Further development north of the Trans Canada Highway will also require the use of the highway for local traffic. Increased local traffic can also be expected at key intersections of the Trans Canada Highway at the existing north-south roads. As the schools and recreational facilities are all located south of the Trans Canada Highway, there will

be increased pressure for pedestrian underpasses or overpasses to permit safe access to schools.

### 3.6 City of Revelstoke

#### .1 Introduction

The City of Revelstoke is an incorporated municipality located 148 km west of Golden and 102 km east of Salmon Arm by way of the Trans Canada Highway. Revelstoke's municipal boundaries encompass 4,006 hectares. Mica Creek lies to the north and the Arrow Lakes and the Kootenays are located to the south of Revelstoke. Revelstoke's location on the Columbia River between the Selkirk and Monashee Mountain Ranges along with its setting on the main east west transportation corridor in British Columbia has allowed it to develop as a tourism center.

The Revelstoke area includes Rogers Pass and Glacier National Parks to the east; Mica Creek and Kinbasket Lake to the north, Three Valley Gap to the west; and the northern portion of the Kootenays and Arrow Lakes to the south. The 1996 Census indicated that Revelstoke has a population of 8,047.

#### .2 Economy and Employment

Revelstoke's economy is directly linked to the city's geographic location, physical environment and natural resources in the region. The population growth in Revelstoke has largely been tied in the past to mega-construction projects. Starting in 1965, three hydroelectric dams which created expansive reservoirs were built in the Revelstoke area. These mega projects bolstered the local economy and provided for significant population growth over the next 10 to 15 years. Unfortunately, the dams flooded agricultural and forest lands which significantly reduced the forestry and agricultural potential of the area thus perhaps eliminating some future employment possibilities for area residents.

The Revelstoke and Mica Dams, which produce approximately 33% of all of B.C. Hydro's electrical power employ 85 Revelstoke residents and create a number of contract employment opportunities.

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Following the completion of the hydroelectric projects in the early 1980s, the population and economy both declined significantly. Since that time, the development of an economic development strategy for the community, the revitalization of the downtown core, and a focus on tourism and forestry have helped to revive the local economy.

At present, the economy in Revelstoke is based on four primary sectors which include: tourism, the forest industry, government services and transportation.

Major public sector employers in the Revelstoke area include: Parks Canada, Ministry of Transportation and Highways, and the Ministry of Forests. Employment is also created by local educational, health and municipal services. The corporate restructuring of CP Rail has effectively decreased its relative position as a major employer in Revelstoke. CP Rail still provides employment in the City, but not to the extent that it has in the past.

*Tourism*

Since the Revelstoke area was opened to tourism by the construction of the Trans Canada Highway through Rogers Pass in 1962, the tourism industry has continued to be a factor in the diversification of the local economy. It is estimated that this sector alone comprises one quarter of the economic base activities in Revelstoke. With its central location on the Trans Canada Highway, Revelstoke benefits in the summer from its proximity to the Shuswap Lakes system and to the Monashee and Selkirk Mountains. Parks Canada indicated that the number of people traveling through Mount Revelstoke and Glacier National Parks on the Trans Canada Highway increased by 35% from 2.8 million in 1988 to over 3.8 million in 1995.

The 1995 Revelstoke Area Tourism Profile indicates that tourist visits to local attractions such as the Revelstoke Dam Visitor Centre, Glacier National Park, and the Rogers Pass Centre have increased between 1990 and 1994. Visits to the Revelstoke Railway Museum which opened in July of 1993 also increased each year.

An influx of investment in the local tourism sector between 1985 and the present has created an employment base which is the largest of any sector in the local economy. In 1996, close to 600 people were

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employed in Revelstoke's accommodations, food and beverage and recreation industries. Of those employed, B.C. Statistics estimated that 447 of the jobs were directly attributable to tourism activity in the area.

A development which could significantly impact the Revelstoke area is the development of Mt. Mackenzie as a major ski resort. Planning for this project has been ongoing for a number of years and discussions are now ongoing between the City and investors in Austria.

### *Forestry*

The forestry industry which includes logging, hauling, processing and silviculture accounts for approximately 25% of Revelstoke's employment. Over 600 people are employed in the forestry industry in Revelstoke and the surrounding area. This level of employment represents a growth of 35% in forestry related employment since the 1980s.

The 1995 Revelstoke Community Profile indicates that the City is the base for a number of forestry operations including: three sawmills, one cedar shake and shingle mill, one pole yard, and several other value added wood manufacturing plants. Downie Timber which employs 200 at its sawmill operations is the largest manufacturer in the Revelstoke area.

There are also over 30 harvesting contractors involved in forestry industries including: harvesting hauling, road building, and silviculture. These contractors employ over 200 Revelstoke area residents. Recent issues in the forestry industry including improved forest management practices have created employment opportunities in silviculture, forestry management, forestry consulting and value added wood manufacturing in Revelstoke.

### *Transportation and Public Sector Employment*

The restructuring of CP Rail resulted in a number of job transfers and job loss in the Revelstoke area. Fortunately, Revelstoke provides services to a large geographic region and as such is the home to a number of government offices. Employment in federal, provincial, municipal governments as well as in health and education services provided over 700 jobs for Revelstoke residents in 1995.

Statistics Canada's 1996 Census figures provided an indication of the breakdown of the labour force by industry in Revelstoke. These figures are provided in the following table.

**Figure 3.6.1**

**Labour Force By Industry Sector**

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	15	0.3%
Fishing and Trapping industries	0	0.0%
Logging and Forestry industries	320	7.2%
Mining (including Milling) Quarrying, and Oil Well industries	95	2.1%
Manufacturing industries	450	10.1%
Construction industries	260	5.8%
Transportation and Storage industries	580	13.0%
Communication and other Utility industries	120	2.7%
Wholesale trade industries	80	1.8%
Retail trade industries	650	14.6%
Finance and Insurance industries	70	1.6%
Real estate operator and Insurance agent industries	85	1.9%
Business service industries	85	1.9%
Government service industries	220	4.9%
Educational service industries	230	5.2%
Health and social service industries	275	6.2%
Accommodation, Food and Beverage service industries	590	13.2%
Other service industries	265	5.9%
Industry not applicable	70	1.6%
<b>City of Revelstoke Total</b>	<b>4,460</b>	<b>100.0%</b>

*Source: Statistics Canada 1996 Census*



The 1991 Census indicated that over 20% of those employed in Revelstoke were employed in the transportation industry. Since 1991 this number has declined substantially to 13.7% of the labour force due in large part to the corporate restructuring of CP Rail. However, it should also be noted that accommodation, food and beverage as well as retail employment have increased with increased levels of tourism in the Revelstoke area.

### .3 Population

Prior to the 1960s, the population of Revelstoke grew at a fairly steady rate. The construction of the Trans Canada Highway which linked Revelstoke with the rest of the country opened the area to an influx of visitors. Population growth in Revelstoke has largely been dependent on mega-projects work in the area such as the construction of the Revelstoke Dam in the late 1970s and early 1980s. During this period the population fluctuated considerably. Since the early 1980s, population growth in the area has stabilized. Population growth in Revelstoke was 4.1% between 1991 and 1996 or less than 1% per annum. This followed a population decline of 17.5% between in 1981 and 1991. The population of Revelstoke in 1996 was 8,047. The Official Community Plan projects that after years of fluctuation, the population of Revelstoke has now settled at a sustainable level. Revelstoke population projections indicate that the local population will likely grow at a rate of 1% annually for the foreseeable future.

### .4 Land Use And Development

The City of Revelstoke completed the revision of its Official Community Plan in 1996. The plan provides a strategy for the municipality to prepare for future development and sets out design guidelines to enhance the character of the City.

The plan establishes various policies, principles and recommendations which address the following issues:

- location, amount, type and density of future residential development;
- design guidelines and development permits for development in the Central Business District;
- provision of infrastructure and other services;

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- affordable, special needs, and rental housing;
- heritage conservation and enhancement;
- transportation;
- environmentally sensitive and hazardous areas;
- parks and trails;
- sand and gravel resources.

In preparing for the future, the City of Revelstoke Official Community Plan addresses issues which the municipality will face in the future. These issues include:

- expansion of water and sewer infrastructure should major development occur;
- exploring methods to better use the area's natural resource base to sustain the community's economy in the years to come;
- placing emphasis on tourism as an economic focus for the area;
- recognition that tourism is a driver in the local economy and as such commercial and highway commercial development in the area must be improved to attract tourism to the area;
- becoming a sustainable community by encouraging infill development to better utilize underused services and prevent urban sprawl;
- encourage the Ministry of Transportation and Highways to upgrade the existing Trans Canada Highway corridor rather than select a new alignment.

Significant fluctuations in Revelstoke's population since the 1970s have resulted in a considerable amount of development in the area. The majority of the housing stock in Revelstoke is located in the following areas:

- Central Revelstoke
- South Revelstoke
- Arrow Heights
- Big Eddy
- Columbia Park

The 1991 Census indicates the following breakdown of dwellings by structure type in Revelstoke:

**Figure 3.6.2**

**Dwellings by Structure Type**

Dwelling Type	Number of Dwellings	% of Total Number of Dwellings
Single Detached House	2,025	69.1%
Semi-Detached House	135	4.6%
Row House	50	1.7%
Detached Duplex	60	2.1%
Apartment Building	395	13.5%
Other Single Detached	15	0.5%
Movable Dwelling	250	8.5%
<b>Total Private Households</b>	<b>2,930</b>	<b>100.0%</b>

The 1991 Census figures indicate that a majority (69.1%) of the dwellings in Revelstoke are single detached dwellings.

The Official Community Plan also provides some indication of the demand for new dwellings in the Revelstoke area for the period between 1994 and 1999 based on a household size of 2.6 persons per household. Housing demand in Revelstoke will require the following number of units between 1994 and 1999:

- 108 Single Family Dwellings
- 34 Multiple Family Dwellings
- 13 Moveable Dwellings
- 2 Other Dwellings
- **157 Total New Dwellings Required**

Even after 1999, a substantial inventory of residential land will be available for development in Revelstoke.

The Central Business District (CBD) is centered on Mackenzie Avenue and extends from Victoria Road to Fourth Street and from Garden Avenue to Orton Avenue. Commercial uses in this area are quite broad

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and include: retail operations, financial institutions, personal service establishments, restaurants, hotels, professional offices and business offices. While there is limited vacant land remaining for development in the CBD, there is potential for redevelopment of existing commercial uses in the CBD to more intensive commercial uses.

The highway commercial uses in Revelstoke are centered on the Trans Canada Highway intersections located north and east of the Columbia River. The Trans Canada Highway-Laforme Boulevard-Victoria Road intersection is one of the key areas in terms of highway commercial activity. This intersection and the intersection of the Trans Canada Highway and Highway #23 both support highway commercial uses such as fast food restaurants, motels, and service stations. A campground is also located at the eastern end of the City, just south of the Trans Canada Highway. Traffic volumes on the Trans Canada Highway near Revelstoke continue to increase annually. This will result in continued demand for commercial land along the Trans Canada Highway although it is felt that for the foreseeable future, visitor accommodation along the Trans Canada Highway is at saturation. The Official Community Plan indicates that it is Council's policy to encourage new highway commercial development in the area on either side of the Trans Canada Highway from the Columbia River to the Highway #23 north intersection.

Service commercial uses such as storage, automobile repair, building supply, welding shops, and small scale manufacturing are prominent in two parts of Revelstoke. The primary service commercial area is located to the east of Highway #23 and to the north of the Trans Canada Highway. The Big Eddy area also contains some service commercial uses.

Industrial activity has traditionally been the driver of the Revelstoke economy. Industrial activities in the area include light industrial, heavy industrial and airport industrial. Light industrial uses are accommodated in two industrial parks: one is located on Powerhouse Road in South Revelstoke while the other is located on Westside Road. The light industrial park on Westside Road is less developed but accommodates some small scale forest product manufacturing operations. There is still room for more industrial development in these industrial parks. Community surveys indicate significant support for continued light industrial use in these areas.

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Heavy industrial use in the area includes uses which require the storage and processing of raw materials. Downie Street Sawmill (South Revelstoke) and Joe Kozek Sawmill (Arrow Heights) are both examples of heavy industrial uses in the area. Forestry activities and the hydroelectric complex located on the Westside road also constitute heavy industrial uses. Council's policy in regards to heavy industrial uses is to recognize existing uses and to consider new heavy industrial uses for the area. Space on Westside Road exists for further heavy industrial development and it is Council's policy to direct heavy industry to that area.

## .5 Community Services

### *Water*

The City of Revelstoke provides municipal water services to local residents through two local water systems: the Greeley Creek system and the Big Eddy Waterworks District system.

The Greeley Creek system provides water to most of the community with the exception of those residents of Westside Road and Kelly Flat north of the Trans Canada Highway. The components of this water system include a water intake in Greeley Creek located outside of the municipality's boundaries (supplemented by secondary sources in Hamilton and Bridge Creeks), a reservoir which is elevated above the Trans Canada Highway in northeastern Revelstoke and a distribution system which serves most of the community. Water is provided through a gravity driven system. There appears to be adequate capacity in this water system to serve the future needs of the community. The City is now investigating options for treatment of the community's water supply.

The Big Eddy Waterworks District system also provides water to some residents in Revelstoke. This water system existed in the Big Eddy area prior to its incorporation with the City of Revelstoke in the early 1980s. The intake for this water system is located in Dolan Creek. Much like the Greeley Creek system, the Big Eddy system also provides water through a gravity system. The Big Eddy water system can also serve some additional demand for water.

### *Sanitary Sewer*

Sewer collection and treatment facilities in Revelstoke are provided by the municipality but service only a portion of the City. A series of lagoons provides secondary treatment of sewage effluent. Treated effluent is discharged into the Illecillewaet River. The treatment plant is operating at approximately 60% of capacity.

The community's sanitary sewer system serves the following areas:

- Central Revelstoke;
- Columbia Park;
- portions of South Revelstoke, Northeast Revelstoke, and the Highway Corridor

In the parts of Revelstoke which are not serviced by the community sewer system, lots are serviced by on-site sewage disposal systems such as septic tanks. Soils in Revelstoke and adequately sized lots have permitted the effective use of such on-site sewage disposal.

### *Storm Drainage*

Storm drainage levels are provided in different ways in Revelstoke. Underground storm drainage exists in intensively developed parts of the City. In other parts of the City such as Arrow Heights and Big Eddy, open ditches provide the storm drainage function. In general, storm drainage is adequately provided in Revelstoke. There is some concern regarding combined sanitary and storm sewer systems in certain areas. These areas create large flows to the sewage treatment system during large storms and high snow melt events.

### *Other Services*

The City of Revelstoke Official Community Plan indicates that the City is generally well serviced by water, sanitary sewer, and storm drainage systems. These systems all seem to have additional capacity to meet some future demand. However, the Official Community Plan notes that any major new development in Revelstoke could create a requirement for upgrades and expansion to water and sanitary sewer services.

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B.C. Hydro provides electrical power, B.C. Tel provides telephone service, and B.C. Gas provides gas (piped propane) service to the residents of Revelstoke.

*Education*

Revelstoke provides a number of educational opportunities to its residents. The Revelstoke area is home to five elementary schools, one secondary school and one alternate education school. A satellite campus of Okanagan University College is also located in Revelstoke.

*Government Services*

As the service centre to a large geographic region, Revelstoke is the home to a number of federal, provincial, regional and municipal government offices and activities. Examples of these offices include:

- Parks Canada, Post Office (Federal)
- Health Unit, BC Forest Service, BC Hydro and the Ministry of Transportation and Highways (Provincial)
- Columbia Shuswap Regional District Sanitary Landfill Facilities (Regional)
- City of Revelstoke offices, public works yard, recreation and community facilities (Municipal)

*Transportation*

Revelstoke's Official Community Plan indicates that the City depends on the various transportation links which exist in the community. The transportation corridor which includes the Trans Canada Highway and the mainline of CP Rail is aligned in an east-west direction through Revelstoke. Highway #23 provides access from Revelstoke to Mica Creek as well as to resources to the north. Highway #23 also provides access to the Kootenay Region to the south.

The Trans Canada Highway and Highway #23 both form part of Revelstoke's Major Street Network. The Official Community Plan notes that the Ministry of Transportation and Highways has completed preliminary studies related to the upgrading of the Trans Canada Highway in and around Revelstoke. The studies completed by the

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Ministry of Transportation and Highways analyzed four options for upgrading the Trans Canada Highway including:

- Upgrade the existing Trans Canada Highway Corridor;
- Upgrade north of the existing TCH Corridor through Westside Road/Columbia Park areas;
- Upgrade south of the existing TCH corridor through Arrow Heights (just south of Illecillewaet River);
- Upgrade south of existing corridor through Arrow Heights (just north of Nichol Road).

The Revelstoke Official Community Plan recognizes that the selection of any of these options would influence future development patterns and land use and would also have environmental, social and economic impacts.

#### .6 Relationship Of The Community To The TCH

Revelstoke is located on Trans Canada Highway which is aligned in an east west direction. However, the Columbia Valley sits on a north south axis. In some respects, such as distance, Revelstoke is isolated from surrounding communities. The Trans Canada Highway provides a linkage for Revelstoke with the Columbia Shuswap Region.

The Revelstoke area was opened to tourism by the construction of the Trans Canada Highway through Rogers Pass in 1962. The tourism industry has continued to be a diversifying factor in the local economy providing employment in a region which has been susceptible to changes in resource based industry as well as boom and bust cycles created by the construction of mega projects such as the dams. The tourism industry, which has continued to create an employment base in the area since 1986, is heavily reliant on the access provided to Revelstoke by the Trans Canada Highway. Revelstoke is evolving into a four season tourist destination and the proposed development of Mt. Mackenzie will further contribute to this objective. The area boasts endless summer recreation possibilities and the increased presence of winter heli-skiing and snowmobiling opportunities.

The Trans Canada allows access to Revelstoke from international airport gateways in Vancouver and Calgary as well as to the populations of the Interior, the Lower Mainland, Alberta and points beyond.



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The Trans Canada Highway is also important to the forestry industry in Revelstoke. The connection of the community to the highway allows the transport of timber and forest products to and from the community for milling and for distribution to other markets.

Residential development in the Big Eddy area could potentially have an impact on traffic on the Trans Canada Highway. Council's policy in the Official Community Plan is to only allow rural and low density residential development in Northeast Revelstoke if the cumulative impacts do not result in unsafe situations at the intersection of access roads and the Trans Canada Highway. Even if residential development is to proceed in the area, growth is expected to be slow and the immediate traffic impacts will be minimal.

A further development which could impact the Trans Canada Highway is the development of the Mt. Mackenzie Ski area. This development would require significant improvements to the existing intersection on the Trans Canada Highway and may require a second access.

Given the growing importance of tourism to the local economy and given the importance of the TCH to local tourism, there is considerable interest in the future of the TCH. A local committee has been established by Council to make recommendations on enhancing the community to increase the appeal of the City to visitors.

The committee has concentrated much of its attention to the Trans Canada Highway. The committee has made various recommendations related to the Trans Canada Highway. These include:

- Reduction in posted speeds along the eastern approaches to the City to increase safety and permit more use of the eastern entrance to the City (e.g. section between KOA and tourist information booth).
- Development of rest areas, lookouts and tourist information facilities (e.g. Mt. Revelstoke side of highway, old Columbia Mt. Center site, west side of Columbia River bridge).

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- Improvement and revision of signage to better promote the City of Revelstoke including the use of the City's design for signage (e.g. as used in downtown).
- Clean up the western approaches to make it more park like.

The committee's objective is to upgrade the visual quality of the TCH corridor through the City in order to ensure that it reflects the attractiveness and design quality developed in the downtown core and elsewhere in the community.

There are other highway related issues in Revelstoke. These include:

- Ensuring that future upgrading mitigates the community severance caused by the existing alignment of the TCH. Of particular concern is pedestrian access across the highway.
- Upgrading the exiting intersection of Highway #23 and the TCH to ensure safety in the future.
- Better definition of access drives to businesses along the TCH and better access control.

The present policies of the Council as set out in the OCP recommends the retention of the existing alignment of the TCH through the community rather than establishing a new alignment.

There are also other highway related issues which relate to Highway #23 such as the resolution of access from Highway #23 to Westside Road.

### **3.7 Town of Golden**

#### **.1 Introduction**

The Town of Golden is an incorporated municipality located on the confluence of the Columbia and Kicking Horse Rivers. The Town presently has a population of 3,968 and encompasses an area of 1171.3 hectares.

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## **.2 Economy And Employment**

Forestry has traditionally been the mainstay of the Golden economy. The 1997 Golden Community Profile produced by the Golden and District Economic Development Commission indicates that the forestry sector is responsible for 56% of the earned income and 70% of the gross income in the Golden area. Evans Forest Products is one of the larger employers in the Golden area.

The forest industry suffered a downturn in 1996 with one of the major employers shutting down. Since that time the forest industry has re-established itself through restructuring and diversification. There is an increasing emphasis on the production of laminated veneer lumber, veneers, specialty cut lumber and other specialty products. An issue which may limit the further development of the value added wood products industry is the supply of timber. Much of the specialty products are shipped by truck not rail.

While mining is not a major sector in the local and regional economy, there are opportunities for further processing of silica which is mined by Mountain Minerals. Opportunities include the establishment of a manufacturing plant for flat glass.

The Golden area is not served by natural gas and this is seen as a deterrent to the development of industries requiring a source of cheap energy. Opportunities for the establishment of a plant and storage facility for liquid natural gas are being expressed. Such a plant would draw on the Golden region's rail and highway facilities for shipping of liquefied natural gas.

The transportation sector has been a small but important sector of the local economy. CP is incrementally expanding operations in Golden as it rationalizes the locations of its workforce throughout Canada.

A sector of the local economy which is growing rapidly in Golden is tourism. Various tourism markets are impacted by this growth.

A major project is the development of the White Tooth Ski area as a five star four seasons destination resort. An interim agreement has been signed with a developer for the purchase of the ski area. The development, known as Golden Peaks, will occur over a seven year

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period and will involve the construction of 200 hotel units, 200 condominiums and timeshares, 70 town houses and associated commercial and lodge development. The first phase calls for the development of five new ski lifts and a gondola.

The Town is also experiencing considerable growth in tourist accommodation. The past few years have seen major development of highway oriented accommodation facilities in response to increasing restrictions in the National Parks (e.g. Banff, Lake Louise) as well as in Canmore. Two additional four star hotels are planned in the near future and a major hotel and restaurant complex are planned for an 8 acre site along the Trans Canada Highway (Old fruit stand site).

In view of the expanding tourism activity in Golden, a new tourist information center is proposed immediately east of the Highway #95 overpass.

Growth in other tourism markets such as heli-skiing, hiking and whitewater rafting is also evident.

The 1996 Census provided the following breakdown of labour force by industry sector in Golden:

**Figure 3.7.1**

**Labour Force By Industry Sector**

Industry	Labour Force by Industry Sector (1996)	% of Labour Force by Industry Sector
Agricultural and related services	15	0.7%
Fishing and Trapping industries	0	0.0%
Logging and Forestry industries	155	7.1%
Mining (including Milling) Quarrying, and Oil Well industries	25	1.1%
Manufacturing industries	225	10.3%
Construction industries	95	4.4%
Transportation and Storage industries	295	13.6%
Communication and other Utility industries	10	0.5%
Wholesale trade industries	35	1.6%
Retail trade industries	240	11.0%
Finance and Insurance industries	20	0.9%
Real estate operator and Insurance agent industries	30	1.4%
Business service industries	60	2.8%
Government service industries	130	6.0%
Educational service industries	155	7.1%
Health and social service industries	120	5.5%
Accommodation, Food and Beverage service industries	420	19.3%
Other service industries	135	6.2%
Industry not applicable	10	0.5%
<b>Town of Golden Total</b>	<b>2,175</b>	<b>100.0%</b>

*Source: Statistics Canada 1996 Census*

### .3 Population

The 1996 Census indicates that the Town of Golden has a population of 3,968. Golden has grown slowly but steadily over the past ten years. This population growth is impressive in light of the town's status as a resource town. The population in many resource towns decreased significantly in the 1980s. Between 1981 and 1991, Golden's population actually increased by 285 people or 8.3%.

The Official Community Plan indicates that the population growth in Golden peaked in the early 1980s and decreased towards the end of the decade. The lower growth which occurred in the late 1980s through until 1996 will likely be the benchmark for the years to come. Between 1991 and 1996, the population in Golden grew by 6.64%. This translates into an annual growth rate of 1.29% between 1991 and 1996. The Town of Golden Official Community Plan (1993) projects growth between 1993 and 1998 to be in the range of 2.5% to 3.5%.

### .4 Land Use And Development

The Town of Golden covers 1,171 hectares of land. The Official Community Plan indicates that the majority of the residential units in the Town of Golden are located south of the Kicking Horse River on the Valley bottom. Recent growth in the Town of Golden has occurred in the northeast quadrant of Town, north of the Trans Canada Highway, and in the southeast quadrant (Mount Seven area). Due to servicing constraints in the southeast, more growth will be directed to the northeast area. Infill development has also occurred in the built up area of the community but future opportunities for this type of development are limited. B.C. Statistics data to July of 1996 show that there are 1,242 residential properties in Golden.

The Town of Golden Official Community Plan (1993) indicates that the composition of the housing stock in Golden in 1991 to be as follows:

Figure 3.7.2

Dwellings by Structure Type

Housing Type	# of Units	Percent of Total
Single family	775	57.8%
Movable dwelling	235	17.5%
Multi-Family	247	18.4%
Other	83	6.3%
Total	1,340	100.0%

Both the Official Community Plan and the comprehensive development plan indicate that 59 hectares of land has been designated for future residential use. Some 57 hectares of land has also been identified for rural residential use. The rural residential land is located in the northeast quadrant of the Town.

The Town of Golden is the service and supply centre for the Columbia and Kicking Horse region. Commercial uses are located in three different areas within Golden. The downtown is the primary commercial area in the Town of Golden. Commercial uses in the downtown include retail uses, personal service uses and professional offices. There is currently no vacant land in this area for new development.

The highway commercial area located adjacent to the Trans Canada Highway is another major area of commercial concentration in the community. This area consists of commercial uses which are intended to serve the traveling public and include gas stations, convenience stores, restaurants and motor hotels. Highway commercial space land with highway frontage is in short supply in the community.

The third commercial area consists of service commercial uses. These uses are generally located southwest of the interchange on the Trans Canada Highway.

Industrial land uses are diverse. The Town of Golden Official Community Plan recognizes the primary industrial uses to be include transportation and forestry.

The breakdown of industrial land uses in Golden is as follows:

• Light Industrial	11 hectares
• Heavy Industrial	83 hectares*
• Railway Industrial	50 hectares
• Airport Industrial	11 hectares
• Total	155 hectares

The asterisk\* indicates that Evans Forest Products accounts for approximately 77 hectares of the heavy industrial use in Golden. The Official Community Plan indicates that the Town of Golden is short of industrial land particularly land for service industrial uses. The Official Community Plan notes that the Town of Golden may have to consider an increase to the supply of vacant industrial land through a boundary extension.

An Official Community Plan for the Town of Golden was completed in 1993. The plan provides a strategy for future development as well as for the enhancement of the community through the use of development permits. Various policies, principles and recommendations are established in the plan and they address the following:

- Location, amount, type and density of future residential development
- Design and improving the visual appearance of Golden
- The provision of infrastructure and other services
- Affordable Housing
- Transportation
- Parks
- Sand and Gravel Resources
- Environmental Protection

The Town of Golden Official Community Plan recognizes various trends which may have an impact on the town in the future.

These impacts include:

- recognition of the limited financial capabilities of the Town of Golden and that policies cannot overburden the taxpayer;
- increased tourist traffic and associated pressure on local road networks;



- a need to improve the visual quality of commercial development in Golden to continue to attract tourists to the area;
- current lack of industrial land will require a designation of more land for light industrial uses;
- recognition of the effects that proposed bypasses of both the Kootenay Highway and the Trans Canada Highway could have on the local economy;
- a need to be proactive in upgrading infrastructure services to service a steadily growing population.

## .5 Community Services

The Town of Golden provides a number of services to local residents including water and sewer.

### *Sanitary Sewer*

The Town of Golden has generally been proactive and maintained an infrastructure improvements program which was outlined in its 1985 Official Community Plan. With the increase in population in the Town of Golden, two sewer lift stations will require upgrading in the near future. The Official Community Plan indicates that if any significant development is to occur in the northeast or southwest sectors of the town, an upgrade of sewer trunkmains and lift stations in the older portion of the town downstream from the new development will be required.

### *Water*

Water is provided to Golden residents through a municipally owned water system which is fed by the Columbia River. The Town of Golden Official Community Plan indicates that the water storage and distribution system is in good condition.

### *Parks*

The Town of Golden has a number of parks to service local residents. In 1991, a parks strategy was undertaken to determine future parks requirements. It was determined that Golden has an adequate supply of

District parks and in fact, has enough district parks to service a population of close to 5,000.

The supply of neighbourhood parks was also determined to be adequate for the population. However, it was determined that two neighbourhoods in Golden (the northeast bench and King Acres areas) required a park.

### *Education*

Golden is the home of 1 secondary school (a \$10 million facility completed in 1990) and 6 elementary schools. The College of the Rockies also has a campus in Golden.

### *Transportation*

The road network in the Town of Golden has been influenced by the two major provincial highways in the area. The Kootenay Highway is used more in local trips by Golden residents than the Trans Canada Highway. The Trans Canada highway is used more by those commuting to regional employment and by school children being transported from Field to Golden. The Trans Canada Highway is also a major transportation corridor in the region bringing an influx of tourists and other traffic to the area.

The Town of Golden has a well developed system of local roads which includes:

- 43 km of local streets and roads
  - 8 km of major urban roads
  - 4 km of development roads
- 
- **55 km Total Road and Street Distance**

## **.6 Relationship Of The Community To The TCH**

The accommodation and food service industry in Golden are two of the main benefactors of the town's proximity to the Trans Canada Highway. During the peak summer tourist season, approximately 2 million cars carrying as many as 3 million people pass through Golden.

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Studies have been conducted to examine the implications associated with the construction of a bypass for the Trans Canada Highway which would dissect the northeast corner of the Town and then travel north of Golden's present boundary. This new bypass would increase traffic safety in the area but would have a definite negative economic impact on the accommodation and food service industry in Golden. The bypass is a concern to local residents as there is some fear that this will substantially reduce the flow of tourist and business traffic in Golden. Generally, the community would prefer to see the present alignment retained.

The Trans Canada Highway bisects the Town of Golden and cuts through the northeast quadrant of Town. The major road network in the Town of Golden indicates four access points from the Town to the Trans Canada Highway. Three of the access points are located to the south of the Trans Canada Highway and link the built up area of Golden to the highway. One access point links the rural residential community to the northeast Trans Canada Highway.

The majority of the built up area in Golden lies to the south of the Trans Canada Highway. This area constitutes the large portion of all residential and commercial development in the community. The majority of the built up area is serviced by a grid pattern road system. There are major roads within the road network such as Ninth Avenue which runs east to west through the core of the built up area and Tenth Avenue South which runs north to south through Golden.

As the bulk of the built area in Golden is serviced by a local road network which is located to the south of the Trans Canada Highway, travel within the community does not have a considerable impact on traffic flows on the highway. The Kootenay Highway which travels south is more extensively used by local residents for trips within the community than the Trans Canada Highway. Local and regional traffic using the Trans Canada Highway on a daily basis would include those commuting to regional employment (e.g. Donald) and school children traveling by bus to Golden.

Forestry and manufacturing related to forestry have traditionally been the primary drivers in the Golden economy. Both the Trans Canada Highway and the Kootenay Highway are important transportation corridors in terms of the access they provide to regional and

interprovincial markets for forestry products manufactured in Golden. The Trans Canada Highway provides access to points in the west including Kamloops, the Lower Mainland, and the United States. This highway also provides access to eastern markets including Alberta. As the forest sector becomes more diversified with a greater emphasis on value added products, the greater the emphasis on trucking as a means of shipping product from the community.

Tourism continues to grow in importance as a secondary driver in the Golden economy. Food and beverage and accommodation industries are the main beneficiaries of transportation and tourist travel on the Trans Canada Highway through Golden. This traffic is projected to grow in response to the growing popularity of the Rockies and destinations in the Columbia Shuswap region. The growth of Golden as a tourist destination will also continue with the proposed development of the Golden Peaks.

#### .7 Future Land Use And Implications For The TCH

The Town of Golden Official Community Plan has designated land in the northeastern quadrant of the community located to the north of the Trans Canada Highway as rural residential and future residential. These designations will result in more development in the area to the north of the Trans Canada Highway. Residents in the area currently access the highway for trips into Golden on Golden - Donald Upper Road.

Land in the northeast quadrant has been designated for future residential and rural residential development. Land designated for residential use will accommodate densities of 15 dwelling units per gross developable hectare. With approximately 25 hectares of land designated for future residential use in the northeast quadrant and using existing numbers of persons per dwelling (2.7), this area could potentially accommodate 375 dwelling units and 1,013 people. An additional 140 units could be developed on land designated for rural residential use resulting in a further increase of some 402 residents. This potential increase in population in the northeast quadrant would have a significant impact on traffic on Golden - Donald Upper Road and could likely require another access point to the area. Traffic volumes from the northeast quadrant could pose concerns due to their need for access on the Trans Canada Highway to reach the core of Golden.

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A further development which will impact the Trans Canada Highway is the Golden Peaks development as a four season resort. In addition to increasing traffic volumes on the Trans Canada and Highway #95, the development will require road access through the Town of Golden. Various options are being reviewed including the extension of 9th Avenue.

Another initiative which is transportation related is the planning for pedestrian and cycle trail development in the Town. A trail system is being proposed which would link the commercial developments along the Trans Canada Highway to the downtown area.

Issues related to the Trans Canada Highway and Highway #95 remains.

There are broader concerns such as the upgrading of certain sections of the Trans Canada Highway such as the Kicking Horse Pass and sections of the Rogers Pass. More local issues also continue to persist while there are still those who oppose the elimination of direct access to the TCH, the issue appears to be quieting down and there are those in the community that believe that the TCH is now safer for travelers and commuters on the highway.

There are some concerns related to snow removal due to the medians.

Some concerns have also been expressed over the alignment of Highway #95 through the community particularly the S bend south of the bridge.

### **3.8 FIELD**

#### **.1 Introduction**

Field is an unincorporated community of some 270 residents located in Yoho National Park. The community is located immediately south of the Trans Canada Highway some 15 km west of the Alberta/BC border. The community has a picturesque setting located at the foot of Mt. Stephen at the confluence of Stephens Creek and the Kicking Horse River.

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## **.2 Economy and Employment**

Field presently serves as a service center for visitors to Yoho National Park and is an administrative centre for Parks Canada as well as an operations centre for CPR. Residents of the community are either employed by the hospitality industry in Lake Louise and the region as a whole, by Parks Canada, the CPR or have established small businesses which serve the tourism and hospitality industries.

Future initiatives which could impact the community include the development of the Burgess Shale Museum and the Burgess Shale Learning Centre by Burgess Shale Research Foundation. the Museum is proposed to be developed in conjunction with the existing Yoho National Park Information Center. The Learning Center is being considered for either the CPR bunkhouse sight of the existing school site. The continued growth of the eco-tourism market as well as tourism activity generally in the region will continue to sustain the local economy and increase the demand for housing and visitor services in the region.

## **.3 Population**

The population of Field has fluctuated over the past twenty years responding to changes in the level of economic activity in the community. Changes in the mining, forestry, railway and tourism industry have contributed to significant shifts in the population of the community. The present population is estimated to be 270.

## **.4 Existing Land Use and Development**

The townsite boundaries enclose an area of approximately 33 ha of which 28 ha has either been developed or disturbed. Single family residential uses predominate in the community with limited multiple family residential, commercial and institutional uses. Railway oriented uses consisting of old passenger and freight stations are located along the CPR mainline. Figure 2 depicts the location of, and extent of, existing land uses within the community. There are 110 housing units accommodating approximately 270 residents. Visitor accommodation consists of a lodge providing 14 rooms. Housing provided by the CPR provide an additional 55 rooms for train crews. There are six retail uses within the community consisting of some 700 m<sup>2</sup>. Institutional uses

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consist of the Yoho Park Visitor Centre, an elementary school providing K to Grade 4 and

Land uses adjoining the Trans Canada Highway are limited and consist of the Yoho National Park Visitor Centre and a retail use oriented to visitors. These uses are separated from the remainder of the townsite by the Kicking Horse River.

A community plan for the community of Field is nearing completion. The plan involved extensive consultation with the advisory community council and the public. A final draft has been prepared and will be forwarded to the Minister for approval in the near future. The plan sets out a comprehensive strategy for future development and community enhancement. Various policies, principles and recommendations are established addressing:

- land use and density
- character and scale of future development
- social and economic health
- design
- heritage conservation
- the provision of infrastructure and other services
- transportation
- environment protection

Given that Field is located within a National Park, an overriding consideration in the plan is protecting the park's ecological integrity. The protection of the environment and the wildlife of the park resulted in one of the key issues addressed in the plan - removal of a building and trailer at the west end of the Village to protect an important wildlife corridor.

The community plan addresses various trends which will impact Field in the future. These include:

- continued pressure for housing in Field given the restrictions in Lake Louise;
- restriction on growth in other Parks will focus attention on Field;
- increases in the number of visitors particularly day users;
- growing popularity of eco-tourism;
- potential for development of education and tourism facilities;

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- expansion of commercial operations outside of the community;
- desire of existing residents to spread the cost of servicing over a larger population base.

Anticipated development in the community include:

- increased residential development;
- new recreation facilities and improvements to the Community Centre;
- a new lodge west of the Kicking Horse River;
- a hostel;
- additional commercial retail outlets;
- the Learning Centre;
- the Burgess Shale Museum.

These new developments will depend on market forces, the availability of land and the capacities of infrastructure services.

The plan establishes limits to growth in Field which reflects the balance between future community development and the preservation of Yoho Park's ecological integrity. The following table identifies the future limits of development in Field.



Figure 3.8.1

Future Development

	Current Situation		Proposed Change		Future Total	
	Number of units	Number of residents	Number of units	Number of residents	Number of units	Number of residents
Housing	110	273	+46	+113	156	386-425
	Number of rooms	Visitors/night	Number of rooms	Visitors/night	Number of rooms	Visitors/night
Visitor Accommodation	30	75	+63	+180	93	255
	Number of rooms	Visitors/night	Number of rooms	Visitors/night	Number of rooms	Visitors/night
Institutional	55	55	+15	+30	70	85
	Number of outlets	Area m <sup>2</sup>	Number of outlets	Area m <sup>2</sup>	Number of outlets	Area m <sup>2</sup>
Retail	6	700	+10	+960	16	1660

.5 Community Services

*Sanitary Sewer and Water*

The community has access to a range of municipal services. Infrastructure services such as community sanitary sewer and community water systems are provided by Parks Canada.

*Storm Drainage*

A partial storm drainage system is also provided consisting of culverts and some storm mains.

*Transportation*

The community's road system is also maintained by Parks Canada.

*Recreation*

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and Highway*

Recreation services and facilities are limited in the community. The Field Recreation Advisory Association is very active in community affairs and provides a range of recreational programs in the community.

### *Education*

*Corridor  
Management  
Plan*

The community has an elementary school for K to Grade 4 children. Older students are bussed to schools in Golden.

*Community  
Profiles*

A townsite administrator coordinates the services provided by Parks Canada to the community including general administration as well as responding to community needs and issues such as animal control, etc.

### *Community Planning*

The community plan which is in the process of being adopted identifies a range of initiatives to resolve existing servicing issues and to respond to anticipated future needs.

Based on the proposed community plan and technical studies, the community's water and sewer systems are in need of immediate improvement. Pre-design studies have established that the sewer and water mains have deteriorated at a more rapid rate than for other communities. There is evidence that sewer mains are leaking. Problems have also been encountered with the community's water distribution system. Freezing, over pressurization, leaks and breaks due to unstable soils and frost are ongoing problems. The studies indicated there is a need for total or partial replacement.

The wastewater treatment plant was sized for a population of 400 when it was upgraded in 1984. Given that the treatment plant receives wastewater from other sources (e.g. RVs), the plant is at or near capacity and will need to be expanded in the near future. The cost of expanding the plant has been estimated at \$1M.

The plan also identifies a range of initiatives which would allow the plant to run more efficiently. These include water conservation measures, reduction in phosphate use, increasing the phosphate removal capability of the existing plant, repairing leaks, preventing infiltration into sewer mains, reconfiguring the headworks and providing additional training in the operation of the plant.

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and Highway*

The plan also sets out a range of improvements to the community's road system including improvements to the streetscape, such as increased landscaping, sidewalks, street lighting, etc.

*Corridor  
Management  
Plan*

The implementation of the community plan will also increase the role and responsibilities of the townsite administrator. A range of activities and procedures are recommended including development review, plan update and review, development control, disposition of new lots, permitting, licensing and a range of other activities.

*Community  
Profiles*

*Governance*

The community of Field is administered by Parks Canada which has a resident townsite administrator in Field. The Field Community Council is an elected body which provides advice to Parks Canada in the administration and governance of the townsite.

*Transportation*

The community has a well developed system of local roads which are linked to the TCH at two locations - one at the west end of the townsite and one at the Yoho National Park Visitors Information Centre. All roads are two way except Kicking Horse and Stephen Avenue. While there are generally no major traffic issues there are a number of issues. As most people enter or leave Field at the major entrance (Visitor Information Centre), there is considerable traffic on the area of the school and residential areas.

The traffic impacts associated with increased development in the future is not addressed in detail in the plan. The development of the Burgess Shale Learning Centre and expansion to the existing Visitor Information Center on the TCH to accommodate the museum will have some impacts on the local road system and may require some improvements to the TCH to facilitate safe access to and from the community.

The plan provides that future development should be closer to the TCH than present development to facilitate a possible twinning of the TCH.

## .6 Relationship Of The Community To The TCH

The TCH presently plays a significant role in the life of the community and the highway's importance will grow in the future. The TCH is used by those commuting to work in Lake Louise or elsewhere in the region. Most shopping is carried out in Golden and school aged children Grades 5 to 12 are bussed to Golden. Maintenance and upgrading of the TCH is a concern to residents of Field. In particular, safety issues associated with the segment of the TCH through the Kicking Horse Pass were cited.

In terms of the TCH adjoining the townsite, the plan sets out a number of recommendations. These are as follows:

- Twinning between Golden and the west entrance to the Park should take place prior to any action in Field.
- Wildlife movement should not be impacted by highway improvements or design.
- Alternatives to twinning such as tunneling should be investigated.
- The potential negative economic impact of expanding the TCH (due to more difficult access to the community) should be addressed. The future design of the TCH should encourage travelers to use the services in the community.
- The impact on the community related to noise, views, etc. should be addressed.

## 4.0 FIRST NATIONS

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The communities of four First Nations are located in the Trans Canada Highway Corridor between the Afton Interchange and the Alberta border. An overview of the communities is presented in this section.

### 4.1 Little Shuswap Indian Band

The Little Shuswap Indian Band has five reserves with the main reserve Quaaout No. 1 located on the north side of the Thompson River at the east end of Little Shuswap Lake. The location of the band's reserves are shown on Map 1. The Band has an on-reserve population of approximately 113 with 121 of its band members living off reserve.

#### .1 Reserves

##### Quaaout Reserve #1

Of the Band's reserves, Quaaout #1 reserve is by far the largest and also the most intensively developed. The reserve is 1720.8 hectares in area and consists of waterfront, upland areas and areas of gentle topography where much of the development has occurred. Most band member housing is located east of the main access road with only a small subdivision located west of the road.

In addition to band housing, the reserve also contains a range of community facilities as well as commercial uses.

Community facilities include:

- Community Hall
- Administration Building
- Pow Wow Grounds
- Fire Hall
- Maintenance Buildings
- Play field
- Church

Commercial and industrial development is extensive and includes:

- Quaaout Lodge (72 rooms) including conference facility
- 170 lakefront lots with cottages (leased)
- Light industrial park including a sawmill and related uses
- 24 unit waterfront town homes (leased)
- 7-plex for lodge staff
- Bannock booth

In addition to residential, recreational, commercial and community uses, the reserve is also used for agriculture, logging and silviculture.

### **Chum Creek Indian Reserve #2**

The Chum Creek Reserve is located east of the Quaaout Reserve #1 and has an area of 223.4 hectares. The reserve contains only eight residences occupied by band members. The Trans Canada Highway, CP Rail line and BC Hydro lines bisect the reserve.

### **Meadow Creek Indian Reserve #3**

The Meadow Creek Reserve has an area of 22.7 hectares located in the Turtle Valley. There is no development on this reserve.

### **Scotch Creek Indian Reserve #4**

The Scotch Creek Reserve is located on the north shore of the main arm of Shuswap Lake. It has an area of 842.2 hectares and contains 66 leased cottage lots.

### **Tappen (North Bay) Indian Reserve #5**

The Tappen Reserve has an area of 309.2 hectares. The reserve contains twelve residences for band members, a small community hall and a fairly large mill operation on leased land.

## **.2 Population**

Overall, the population residing on the Bands' reserves has been stable over the past five year period. Figure 4.1.1 shows that the total on-reserve population basically remained the same although there were

significant changes on individual reserves. For example, the Chum Creek #2 Reserve's population dropped by 30% between 1991 and 1996 while the population on the North Bay #5 Reserve grew by almost 35% during this period.

Figure 4.1.1

Population Growth On Little Shuswap Bands' Reserves

Little Shuswap	1991	1996	% Change	# of Dwellings
Quaaout #1	212	209	-1.4%	97
Chum Creek #2	103	72	-30.1%	31
Scotch Creek #4	26	30	15.4%	13
North Bay #5	78	105	34.6%	36
Total	419	416		177

.3 Future Development

The Little Shuswap Indian Band has placed a priority on economic development initiatives using the band's strategically located lands.

Consistent with its long term economic development objectives, the Band is considering working toward the implementation of various development proposals. These include:

- The development of a 27 hole golf course on the Quaaout Reserve including related housing development.
- Expansion of the Quaaout Lodge by the addition of conference facilities as well as chalet development.
- Development of a commercial node in the vicinity of the Bannock Hut.

The Band is also preparing a 14 unit townhouse development for band members and a 16 to 18 unit development in the longer term. The development of wood processing industry is proposed on the Quaaout Reserve along the Anglemont Highway. Proposed community facilities include a museum and heritage building. In addition to the development of band lands, various locatees are also proposing development on reserve lands. Higher density residential development and a possible

casino are contemplated for locatee lands on the Chum Creek side of the Quaaout Reserve.

## 4.2 Adams Lake Indian Band

The Adams Lake Indian Band has an estimated on-reserve population of approximately 360. Most of the band members reside on Sahhalkum Indian Reserve #4 located on the north side of the South Thompson River across from Chase.

### .1 Reserves

The Adams Lake Band has seven reserves which are shown on Map 2. The reserves include small reserves which contain little or no development to larger reserves located in urban areas.

#### Hustalen Indian Reserve #1

The Hustalen Reserve is approximately 930 hectares in area. The reserve is largely undeveloped forest and range land. Approximately 80 residential lots were made available for lease on Little Shuswap Lake at Indian Point. A number of these have been developed for residential or recreational use. Indian Point resort is located at the end of the point and consists of cabins, a marina and beach.

#### Squaum Indian Reserve #2

The Squaum Reserve is only 35 hectares in area and contains 33 lots which have been leased for recreational cottage use. No band members live on this reserve.

#### Toops Indian Reserve #3

The Toops Reserve is the Band's smallest reserve and has an area of only 10 hectares. Most of the reserve is forested and undeveloped. The reserve contains one residence occupied by a non member. A commercial equipment shop is also located near the lake.

In addition to Band member housing, the reserve contains about 15 waterfront lots which are leased to non members.



#### **Sahhalkum Indian Reserve #4**

The Sahhalkum Reserve is the Band's largest reserve having an area of 1400 hectares. The reserve is located at the southeast end of Little Shuswap Lake across the Thompson River from the Village of Chase. The reserve accommodates much of the Band's housing. Approximately 50 serviced lots are located on the reserve, of which 35 are occupied by members. About 15 lots on Little Shuswap Lake are leased to non members. A further 10 houses are located away from the main village on the reserve.

Indian Reserve #4 also contains many of the band's facilities including the band office, band hall, daycare center, nursery school, church, fitness center, ball fields, park and cemetery.

The remainder of the reserve is in agricultural use consisting primarily of forage crop production.

#### **Stequumwhulpa Indian Reserve #5**

The Stequumwhulpa Reserve is approximately 115 hectares in area and consists primarily of steep forested land. Rail, power lines and the Trans Canada Highway pass through the reserve. There are eight occupied leased residential lots on the south shore of Little Shuswap Lake.

#### **Switsemalph Indian Reserve #6**

The Switsemalph Indian Reserve is located on Shuswap Lake at the western end of the District of Salmon Arm. The reserve has an area of 325 hectares and includes Sandy Point and Pierre's Point. The reserve contains a variety of uses. There are approximately 22 housing units for band members and 30 lots available for lease along the Shuswap Lake waterfront. Many of the recreational leases are short term as this area is being considered for major development by the Band.

A number of tourist oriented commercial developments have been developed on this reserve including Pierre's Point campground and Sandy Point resort. A fruit stand, parks/restaurant and an auction house have been developed at the junction of Sandy Point Road and the Trans Canada Highway.

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The Band has developed a number of community facilities on the reserve consisting of a band hall and playing fields. A large part of the reserve is forested, particularly along the Trans Canada Highway. Some forested areas have been cleared and are being used for agriculture.

#### **Switsemalph Indian Reserve #7**

This reserve has an area of 135 hectares and is located at the western entrance to the commercial core area of Salmon Arm. In view of its location along the Trans Canada Highway and its proximity to commercial uses within the District of Salmon Arm, the lands within this reserve have been developed to a variety of commercial uses. These include a waterslide, bus depot, fast food and other types of restaurants, a mini mall and other commercial uses. The reserve also contains the District's sewage lagoons.

Little agricultural development has occurred on this reserve due to flooding.

#### **.2 Existing Population**

The Band presently has an on-reserve population of 357. Population growth over the past five years has been around 3% per annum which is higher than the 1% per annum projected in the Band's Physical Development Plan prepared in 1990. The higher than expected growth can in part be attributed to the fact that the Band is building more housing.

Figure 4.2.1 provides an overview of total on-reserve population including non band members. Overall population growth on the Bands' reserves has increased about 7.5% over the five year period 1991 to 1996. Significant growth occurred on the Sahhalkum reserve over this period.

Figure 4.2.1

Population Growth On Reserves Of Adams Lake Band

Adams Lake	1991	1996	% Change	# of Dwellings
Hustalen	61	53	-13.1%	31
Switsemalph	139	138	-0.7%	43
Sahhaltkum #4	206	251	21.8%	80
Squaum #2	18	14	-22.2%	8
Total	424	456		162

.3 Future Development

The Band believes that the further development of Indian Reserve #6 to a variety of commercial and industrial uses has significant potential. The resolution of servicing issues between the Band and the District of Salmon Arm has provided an opportunity for closer collaboration in the development of lands on Indian Reserve #6. The Band hopes to prepare a master plan for the development of Indian Reserve #6 and continue discussions with the District of Salmon Arm for the provision of sanitary sewer and water. An option which the Band is considering is the development of its own water system.

4.3 Neskonlith First Nation

The Neskonlith First Nation occupies three reserves. Most band members live on Indian Reserve #1 located next to the South Thompson River west of Chase or on Indian Reserve #3 which adjoins the District of Salmon Arm.

.1 Reserves

Neskonlith Indian Reserve #1

This reserve has an area of approximately 1300 hectares and is located along both sides of the Thompson River west of Chase. The Trans Canada Highway runs through the reserve. Much of the reserve is used for agricultural purposes.

Approximately 28 housing units are located on the reserve. Some 23 lease lots have been created along the river but are presently not being used. The Band church, bingo hall, Band office and school are located on the south side of the Trans Canada Highway.

### **Neskonlith Indian Reserve #2**

Indian Reserve #2 is approximately 975 hectares and is also located west of Chase. There are approximately 19 homes located on the reserve - seven in a subdivision, six or so scattered along the Trans Canada Highway and an additional seven in isolated locations. The reserve also has a community hall.

A service station operated by a CP land holder is located on the Trans Canada Highway. A bannock booth has also been developed on this site. There are also some agricultural uses on the reserve.

### **Neskonlith Indian Reserve #3**

This reserve has an area of approximately 535 hectares and adjoins the District of Salmon Arm. The main area of housing on the reserve is centered on the intersection of the Trans Canada Highway and First Avenue. There are approximately fifteen homes on the reserve.

A log home building company has been developed on the reserve adjacent to the highway.

The Band office, a church and a cemetery are also located on the reserve.

## **.2 Population**

The on-reserve population grew from 178 in 1991 to 209 in 1996 which much of the growth occurring on Neskonlith Reserve #2 located west of Chase (see Figure 4.3.1).

Figure 4.3.1

Population Growth On Neskonlith First Nations' Reserves

	1991	1996	% Change	# of Dwellings
Neskonlith #1	59	57	-3.4%	14
Neskonlith #2	48	86	79.2%	28
Neskonlith #3	71	66	-7.0%	24
Total	178	209		66

.3 Future Development

This section could not be completed as the consulting team was not able to meet with the representatives of the Neskonlith First Nation.

4.4 Kamloops Indian Band

The Kamloops Indian Band is the largest band in the Trans Canada corridor although its on-reserve population is consolidated on one reserve (Reserve #1) surrounded by the City of Kamloops. It presently has an on-reserve population of over 1,000 and has significant potential for future growth and development.

.1 Reserves

Kamloops Indian Reserve #1

The Kamloops Indian Reserve #1 contains a wide variety of land uses including residential, commercial, industrial and institutional uses. Various land uses have been developed at the north end of the reserve (north of Halston Connector Road). These include various commercial and light industrial uses as well as redi-mix and asphalt plants. Northwest of the Halston Connector - Yellowhead Highway intersection, the Band is contemplating the Shuswap Landing development which involves a large multi use development. The Shuswap Landing site is presently occupied by band member housing. The CN Station is located immediately adjacent to the reserve.

Immediately south of the Halston Connector Road, various commercial and light industrial uses occur along the Yellowhead Highway. Band member housing is also located along Salish Road, Chief Louis Way and West Shuswap Road.

The largest concentration of band member housing is located along the North Thompson River.

The Mt. Paul Industrial Park is located west of the Yellowhead Highway and east of the North Thompson River. The park has an area of 400 acres and contains approximately 170 businesses. The park is changing in character from a light industrial park to one which also contains more service commercial uses (e.g. building material supply, car lots).

The Chief Louie Center, which includes many of the band's cultural, educational and administration uses, is located east of the Yellowhead Highway on the South Thompson River. The Sun River Development, which proposed some 2000 units, is located northeast of the Chief Louie Center on the benchlands.

Band member housing is also located along East Shuswap Road.

## .2 Population

Based on census data, the on-reserve population of the Kamloops Indian Band grew by 28% during the period 1991 to 1996 (see Figure 4.4.1). A total of 426 dwellings were located on Reserve #1 in 1996. The Kamloops Indian Band expects that growth will continue on Reserve #1 in response to Bill C-31 and the increased economic and employment opportunities on the reserve.

Figure 4.4.1

### Population Growth On Kamloops Indian Band Reserves

	1991	1996	% Change	# of Dwellings
Reserve #1	799	1023	28%	426
Total	799	1023		426

The Band is proposing the development of a 200 lot subdivision by the year 2000 in order to accommodate projected population growth on the reserve.

### **.3 Future Development**

A number of major developments are proposed for Kamloops Indian Band Reserve #1.

#### **Mt. Paul Industrial Park**

Further development of the Mt. Paul Industrial Park is being contemplated by the Band. The industrial park which was established in 1968 now contains about 400 acres and accommodates approximately 170 businesses and tenants. The park is approximately 75% full with 100 acres which could still be developed. There is ongoing demand for space in the industrial park and the Band is currently considering 5 lease applications. A designation amendment is presently being considered by the Band which proposes an extension of the term of leases from 50 to 99 years. This measure is being taken by the Band to remain competitive in attracting large scale quality developments to the park. The Band has continued to upgrade infrastructure services to the park. Improvements were undertaken to the road system north and west of the park including Kootenay Road, Shuswap Road, Sallish Road, Ricardo Road and Crete Road.

#### **Shuswap Landing**

Wilder Ventures Limited is proposing the development of a large multi use development on land located between Halston Connector Road, the Yellowhead Highway, Junction Road and the CN tracks. A total of 175 acres is proposed for development which will ultimately consist of 1.7M square feet of floor space. Proposed uses include housing, village shopping complex, discount shopping, a shopping center, entertainment facilities, recreation facilities, fast food complexes, gas stations and service type businesses. A depot for the Rocky Mountain Rail Tour train will be incorporated in the development. The value of the development is estimated to be \$200M and will provide 1900 onsite jobs.

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The transportation volumes on roads providing access to the proposed development are expected to double over existing volumes. A traffic impact analysis has been carried out to identify ways in which to mitigate the traffic impacts associated with the development.

**Mt. Paul Tram**

Sun Rivers Development Company is proposing the development of a visitor oriented development on Mt. Paul. The development would feature a tram line to the top of Mt. Paul and would include a nature park, trails, lookout, restaurant and associated retail uses. The base facility would consist of parking lots and main reception area located on between 40 and 60 acres. The proposed development at the top of Mt. Paul would consist of a restaurant, gift shops and interpretive facilities located on approximately 90 acres.

**Sun Rivers Development**

The Sun Rivers Development Company is proposing a large scale development on the benchlands above the Chief Louie Center. The development would consist of 2000 residential uses, a par 72 championship golf course, a village area as well as neighborhood commercial uses. Various types of residential uses are proposed including single family units, condos, townhouses and adult oriented housing. The development will be developed over a twenty year period and will have a value of \$400M (1995 dollars) when it is completed.

Access to the development would be via the Yellowhead Highway.

**Chief Louie Center**

The Chief Louie Center presently consists of various education, government and cultural uses. The continued development of the Chief Louie Center as a government and business center for the Kamloops Indian Band is proposed. Proposed uses include further development of education buildings, band administration facilities, cultural buildings and commercial and retain businesses.



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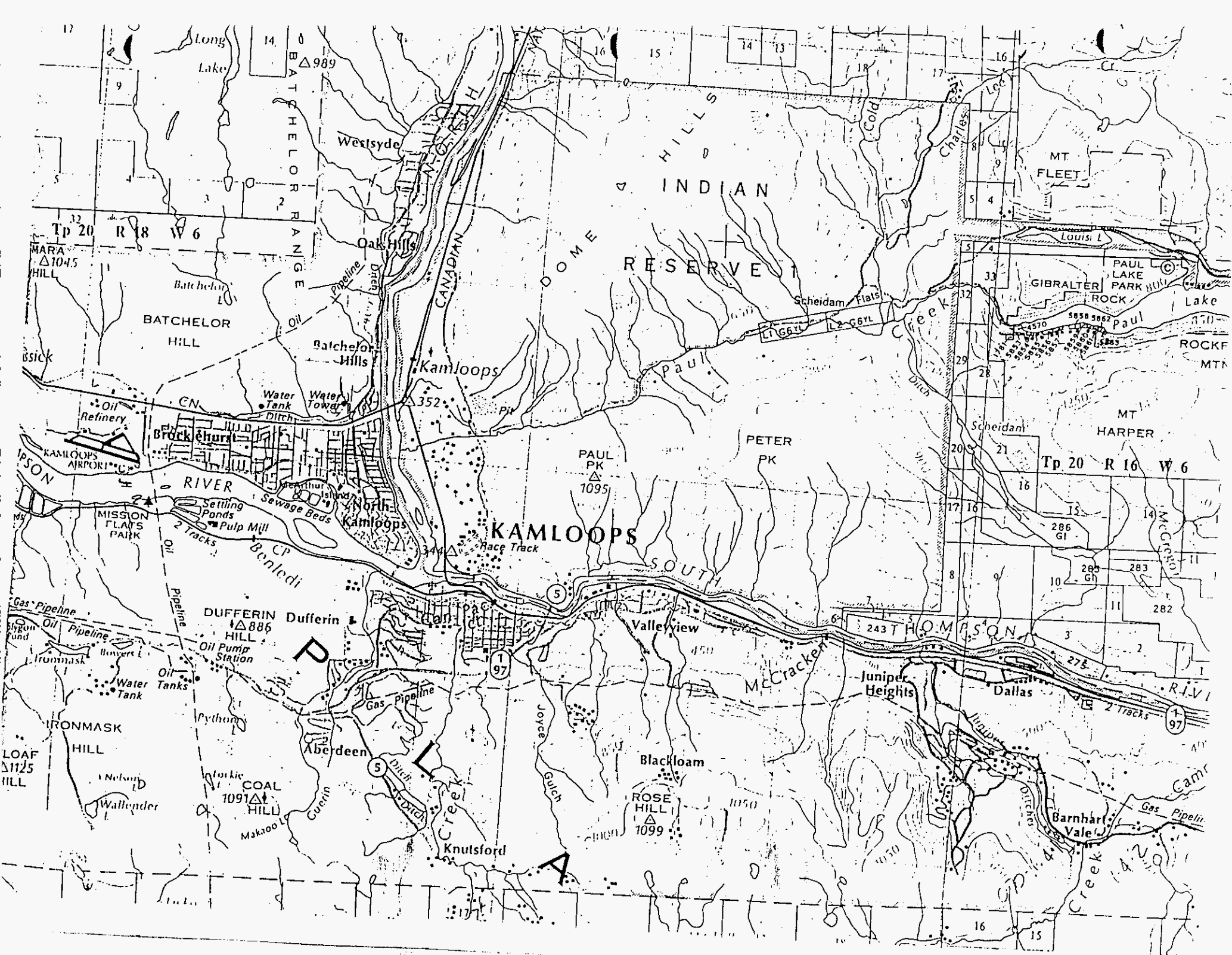
### **Servicing and Transportation**

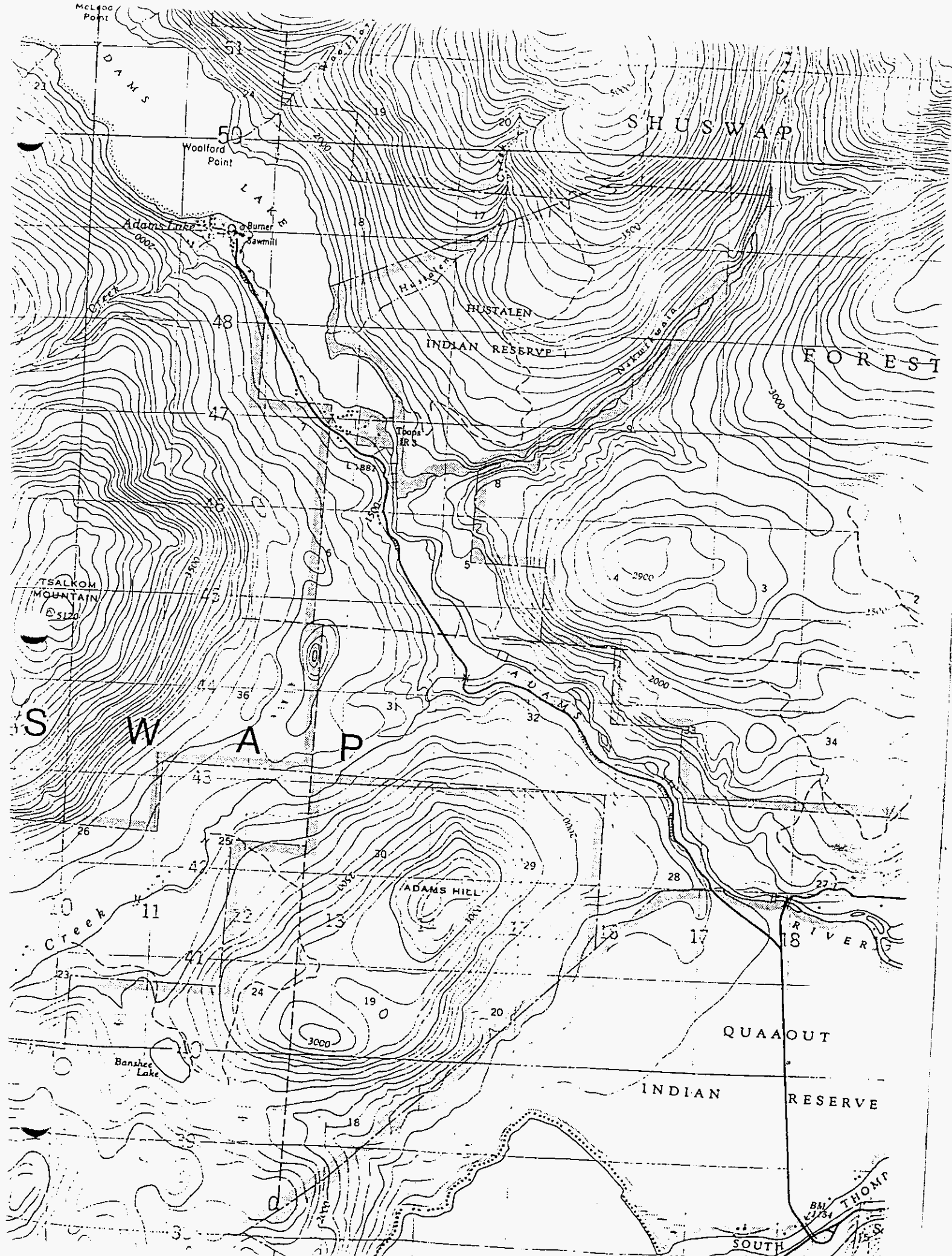
The Band is in the process of the upgrading of its water system through the development of a new intake and the construction of a reservoir. The development of a treatment plant may also be required. The total plan will cost approximately \$12M.

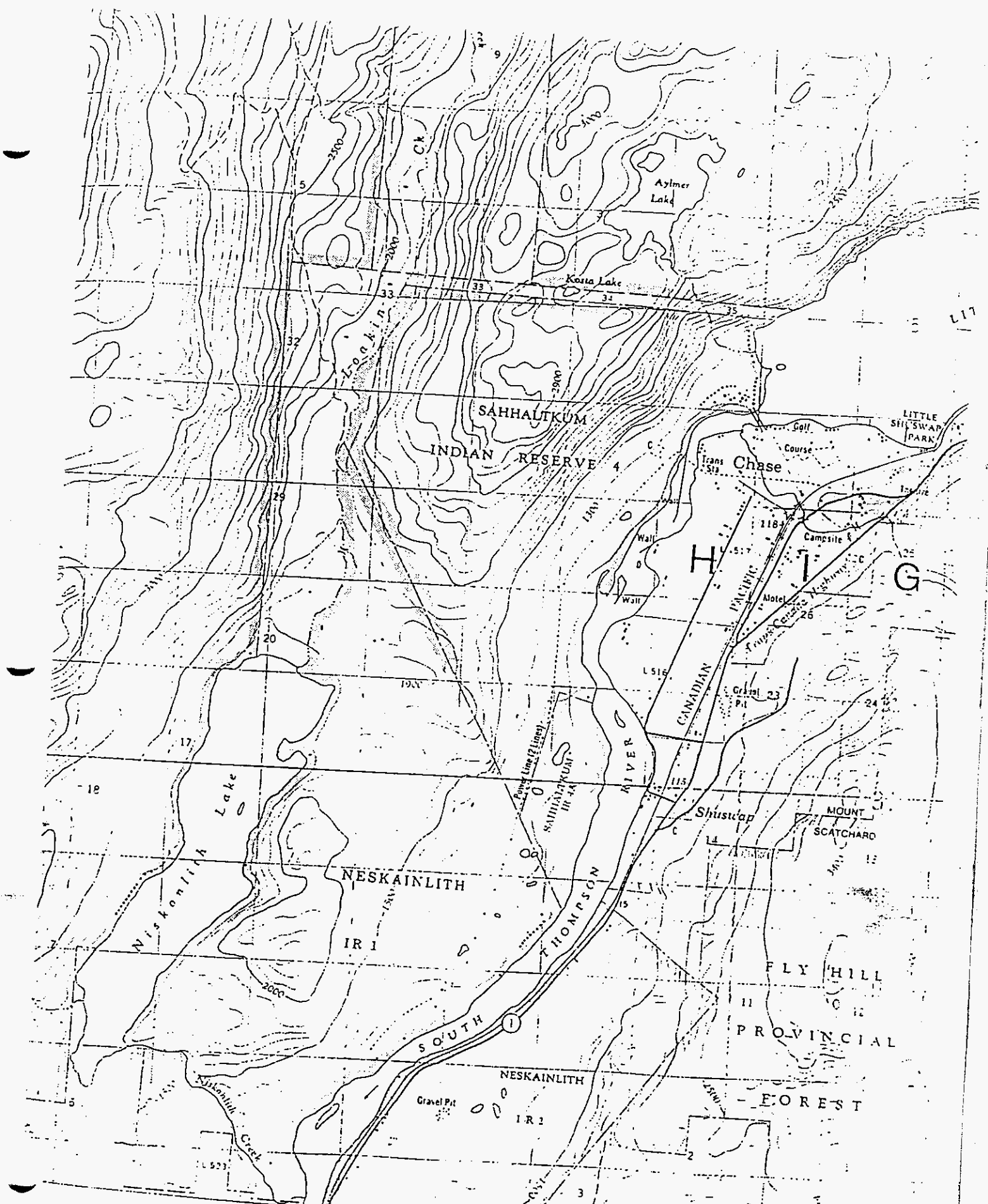
The Band is also looking into the expansion of the community sewer system on the reserve. At present, only the Chief Louie Center is serviced by sanitary sewer. This system is connected to the City of Kamloops sanitary sewer system. The provision of a community sewer system will be required in order to accommodate the projected development on the reserve (e.g. Shuswap Landing).

The road system on the reserve will also require upgrading. Traffic impact studies carried out in support of the Sun Rivers and Shuswap Landing projects identify significant impacts on the roads and highways which provide access to these developments. In particular, the Valleyview interchange will be impacted in a major way.

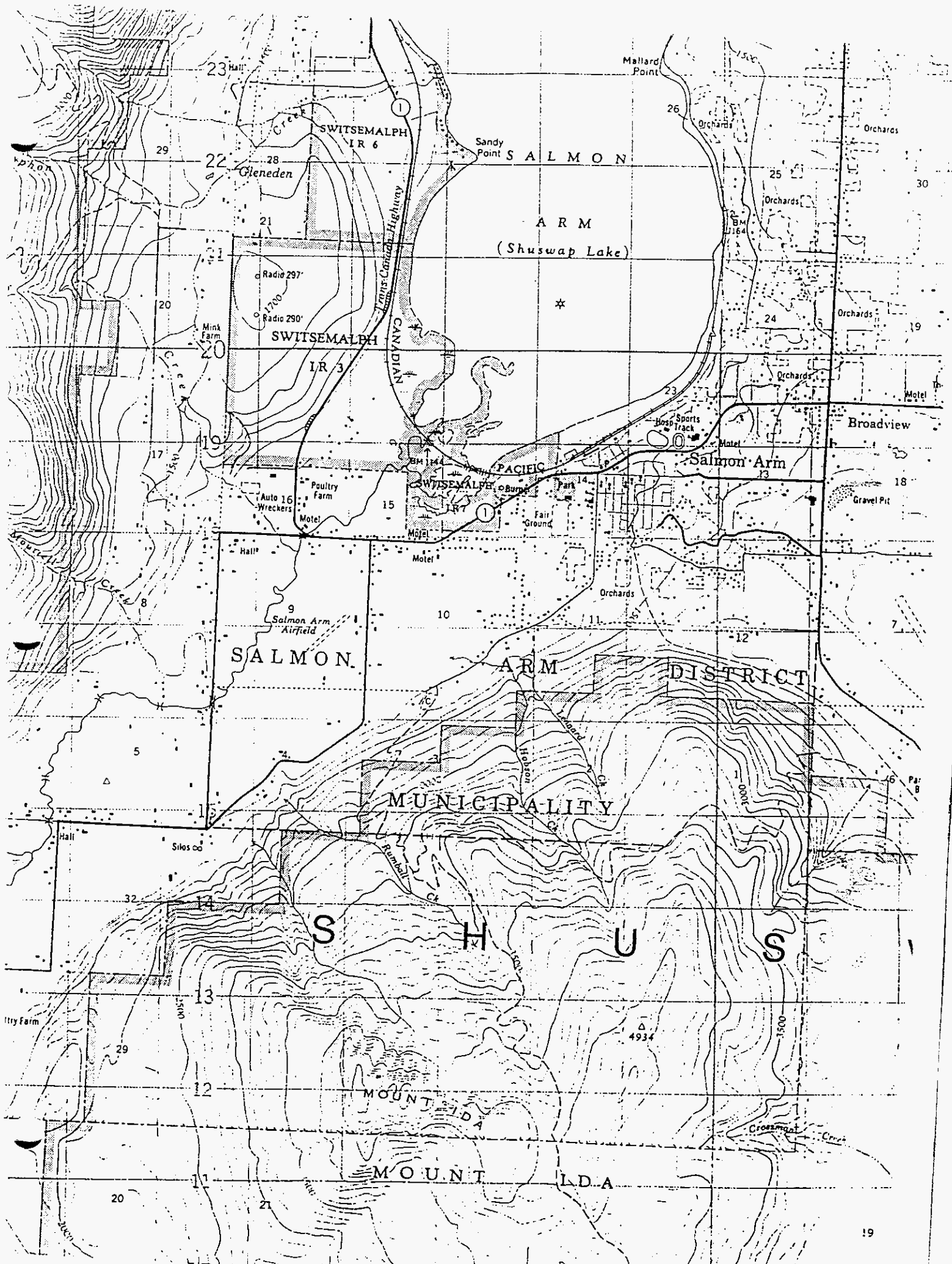
The City of Kamloops' transportation plan calls for the extension of 6th Street to connect to Kootenay Road in the future.

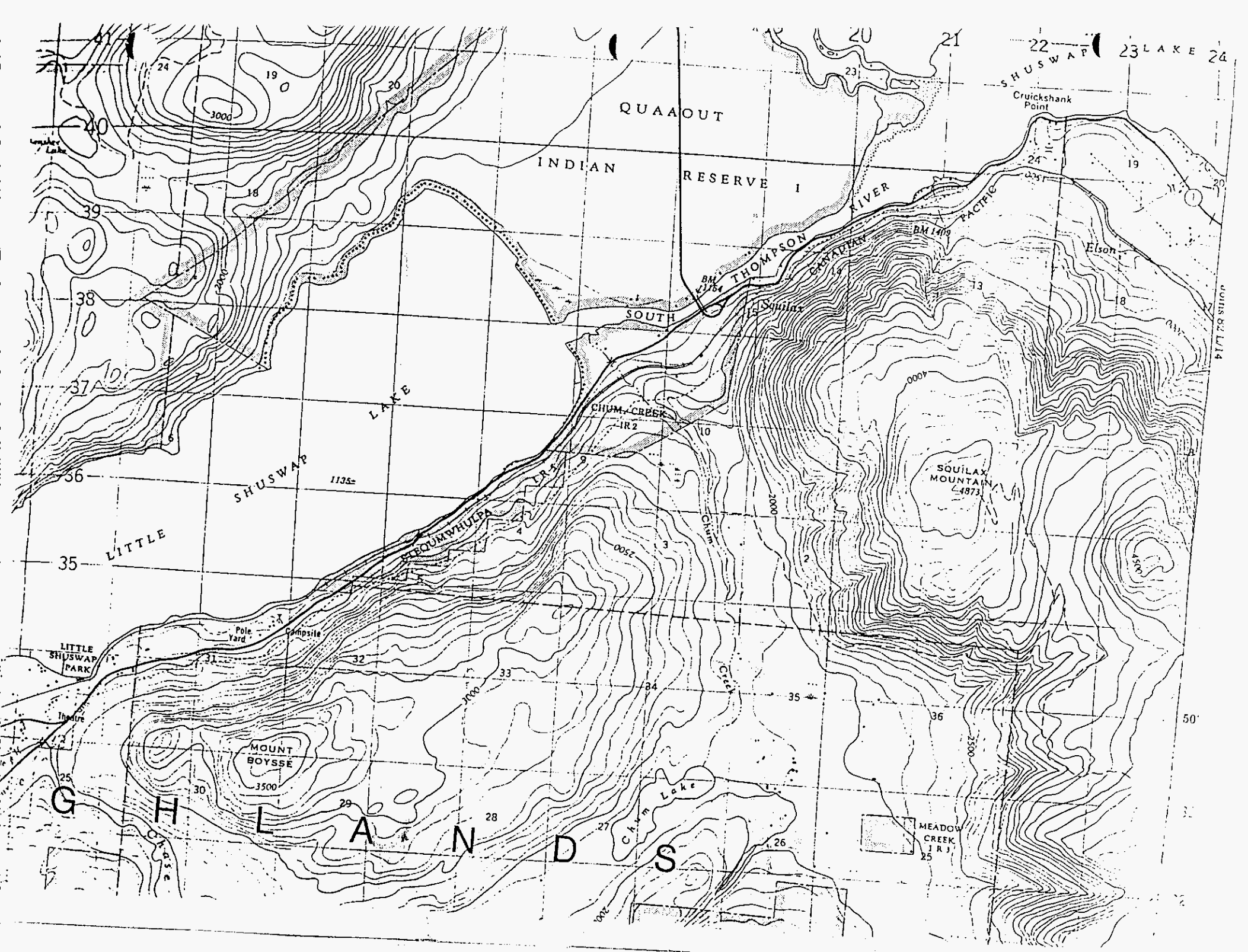


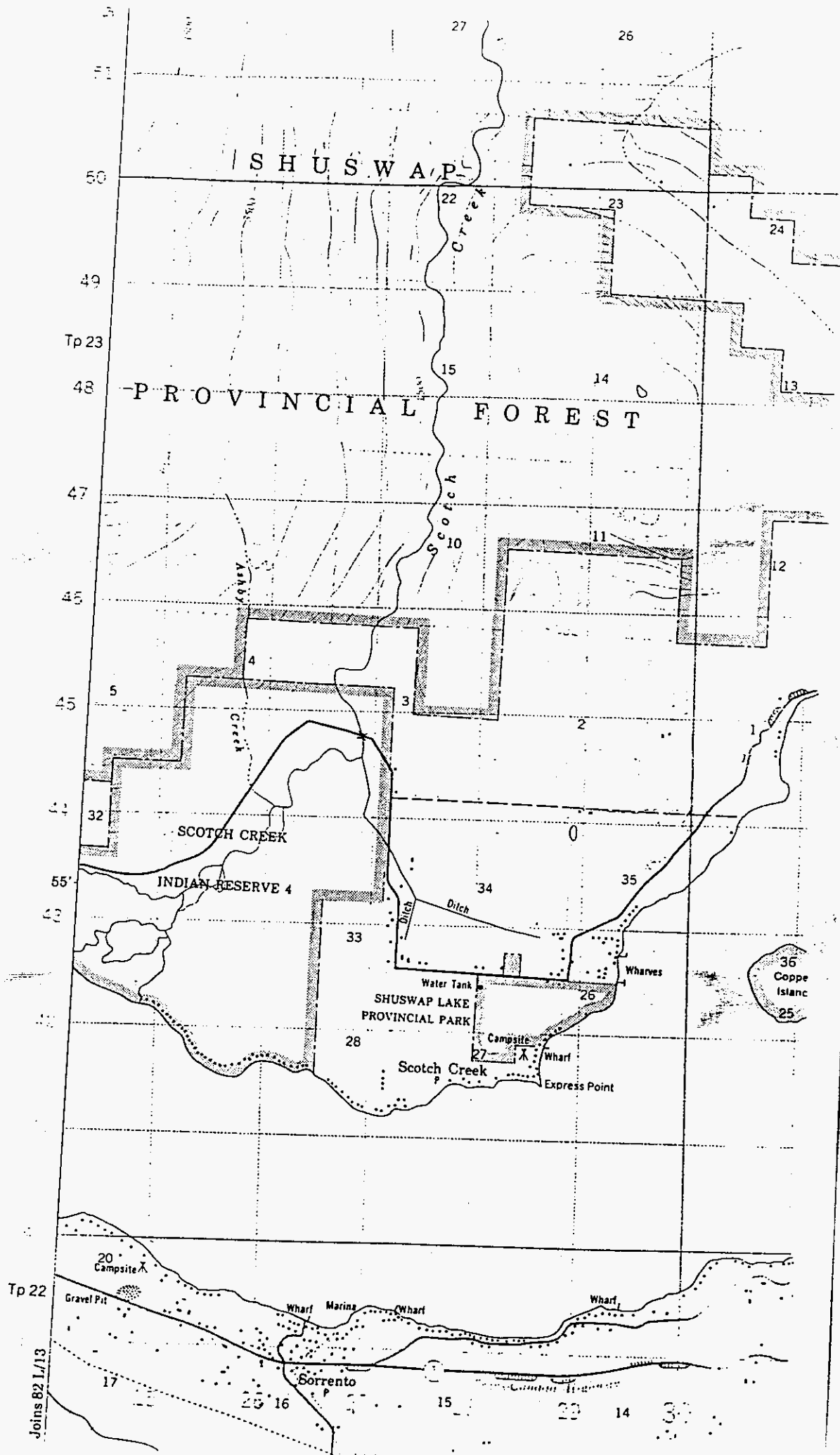




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**Ministry of Transportation  
and Highways**

**TransCanada Highway Corridor Management Plan  
(Kamloops to Alberta Border):**

**COMMUNITY IMPACT AND DEVELOPMENT STUDY-  
APPENDIX B - TRAFFIC FORECASTS**

**Final Report**

**URBAN**SYSTEMS

**May, 1998**

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MINISTRY OF  
TRANSPORTATION AND  
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**TransCanada  
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**TransCanada  
Highway Corridor  
Management Plan**

*Community Impact  
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Final Report*

# 1 Introduction

This stage of the TransCanada Highway (TCH) Corridor Management Plan (CMP) was separated into two distinct initiatives to address internal and external traffic forecasts. The Ministry of Transportation and Highways (MOTH) retained the services of AcTran Consultants to prepare forecasts of externally generated travel, and Urban Systems for internal traffic projections as part of the Community Impact and Development Study. This report documents the internal 25 year traffic forecasts which are combined with the work of AcTran Consultants to produce composite traffic projections.

## 1.1 Purpose

The primary goal of this report is to assess the role and function of the TCH based on historic, current and future traffic characteristics. This information will ultimately be used to evaluate projected conditions on the TransCanada Highway, to identify potential problems and to assess alternate strategies in order to manage internal and external traffic in subsequent stages of the CMP process. In order to achieve this goal, several objectives were established to guide the preparation of the report as follows:

- to summarize historic and current traffic patterns along the TCH;
- to identify internally and externally generated travel;
- to develop and compare forecasts of future internally generated traffic to the year 2021 at 5 year intervals based on a continuation of historical trends as well as projected demographic changes throughout the corridor; and
- to prepare composite internal and external traffic forecasts for the TCH.

## 1.2 Approach and Methodology

Traffic forecasts along the TCH were prepared in coordination with the overall Community Impact and Development Study, as well as other ongoing work on the CMP. This document is separated into five sections as follows:

**TransCanada  
Highway Corridor  
Management Plan**

Community Impact  
and Development  
Study –  
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- **1.0 Introduction** describes the purpose and approach toward preparing the traffic forecasts for the TCH.
- **2.0 Network Description** summarizes the key features of the TCH corridor and interconnecting provincial and municipal roadways based on background information and field visits.
- **3.0 Traffic Characteristics** provides an overview of the background traffic conditions along the TCH, and identifies internal and external traffic components along each corridor segment.
- **4.0 Traffic Forecasts** provides 25 year projections of internally generated traffic along each segment of the TCH. These forecasts are combined with the estimates of externally generated traffic provided by AcTran Consultants. The internal traffic forecasts are estimated using two methods as follows
  - **Trend Growth Scenario** — interpolations of historical traffic patterns along the TCH to the year 2021; and
  - **Population-based Growth Scenarios (3)** – traffic projections based on population forecasts in communities along the TCH for high, low and most probable growth rates.
- **5.0 Summary** provides an overview of the role and function of the TCH based on historic, existing and forecast traffic patterns.

## 2 Network Description

This section of the document provides a broad overview of the primary features of the TCH, as well as the major highway and municipal road connections. During this stage of the CMP process, these network features will be used to evaluate the role and function of the highway. In subsequent stages of the CMP, this information will be ultimately used to evaluate future conditions along the TCH, and to identify potential strategies to manage travel demands on the corridor.

### 2.1 Trans Canada Highway Features

Extensive work has already been conducted to identify the primary features of the TCH between Kamloops and the Alberta Border. This section of the report provides a brief overview of these principal features which are characterized for various sections of the corridor and key intersections.

#### 2.1.1 Corridor Characteristics

At a strategic planning level, the primary features of the TCH that are of greatest interest include operating speed, number of lanes, classification, surrounding land uses and terrain. Classification essentially refers to the design features and function of the highway which may be described in terms of either:

- Freeways — providing an uninterrupted flow of travel through grade-separated interchange access only.
- Expressways — facilities designed with a freeway standard and widely spaced at-grade intersections.
- Rural Arterials — facilities carrying inter-municipal traffic which is not built to a freeway standard.
- Arterial Highways — a provincial facility in an urban area connecting major parts of the municipality.

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The TCH is also characterized in terms of terrain. Consistent with the categories used in the 1994 Highway Capacity Manual, Special Report 209, three different classifications of terrain have been used for the TCH, which are described as follows:

- Level terrain — to permit heavy vehicles to maintain the same operating speed as other cars, a level terrain is generally flat, with short segments of no more than 1 to 2 percent.
- Rolling terrain — any combination of grades and horizontal or vertical alignment of the highway causing heavy vehicles to substantially reduce speeds, but not to a crawl.
- Mountainous terrain — any combination of grades or alignments causing heavy vehicles to operate at a crawl for extended lengths of the highway.

The primary features of the TCH corridor based on the segments identified in a background document entitled "*Analysis Framework TCH Kamloops to Alberta Border*" are summarized in Table 2.1. It should be noted that the segments identified in the background document will undergo further review within this stage of the CMP.

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**Table 2.1: TCH Corridor Segments**

Segment	Start of Segment	Segment Length	Lanes	Service Class	Land use	Terrain
10	Afton Interchange [Coquihalla Hwy 5]	12.07	4/6	UF	Urban	L/M
20	Yellowhead F/O #2379	4.97	4	UA	Urban	L
30	Tanager Road [E. Kamloops]	20.93	2/4	UE	Suburban	L
40	Jct Hwy 97 [Monte Creek]	27.42	2	RA	Rural	L
50	Chase West Exit	11.18	2	RA	Rural	M
60	Squilax Bridge # 0481	6.95	2	RA	Rural	L
70	Cobeaux Road # 102 [Sorrento]	3.46	2	UA	Urban	L
80	Blind Bay Road # 67	29.03	2	RA	Rural	L
90	Salmon River Bridge # 1187	7.68	2/4	UA	Urban	L/R
100	Jct Hwy 97b [E. Salmon Arm]	5.86	2	RA	Suburban	L
110	Canoe Beach Drive East Entrance	19.79	2	RA	Rural	M
120	R. W. Bruhn Bridge # 0897	1.54	2	RA	Suburban	L
130	Jct Hwy 97a [Sicamous]	3.25	2	RA	Rural	L
140	Kerr Road # 636 East Entrance	8.54	2	RA	Rural	L
150	Gravel Pit [Start 4 Lane Section]	8.76	4	RE	Rural	L
160	Malakwa Dump Road # 642	8.42	2	RA	Rural	L
170	Perry River Bridge # 0824	18.7	2	RA	Rural	R
180	Three Valley O/H # 0357 West End	7.33	2	RA	Rural	R
190	East of Wood O/H	6	2	RA	Rural	R
200	East of Clanwilliam O/H	6.52	2	RA	Rural	R
210	Big Eddy Road	2.63	2	RA	Rural	R
220	Jct Hwy 23 South [Revelstoke]	1.27	2	UA	Urban	R
230	Jct Hwy 23 North [Revelstoke]	4.69	2	RA	Urban	R
240	Revelstoke East City Boundary	12.92	2	RA	Rural	R
250	Mt. Revelstoke Nat. Park West Bdry	12.65	2	RA	Rural	M
260	Mt. Revelstoke Nat. Park East Bdry	17.8	2	RA	Rural	M
270	Glacier Nat. Park West Boundary	43.81	2	RA	Rural	M
280	Glacier Nat. Park East Boundary	29.66	2	RA	Rural	M
290	Columbia River Bridge # 1605 W. End	24.19	2	RA	Rural	L
300	Anderson Road [West of Golden]	2.21	4	UA	Urban	L
310	Jct Hwy 95 [Golden]	2.4	2	RA	Rural	M
320	Golden View Road East Access	23.53	2	RA	Rural	M
330	Yoho Nat. Park West Boundary	45.3	2	RA	Rural	M

## 2.1.2 Intersection Locations

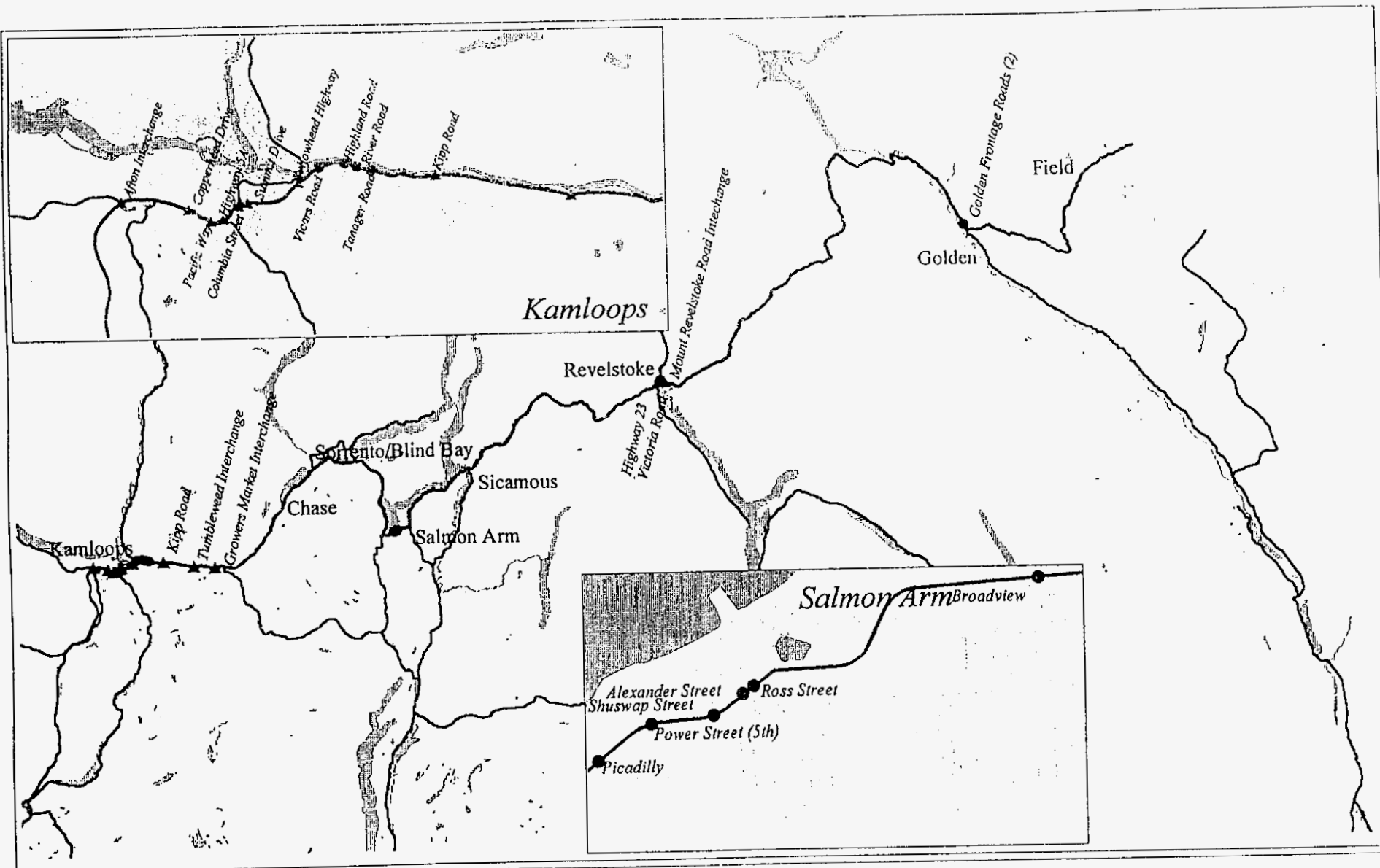
Between Kamloops and the Alberta border, there are only 14 traffic signals and 14 full or partial grade separated connections to the TCH. The remaining connections to the highway are controlled through stop signs on the minor approaches. Figure 2.1 illustrates the location of traffic control signals and grade-separated interchanges along the highway.

## 2.2 Provincial Highway System

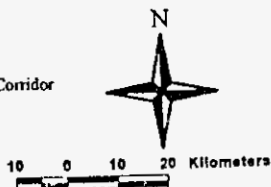
The section of the TCH examined within the CMP connects with several other provincial corridors as it crosses British Columbia. As illustrated in Figure 2.2, four of these facilities link the TCH to other communities throughout the province, which are described as follows:

- **Highway 5** — At the western edge of the study area, the southern leg of Highway 5 — commonly known as the Coquihalla Highway — extends from the TCH immediately west of Kamloops to its southern limit in Hope. Within the Kamloops area, Highway 5 jogs east along with the TCH before continuing north on the section of Highway 5 referred to as the Yellowhead Highway. The second leg of Highway 5, Highway 5A runs from the Aberdeen Interchange in Kamloops south toward Merritt before re-joining Highway 5.
- **Highway 97** — The TCH between Monte Creek and beyond the Afton Interchange to Cache Creek is also Highway 97. At Monte Creek, Highway 97 continues south serving travel toward the Okanagan area. The TCH intersects other segments of Highway 97 near Salmon Arm (Highway 97B) and again in Sicamous (Highway 97A). These corridors connect with other portions of Highway 97 just to the north of Vernon.
- **Highway 23** — The TCH intersects with Highway 23 at two locations in the Revelstoke area. The south leg of Highway which leads toward Nakusp connects to the TCH immediately west of the Columbia River. The highway then jogs east with the TCH to the other side of the river before continuing north again.





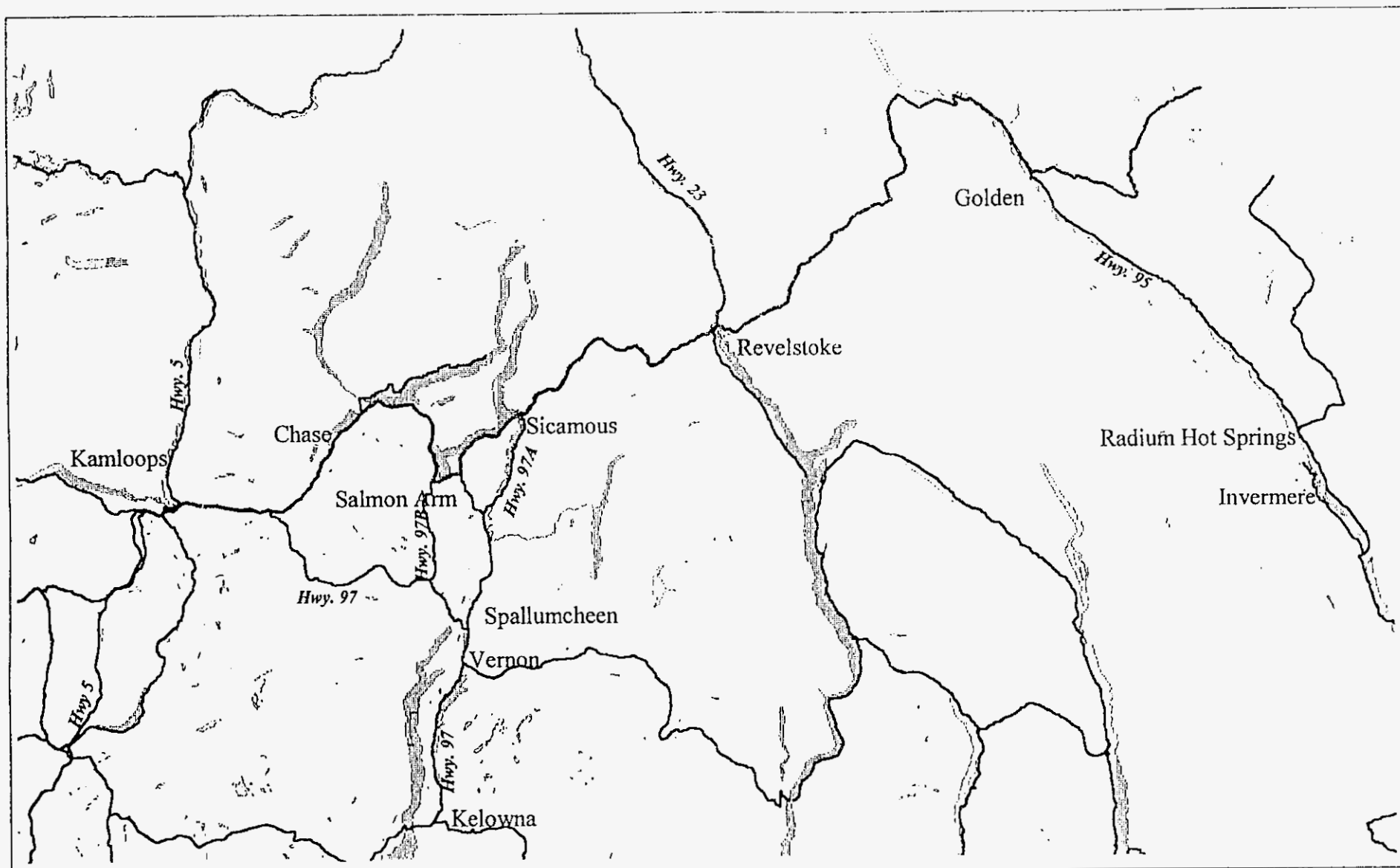
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- ▲ Grade Separation
  - Signalized
  - Trans-Canada Highway Corridor
  - Major Highways
  - Water Bodies
  - Incorporated Areas







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Figure 2.1  
Signalized Intersections and Interchanges



 Trans-Canada Highway Corridor  
 Major Highways

 Water Bodies  
 Incorporated Areas



10 0 10 20 Kilometers

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**Figure 2.2**  
**Connecting Corridors**

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- **Highway 95** — Highway 95 connects with the TCH in Golden. This corridor serves as a southern connection from the TCH to Radium and Kimberly.

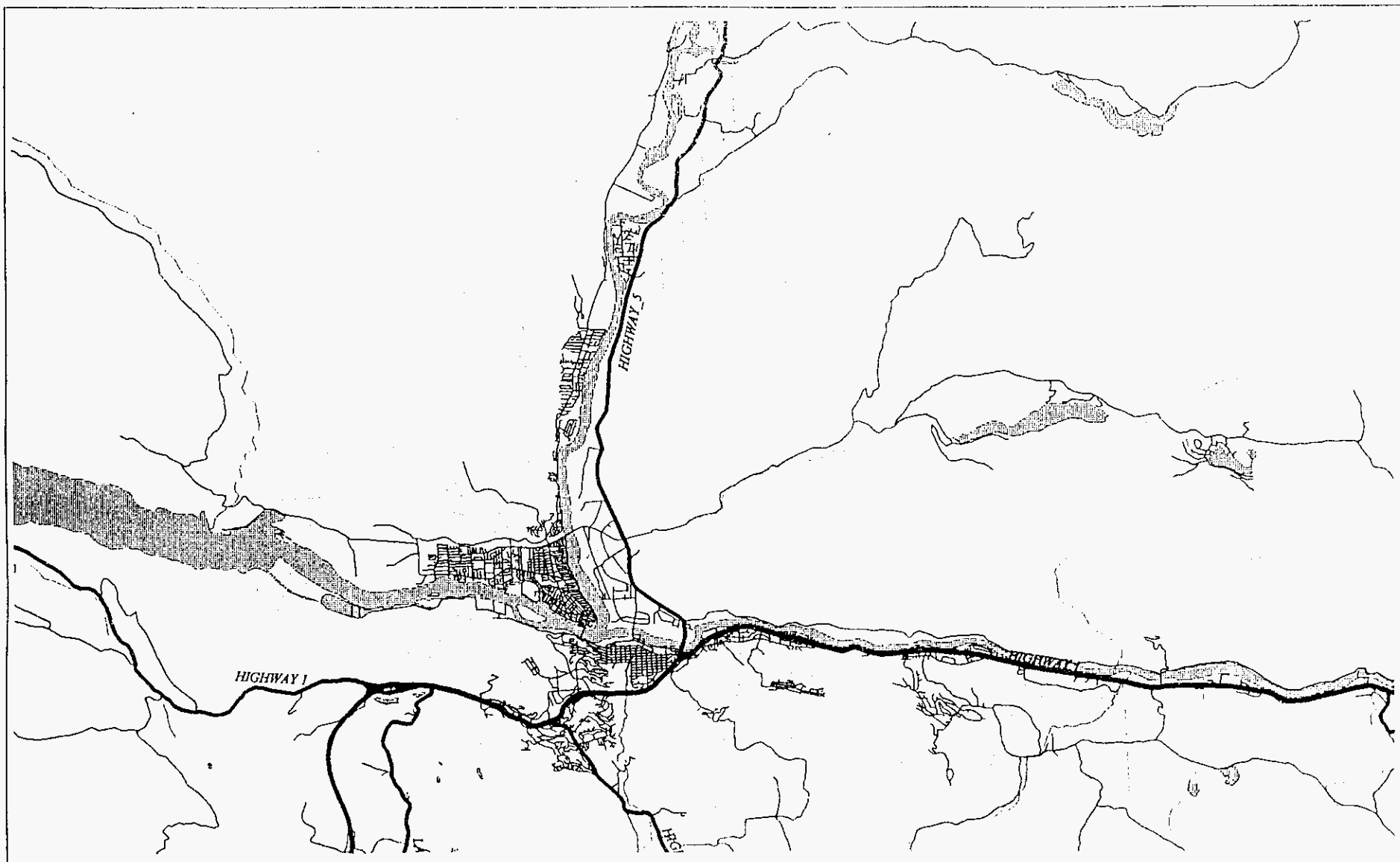
## 2.3 Urban Roadway System

Throughout the study area, the TCH passes through a number of communities. Their current and future relationships with the TCH will depend largely on the existing transportation systems that serve these communities as well as the forecast growth patterns and levels of development. Figures 2.3 through 2.9 illustrate the roadway networks for the major centres along the TCH between Kamloops and the Alberta border — Kamloops, Chase, Sorrento, Salmon Arm, Sicamous, Revelstoke and Golden.




## 2.4 Transportation Improvements

There are several highway upgrades that are currently under construction or that are near construction; and described as follows:

- The remainder of the 4-laning of the Trans-Canada Highway from the Tumbleweed Interchange to Highway 97 at Monte Creek will be going to tender in 1998, with completion anticipated by the end of the year 2000. One phase of the project was completed in 1997, including a diamond interchange at Hook Road ("Growers Market"). The completed project will include upgrading of the Tumbleweed Interchange and construction of a grade-separated interchange with Highway 97 at Monte Creek (Segment 37).
- Upgrading of the highway to a 4-lane arterial is currently under way in Salmon Arm - Hospital Hill (Segment 90) to 30<sup>th</sup> Northwest.
- A westbound passing/climbing lane is currently under construction west of Sicamous (Segment 110).
- There will be intersection improvements at Sicamous, including the addition of eastbound left turn lanes (Segment 130).



 Trans-Canada Highway Corridor  
 Major Roads  
 Local Roads

 Water Bodies  
 Watercourses  
 Incorporated Areas



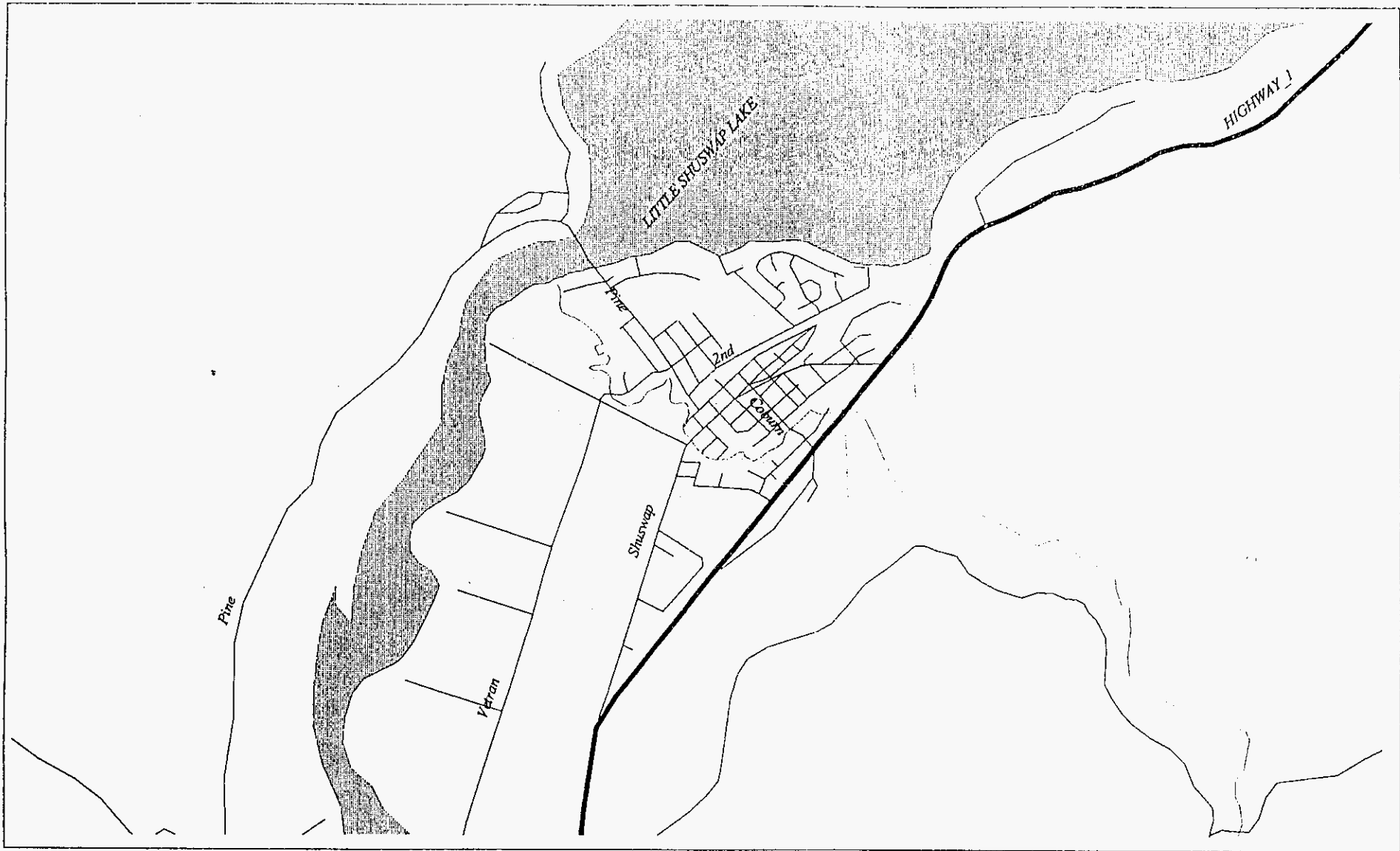
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


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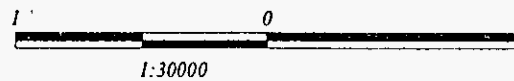
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Figure 2.7  
 Urban Road System - Kamloops



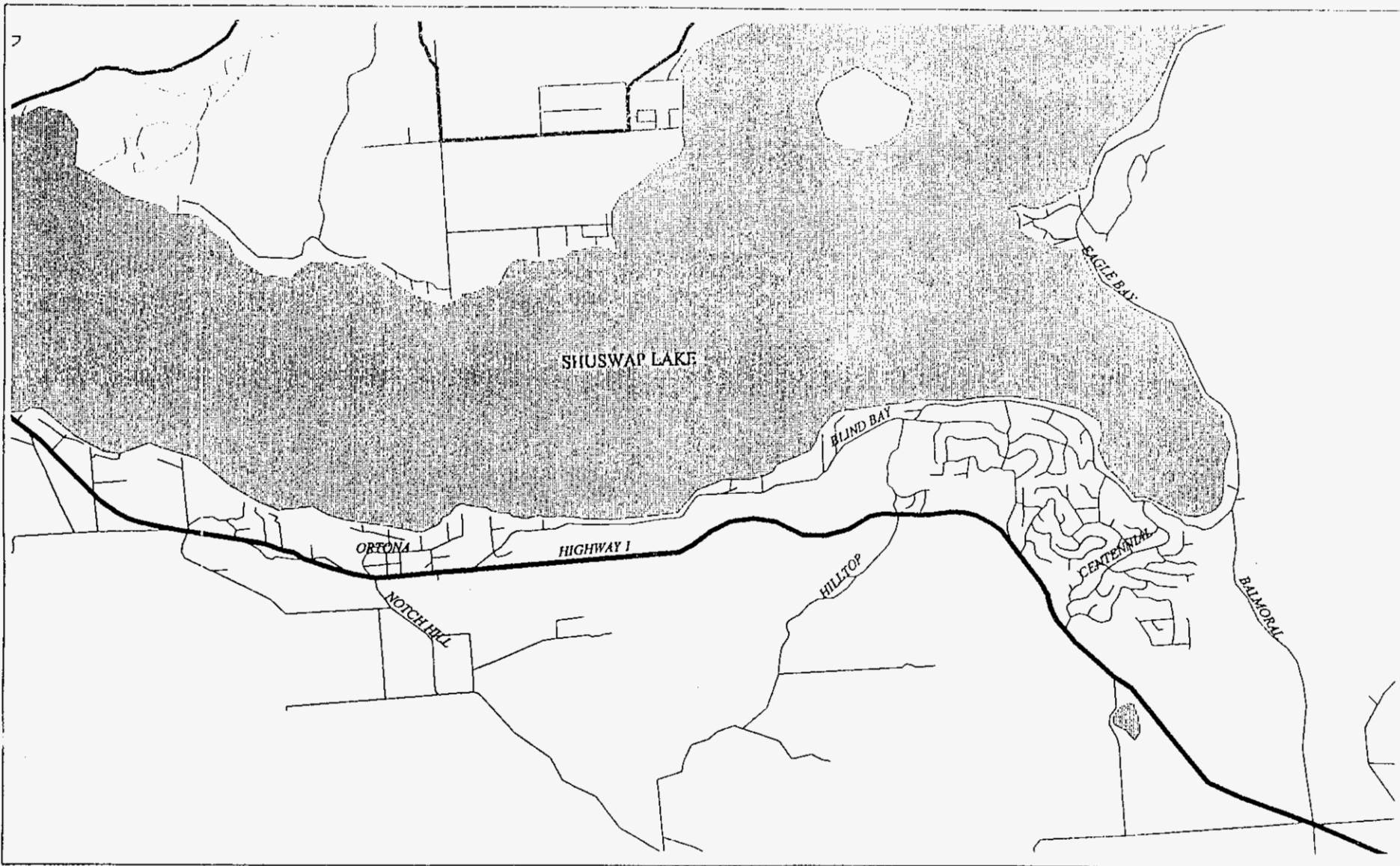
-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas









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**Figure 2.4**  
**Urban Road System - Chase**



-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas



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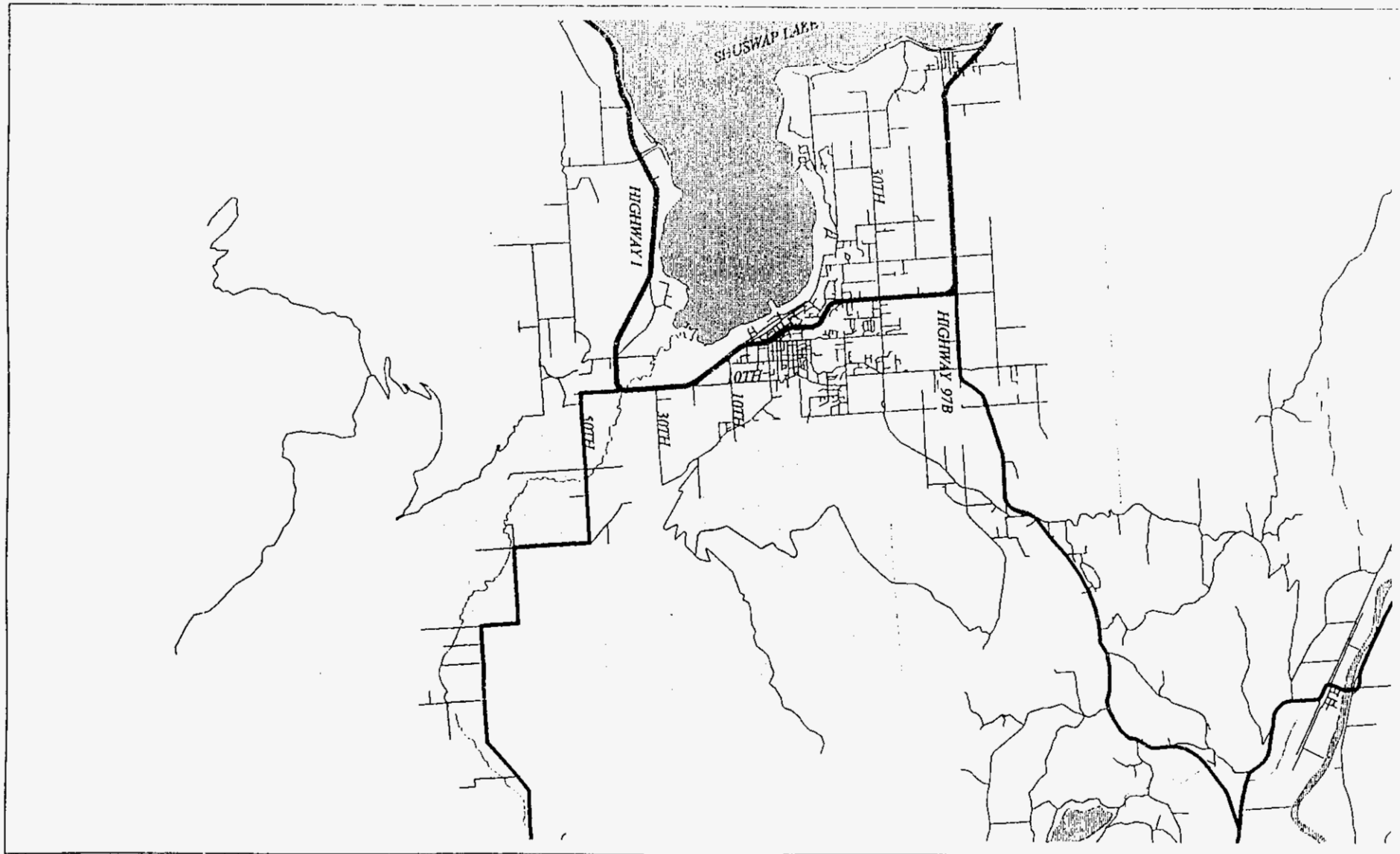
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



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Figure 2.5

Urban Road System - Sorrento/Blind Bay



-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas

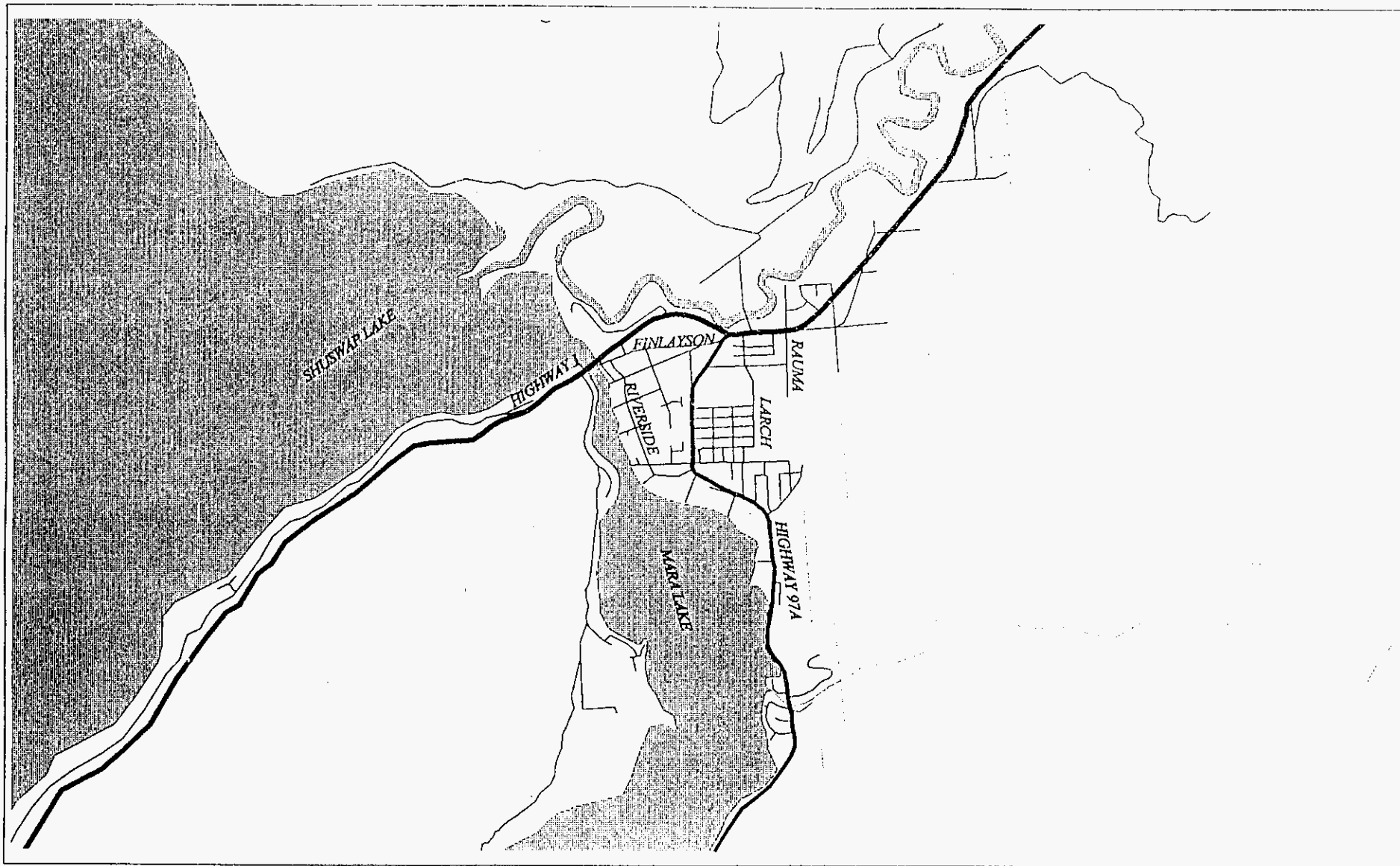








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Figure 2.6  
Urban Road System - Salmon Arm



-  Trans-Canada Highway Corridor
-  Major Roads
-  Local Roads
-  Water Bodies
-  Watercourses
-  Incorporated Areas



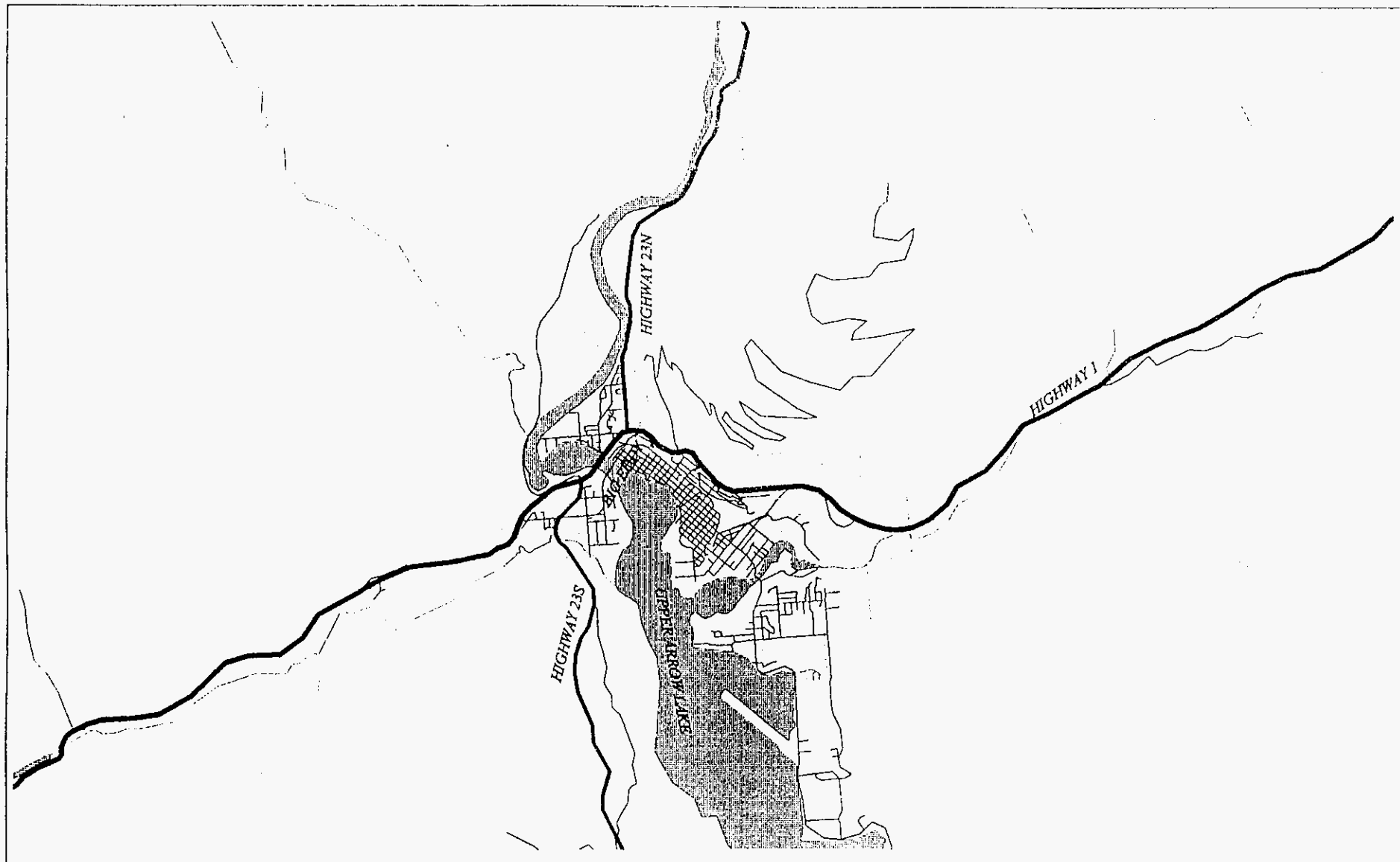
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
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Figure 2.7  
Urban Road System - Sicamous






 Trans-Canada Highway Corridor  
 Major Roads  
 Local Roads

 Water Bodies  
 Watercourses  
 Incorporated Areas

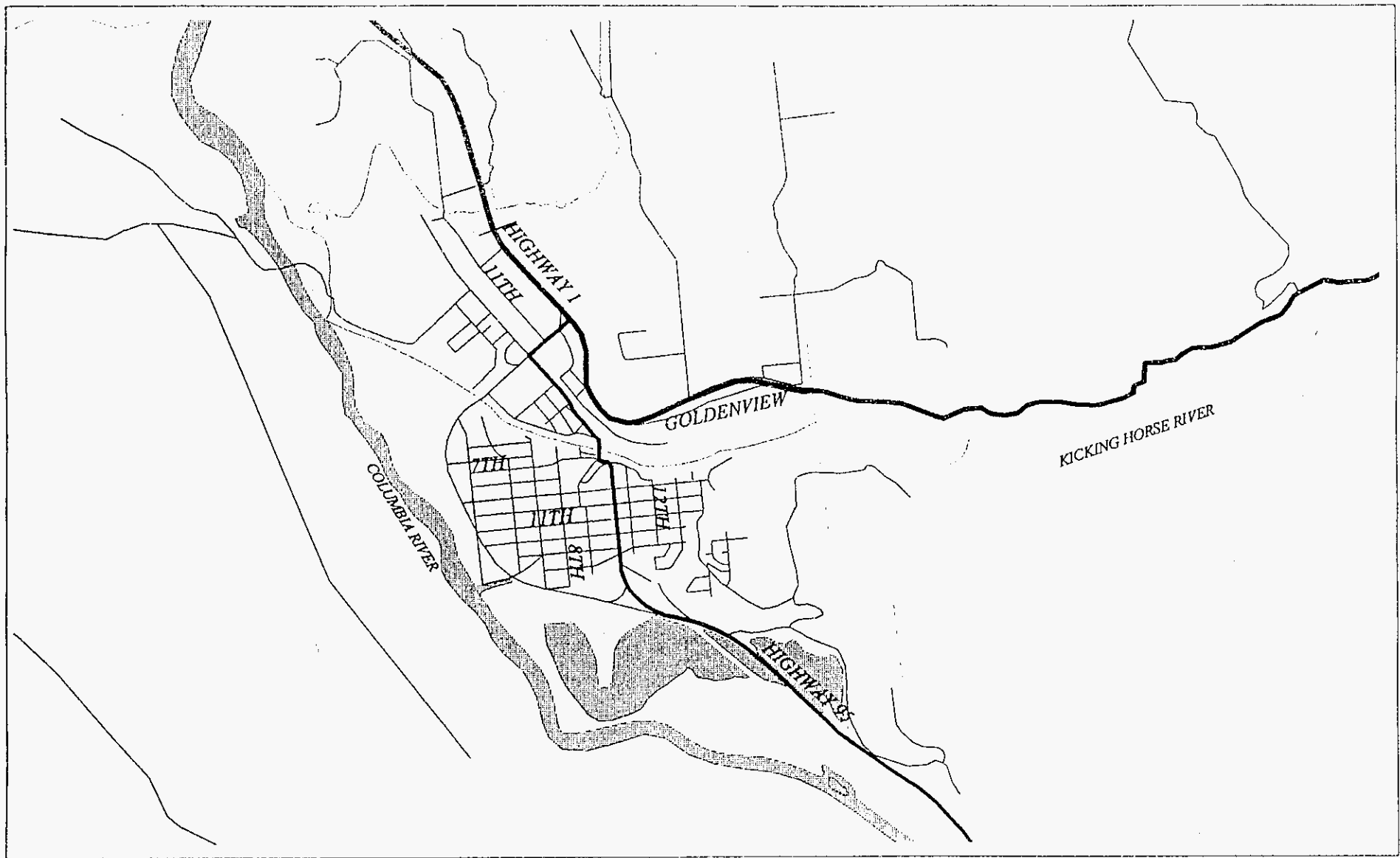


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
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Figure 2.8  
 Urban Road System - Revelstoke



 Trans-Canada Highway Corridor  
 Major Roads  
 Local Roads

 Water Bodies  
 Watercourses  
 Incorporated Areas \*



  
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Figure 2.9  
 Urban Road System - Golden

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- Construction of the frontage roads and addition of signals on the highway for frontage road access is now complete through the Golden area (Segment 300).

There are several other planned projects that have been identified - mostly passing lanes - but for which there has been no commitment to date. There are plans for additional passing lanes east and west of Revelstoke. There have been several proposals for both Three-Valley Gap and Golden to Yoho National Park. There has also been some consideration for passing lanes west of Golden. There are no current plans for additional 4-laning. Constituent studies are planned to evaluate the performance of the highway from Revelstoke to Yoho National Park.

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## 3 Traffic Characteristics

Historical data and information sources provide an indication of the current role and function of the TCH. This information will also represent the baseline characteristics in which to prepare traffic forecasts. Ultimately, these data will be used to identify travel on the TCH which is attributed to internal and external activity centres — for the purpose of this assessment, internal activity centres refer to those communities and activity nodes immediately adjacent to the TCH between Kamloops and the Alberta border.

This section of the report highlights background traffic characteristics on the TCH for the purpose of:

- defining highway segments;
- evaluating of historical traffic patterns in order to establish relationships between forecast conditions in terms of annual, monthly, daily, and hourly volumes as well as vehicle classification and trip distribution patterns;
- resolving missing SADTs and AADTs for each segment; and
- summarizing daily traffic characteristics in terms of internally and externally generated travel.

### 3.1 Information Sources

Traffic characteristics throughout the section of the TCH between Kamloops and the Alberta border were generated from traffic counts and surveys conducted by the Ministry of Transportation and Highways (MoTH). The Ministry's count program includes three types of data collection which are described as follows:

- **Short Counts.** Automatic traffic recorders are installed over a 7 day period at 23 locations along the highway each year. The number of vehicles crossing each station location are recorded at 15 minute intervals providing both hourly and daily summaries over the course of the week.
- **Vehicle Classification Surveys.** Surveys of vehicle types have been recorded at seven stations along the TCH according to 10 classes of vehicles — cars, pickups/vans, light trucks, heavy trucks, logging

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trucks, buses, motorcycles, bicycles and “others.” These data are recorded at 15 minute intervals providing hourly summaries of the traffic composition.

- **Origin-Destination Surveys.** Travel patterns along the TCH have also been reported through origin-destination surveys which record characteristics about the trip purpose — such as work, shopping, personal business/medical, recreation 1 day and recreation multi-day — as well as place of origin and destination. Along the section of the TCH between Kamloops and the Alberta border, origin-destination surveys have been completed at six locations.

Table 3.1 summarizes the location of available background data provided by the Ministry for this assignment.

**Table 3.1 : Background Data Sources**

Survey Location	Short Counts	Vehicle Classification Survey	Origin Destination Survey
0.3 km east of Highway 5A	88—96		
Sagebrush Interchange	93—96		
Yellowhead Interchange	95—96		
0.6 km east of Tanager Rd	88—96		
1.5 km east of Pat Road	88—96		
4.5 km west of Hwy. 97	88—96		√
14.5 km east of Monte Creek		√	
0.6 km east of Hwy. 97	88—96		
0.6 km west of Anglemont Rd	88—96		
1.1 km east of Anglemont Rd	88—96		
East of Tappen		√	
0.2 km west of Salmon R. Rd.	88—96		
0.2 km east of Salmon R. Rd.	88—96		
0.2 km west of Hwy. 97B	88—96		
1.6 km west of Bruhn Bridge	88—96		
1.8 km east of Hwy. 97	88—96		√
East of Sicamous		√	
25 km east of Sicamous		√	
0.2 km east of Gorge/Craig.	90—96		
1.1 km east of Woods O/H	92—95		
West side Columbia R. Bridge	88—94	√	
4 km east of Hwy. 23	88—90, 94—95		√
Roger's Pass			√
3.2 km west of Hwy. 95	88—95		
2.5 km east of Hwy. 95	91—95		
West Yoho Park Gates	88—92		

## 3.2 Highway Segment Refinement

Characterizing the TCH according to relatively homogeneous segments provides a manageable means of assessing highway conditions and forecasting internal and external components of growth. As previously discussed, the background study entitled "*Analysis Framework TCH Kamloops to Alberta Border Corridor Planning Study*" delineated 33 segments of the highway across the entire study area. These segments were characterized based on four primary features as follows:

1. Service Class
2. Urban (population > 5,000) or Rural land use
3. Major changes in terrain
4. Major highway junctions

Where distinctly different traffic volumes are found within a particular segment, further refinements may be needed for the purpose of this, and future transportation studies. Of the 33 segments identified within the study limits, multiple short count station locations are present for only three segments:

- *Segment 10* — Afton Interchange to Yellowhead;
- *Segment 30* — Tanager Road to Highway 97; and
- *Segment 90* — Salmon River Bridge to Highway 97B.

Table 3.2 below provides a comparison of SADT volumes between 1993 and 1996 at the stations within each segment.

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**Table 3.2: Segment Traffic Characteristics Comparison  
(SADTs)**

Station Name	Year			
	1993	1994	1995	1996
<b>Segment 10</b>				
0.3 km east of Hwy. 5A	30,141	31,639	32,443	35,372
Sagebrush Interchange	13,934	15,476	16,890	17,286
Yellowhead O/H	—	—	31,890	29,841
<b>Segment 30</b>				
0.6 km east of Tanager Rd	25,152	26,552	—	25,008
1.5 km east of Pat Rd	16,516	17,776	—	18,044
4.5 km west of Hwy. 97	13,384	13,988	14,380	14,467
<b>Segment 90</b>				
0.2 km east of Salmon Rd.	14,875	15,915	15,367	15,492
0.2 km west of Hwy. 97B	14,419	14,717	15,989	15,811

These results indicate that SADTs recorded at stations within both Segments 10 and 30 vary tremendously, while counts recorded within Segment 90 are generally consistent. Within Segment 10, SADTs immediately east of Highway 5A and at the Yellowhead Interchange are significantly higher than reported at the Sagebrush Interchange (Columbia Street). SADTs recorded at the Sagebrush Interchange are between 45% and 60% of those collected at stations to the east and west. The Sagebrush Interchange serves a significant portion of traffic on the TCH between the City of Kamloops and areas to/from the west. Similarly, the Yellowhead Interchange serves travel between Kamloops and areas to and from the east. It is, therefore, recommended that Segment 10 be further subdivided into three distinct sections as follows:

- **Segment 10** — Afton Interchange to Columbia Street
- **Segment 13** — Columbia street to Summit Drive
- **Segment 17** — Summit Drive to Yellowhead Highway

A similar comparison of SADTs for Segment 30 also indicates distinctly different traffic characteristics between the western station near Tanager Road and the eastern section near Monte Creek. SADTs gradually

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decline along the TCH between these stations by almost 50%, from the western to eastern limits. Again, traffic generated east of the City of Kamloops is being dispersed from, or generated to, the highway throughout this segment. The Tumbleweed Interchange represents the eastern edge of development within the City of Kamloops. As planned growth within this area of the City is anticipated to be significant, traffic volumes within this segment of the TCH will remain higher. In order to reflect the unique characteristics of the highway through this area, Segment 30 should be further sub-divided into three segments as follows:

- **Segment 30** — Tanager Road to Kipp Road Interchange (Dallas)
- **Segment 33** — Kipp Road to Tumbleweed
- **Segment 37** — Tumbleweed to Highway 97

In summary, these refinements result in a total of 37 distinct highway segments between Kamloops and the Alberta border as illustrated in Figure 3.1 to 3.9.

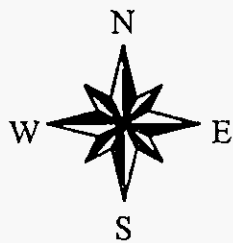
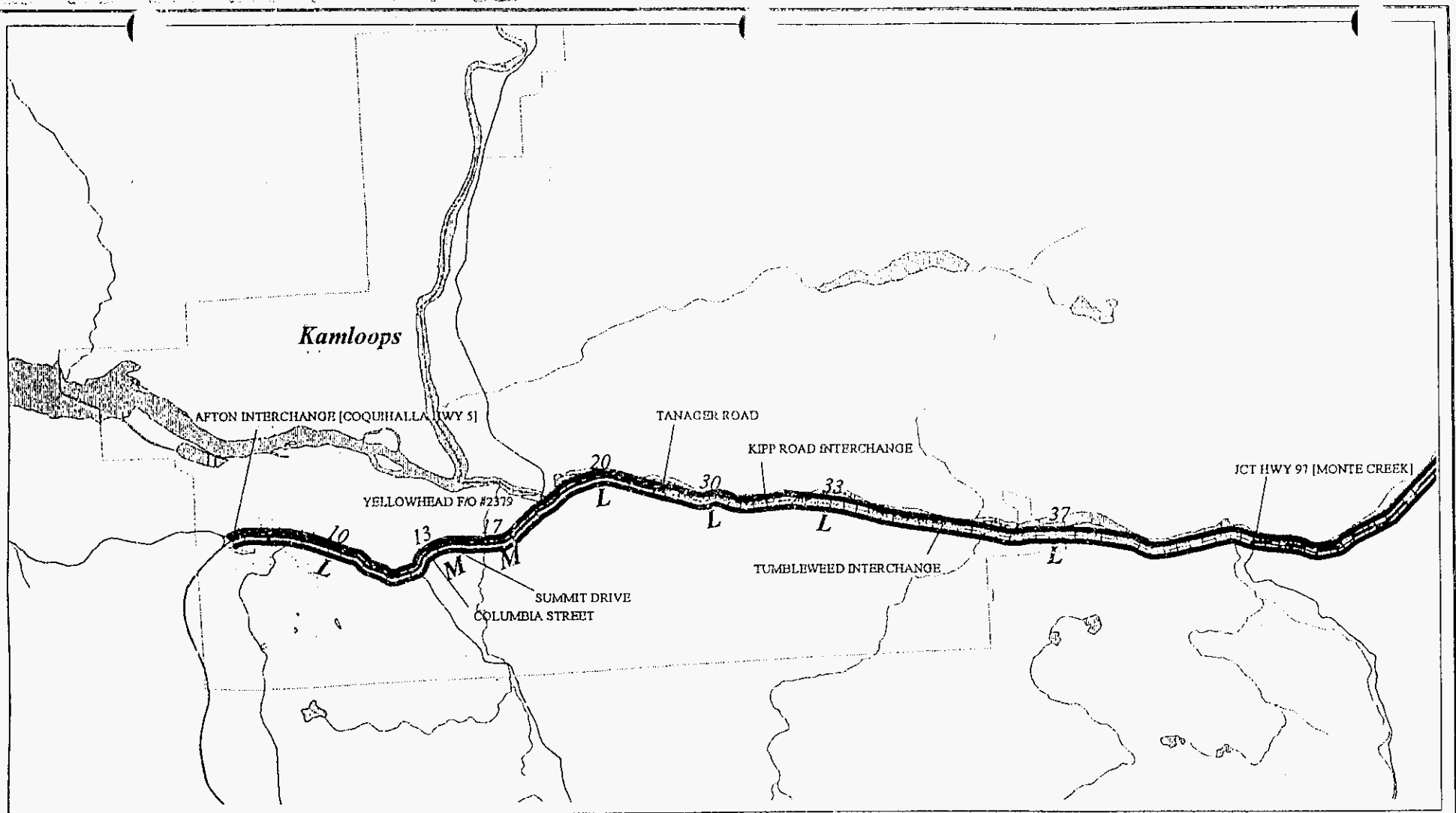
### 3.3 Historical Traffic Characteristics

The TCH CMP will ultimately address several issues that will rely on a comprehensive understanding of the historical traffic patterns along the corridor. In fact, many of these patterns will be used to forecast future conditions. This section of the report examines key historical traffic characteristics along the TCH and highlights these broad relationships in terms of: annual, seasonal, monthly, daily and hourly traffic volumes.

#### 3.3.1 Summer / Annual Daily Traffic Volumes

Daily traffic volumes at each of the Ministry's short count stations are summarized in terms of summer and annual average daily traffic (SADT and AADT) volumes as provided in Appendix A. As expected, these results indicate that the SADTs are higher than the AADTs principally due to tourism related traffic. In the mid to late 80s, the relative difference between SADT and AADT became smaller with the opening of the Coquihalla Highway. In particular, the Coquihalla Highway enhanced travel times and provided an attractive alternative for winter travel between Kamloops and the Lower Mainland. A summary of the





- 99 Segment**
- Rural Arterial
  - Rural Expressway
  - Urban Arterial
  - Urban Expressway
  - Urban Freeway
- Land Use**
- Rural
  - Suburban
  - Urban
- Local Roads
- Watercourses
- Water Bodies
- Incorporated Areas

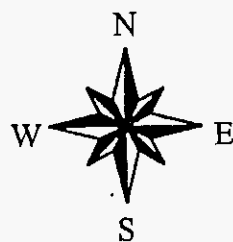
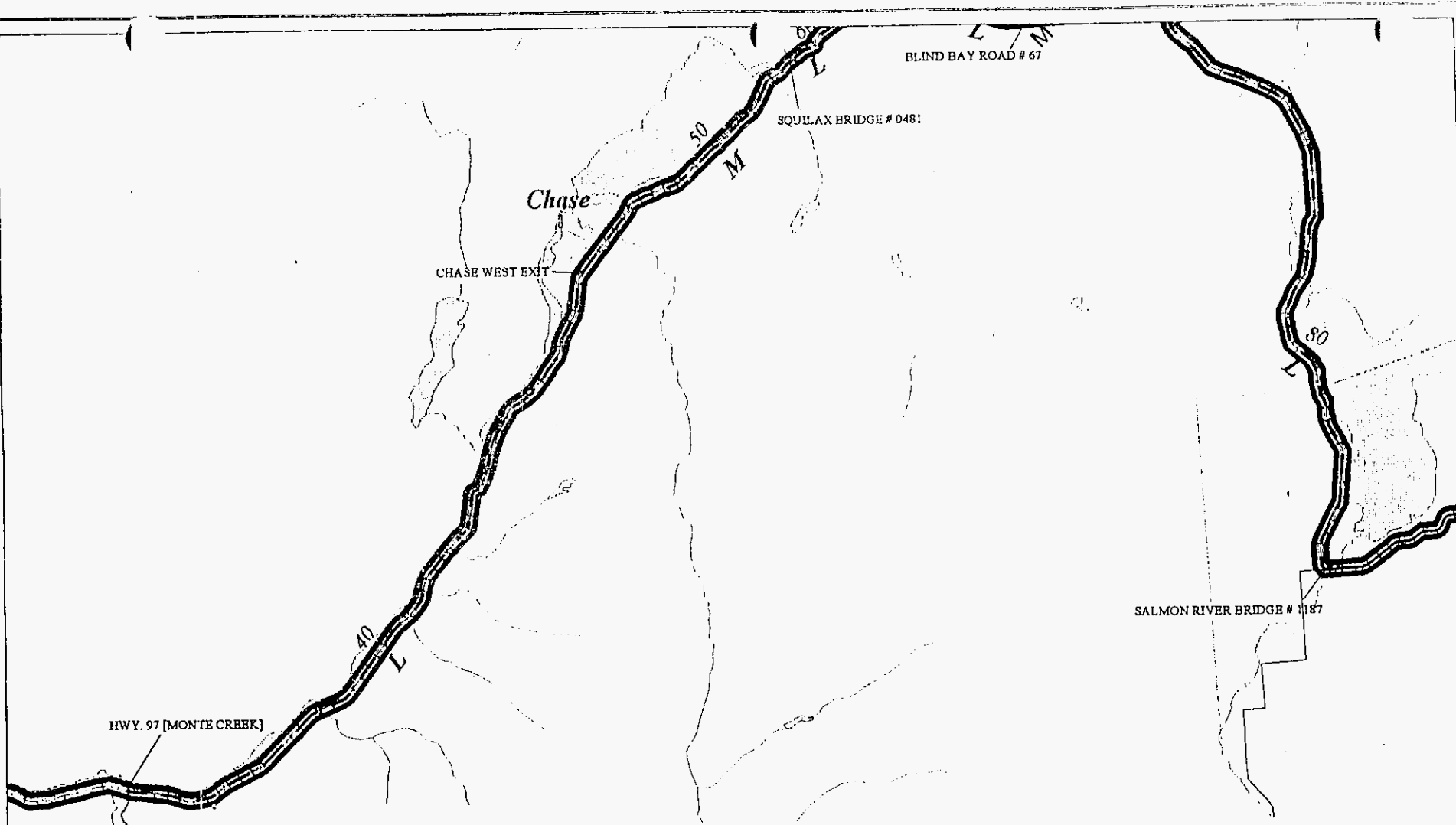
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**Figure 3.1**  
**Corridor Segment Characteristics**  
**Kamloops to Monte Creek**



- 99 Segment**
- Highway Class**
- Rural Arterial
  - Rural Expressway
  - Urban Arterial
  - Urban Expressway
  - Urban Freeway
  - Local Roads
  - Watercourses
  - Water Bodies
  - Incorporated Area
- Land Use**
- Rural
  - Suburban
  - Urban

5 0 5 Kilometers

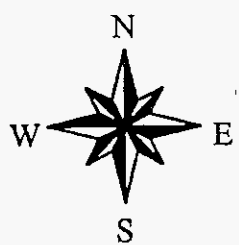
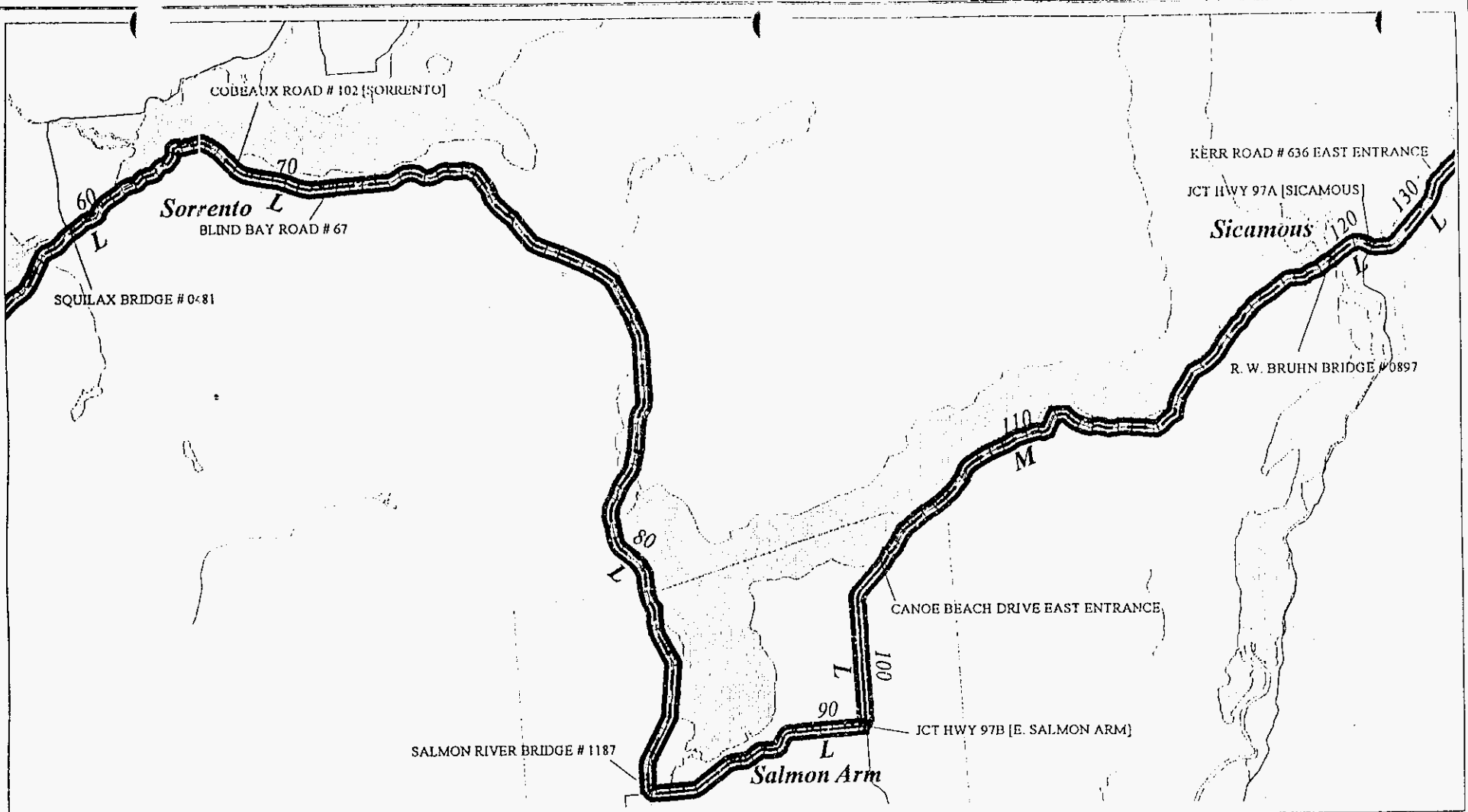
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**Figure 3.2**  
**Corridor Segment Characteristics**  
**Monte Creek to Squilax**



- 99 Segment**
- Highway Class
    - Rural Arterial
    - Rural Expressway
    - Urban Arterial
    - Urban Expressway
    - Urban Freeway
  - Local Roads
  - Watercourses
  - Water Bodies
  - Incorporated Areas
- Land Use**
- Rural
  - Suburban
  - Urban

5 0 5 Kilometers

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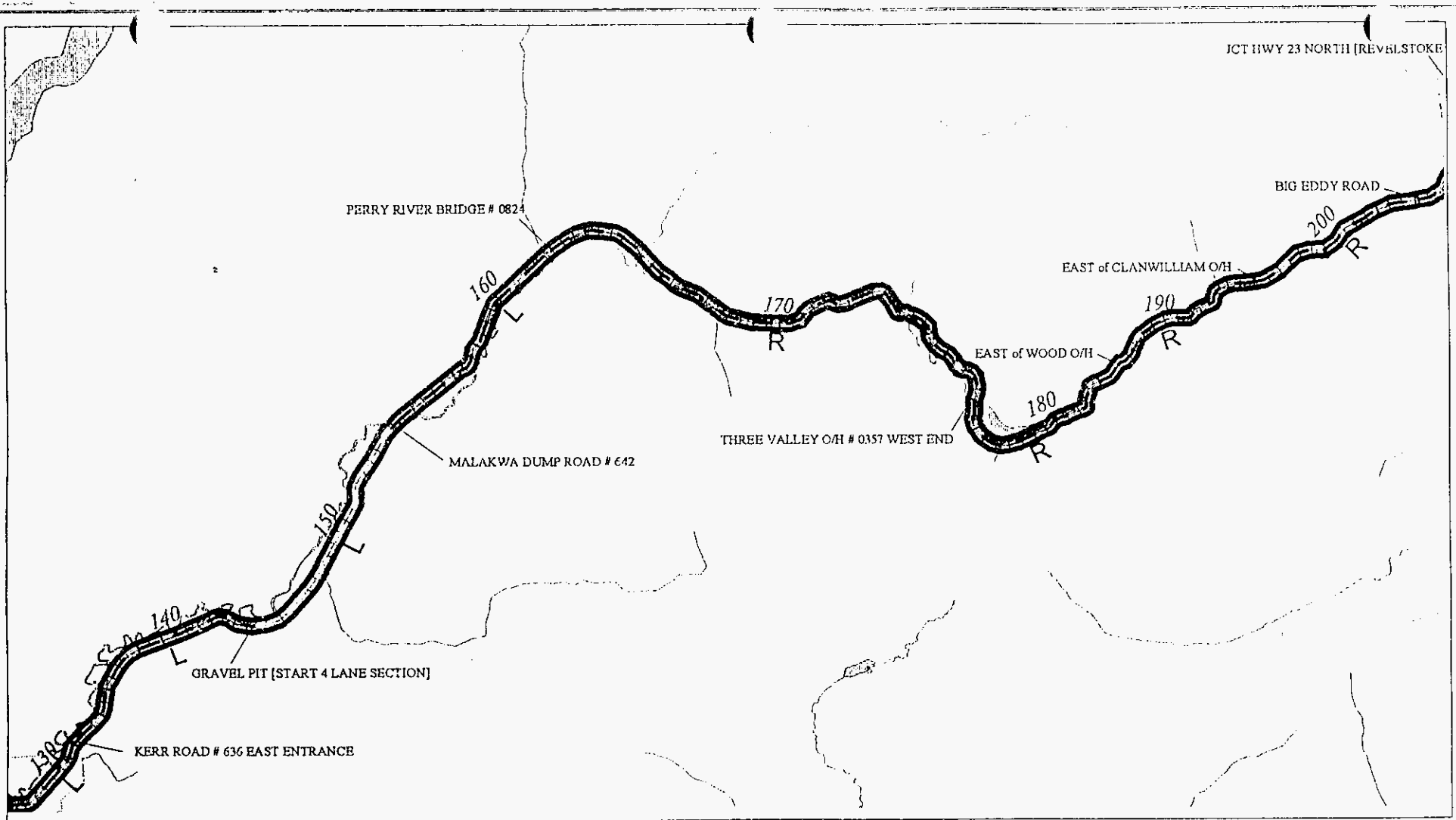
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**Figure 3.3**  
**Corridor Segment Characteristics**  
**Squilax to Sicamous**



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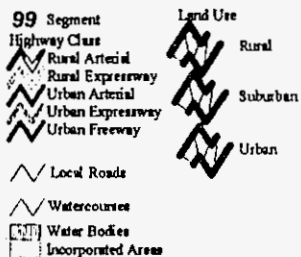
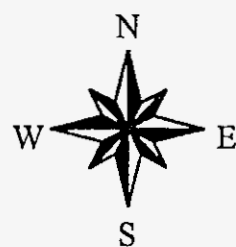
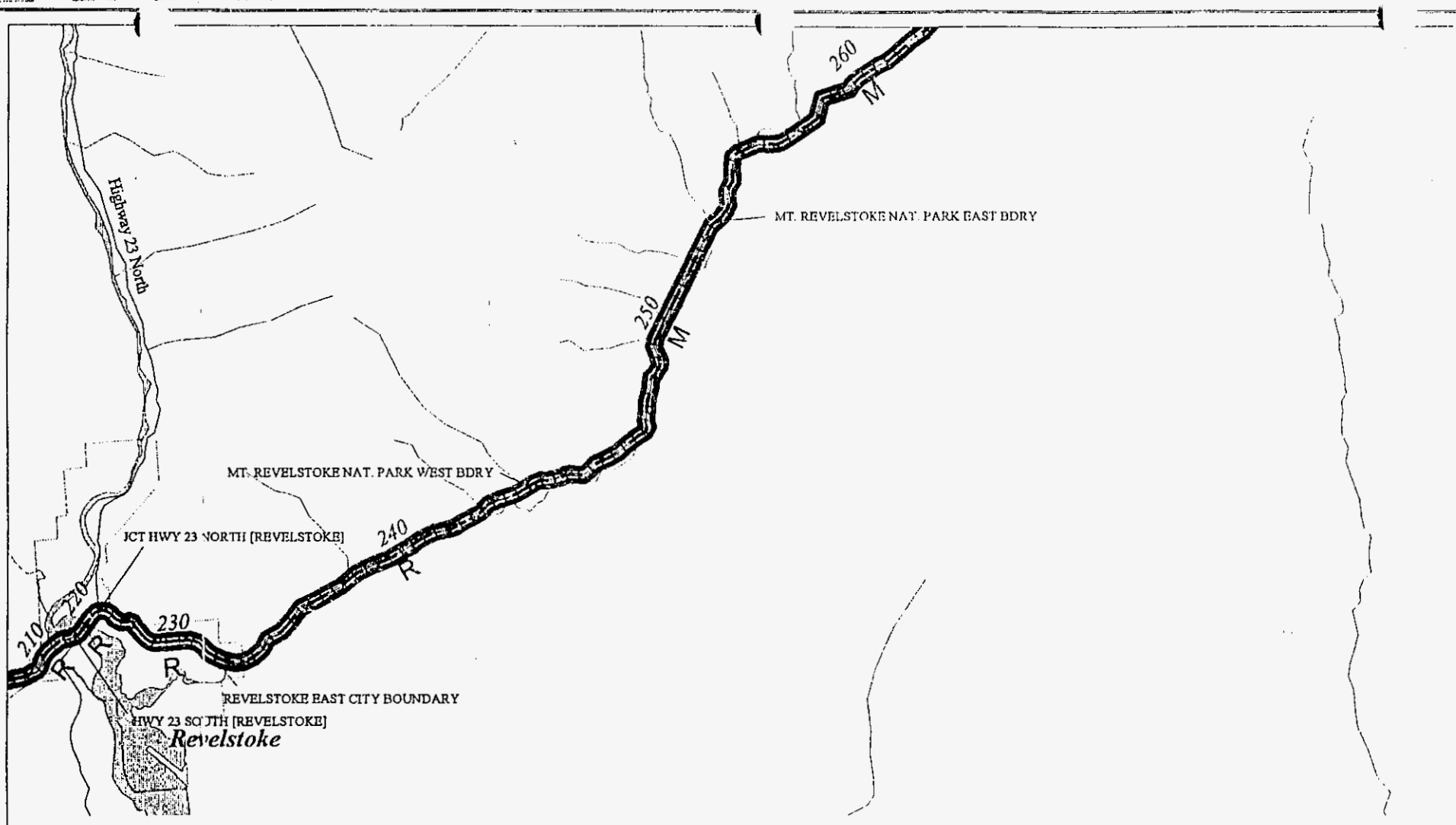
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**Figure 3.4**  
**Corridor Segment Characteristics**  
**Sicamous to Revelstoke**



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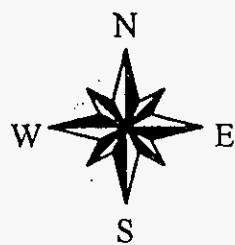
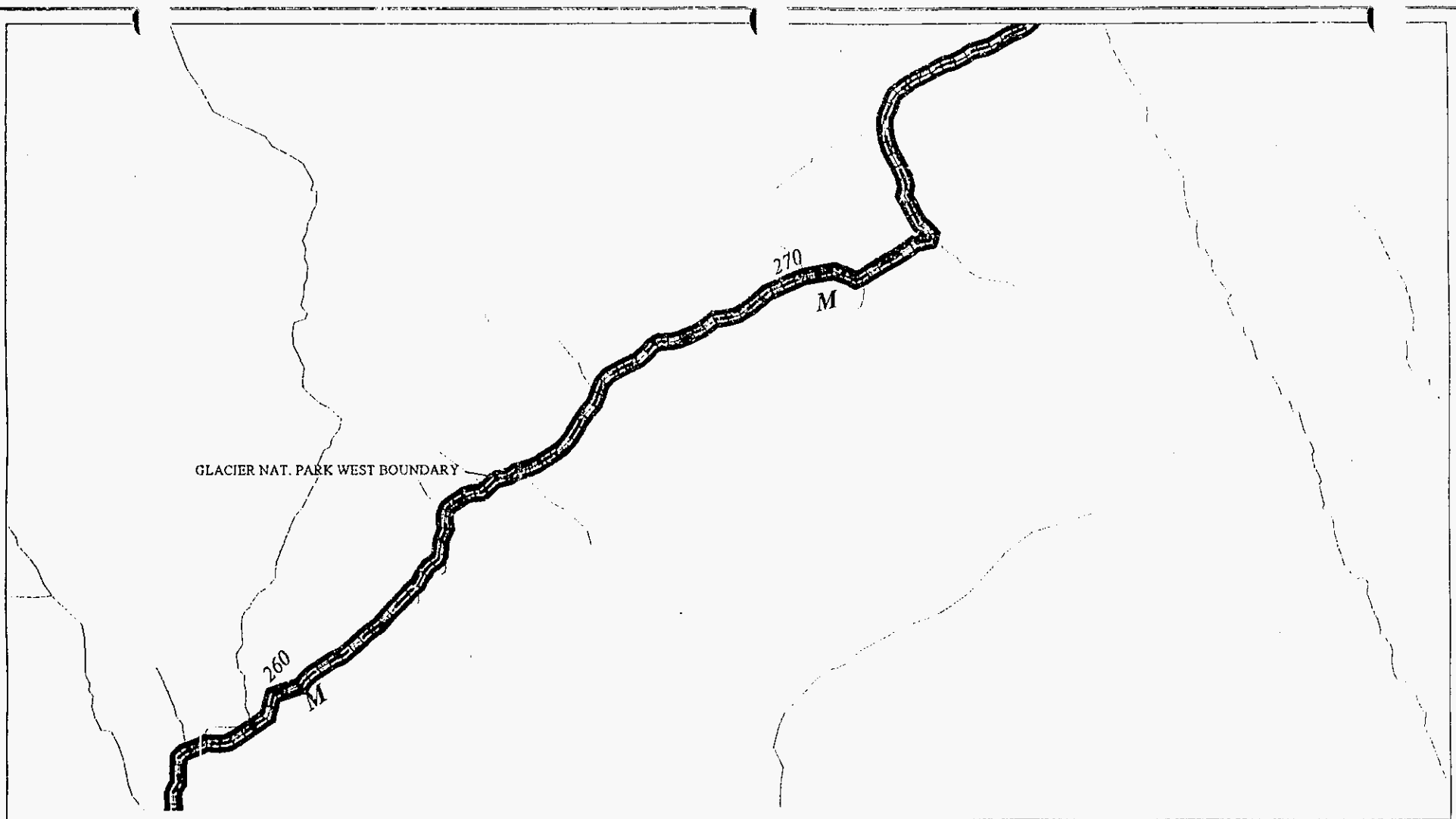
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**Figure 3.5**  
**Corridor Segment Characteristics**  
**Revelstoke to Mt. Revelstoke Nat'l Park**



- 99 Segment**
- Highway Class**
- Rural Arterial
  - Rural Expressway
  - Urban Arterial
  - Urban Expressway
  - Urban Freeway
  - Local Roads
  - Watercourses
  - Water Bodies
  - Incorporated Areas
- Land Use**
- Rural
  - Suburban
  - Urban

5 0 5 Kilometers

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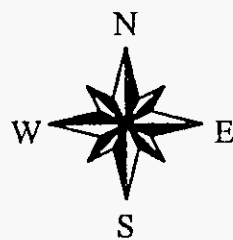
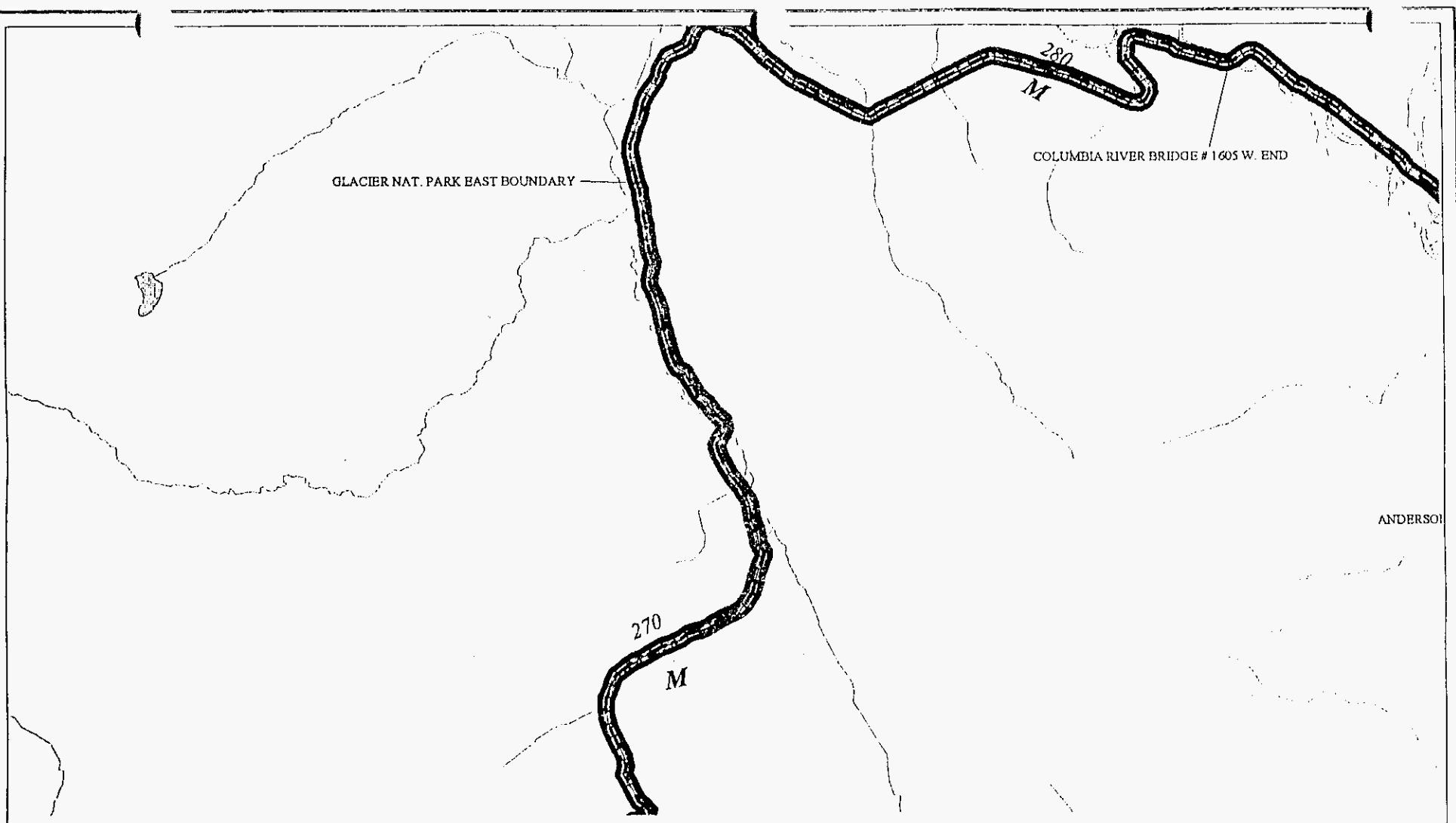
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**Figure 3.6**  
**Corridor Segment Characteristics**  
**Mt. Revelstoke to Glacier Nat'l Park**



- 99 Segment**
- Highway Class**
- Rural Arterial
  - Rural Expressway
  - Urban Arterial
  - Urban Expressway
  - Urban Freeway
- Land Use**
- Rural
  - Suburban
  - Urban
- Local Roads
- Watercourse
- Water Bodies
- Incorporated Areas

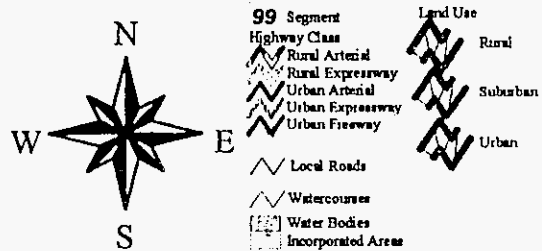
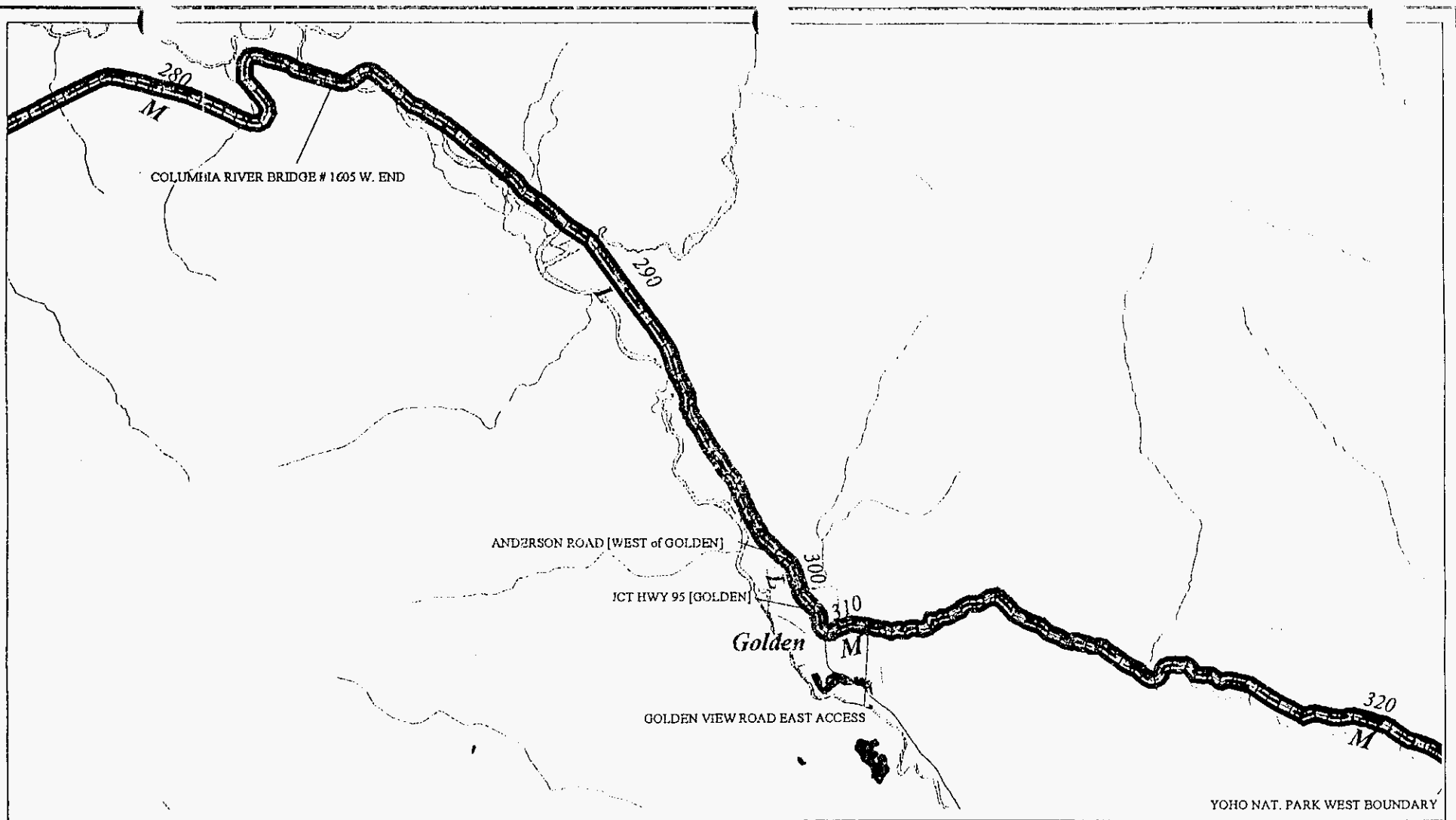
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**Figure 3.7**  
**Corridor Segment Characteristics**  
**Glacier National Park**



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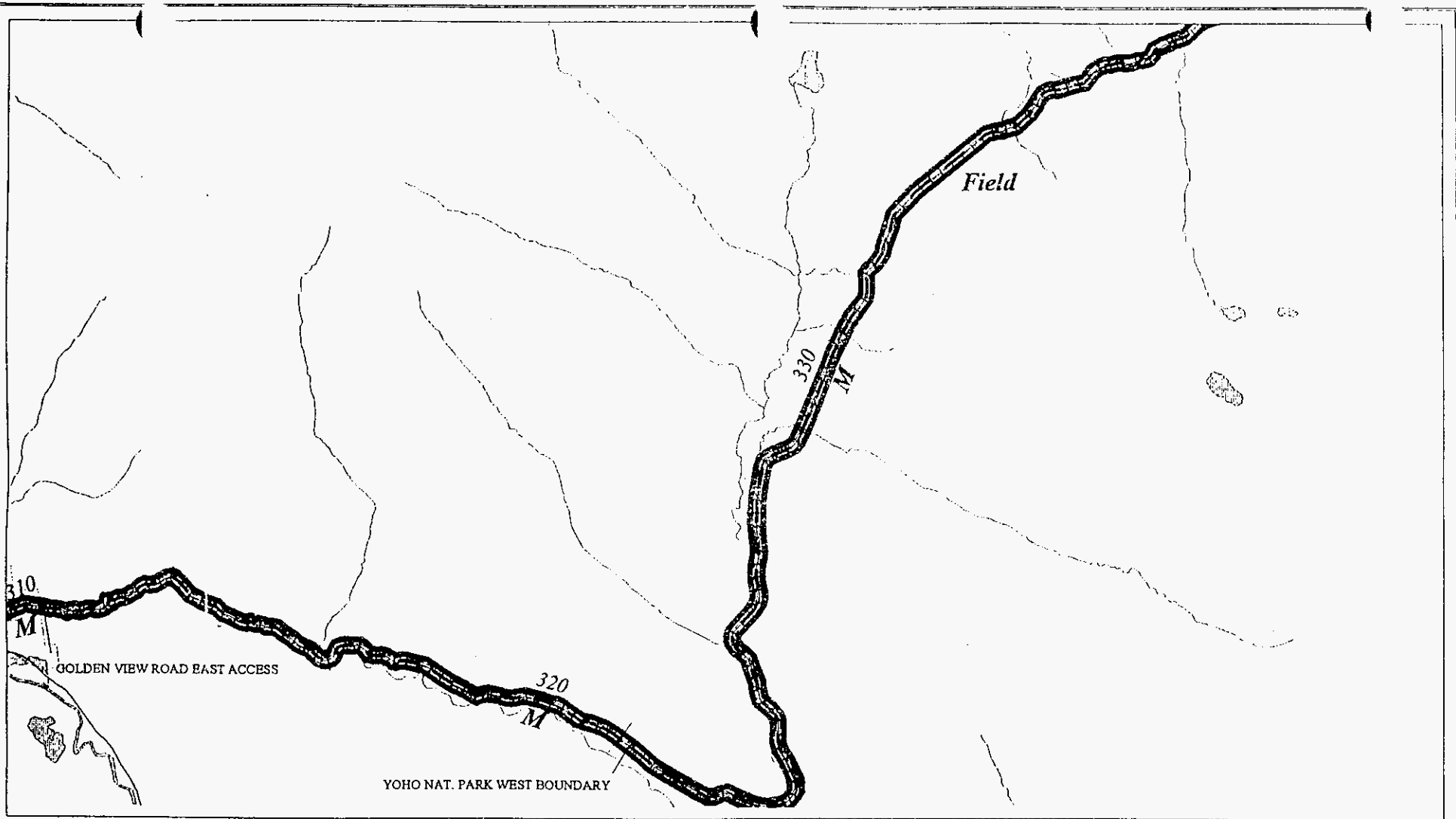
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**Figure 3.8**  
**Corridor Segment Characteristics**  
**Glacier Nat'l Park to Golden .**



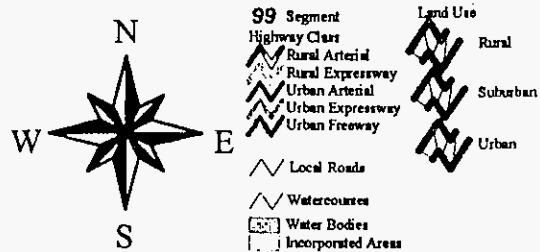


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**Figure 3.9**  
Corridor Segment Characteristics  
Golden to the Alberta Border



5 0 5 Kilometers

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more recent relationships between SADTs and AADTs for each of the count stations since 1988 is provided below in Table 3.3.

**Table 3.3: Average SADT/AADT Ratio Summary, (Between Kamloops and Alberta Border)**

Year	Average SADT/AADT Ratio
1988	1.48
1989	1.43
1990	1.59
1991	1.60
1992	1.57
1993	1.56
1994	1.54
1995	1.40
1996	1.45
Average	1.51

These results indicate that the ratio between SADT and AADT has been relatively constant for the last 9 years, with a high of approximately 1.60 in 1991 to a low of 1.43 in 1989. While the SADT/AADT ratios observed over the last couple of years are lower, it would be premature to suggest that the annual daily traffic was growing at a faster rate than summer traffic, such as was the case in the early to mid 1980s.

### **3.3.2 Monthly Average Daily Traffic Patterns**

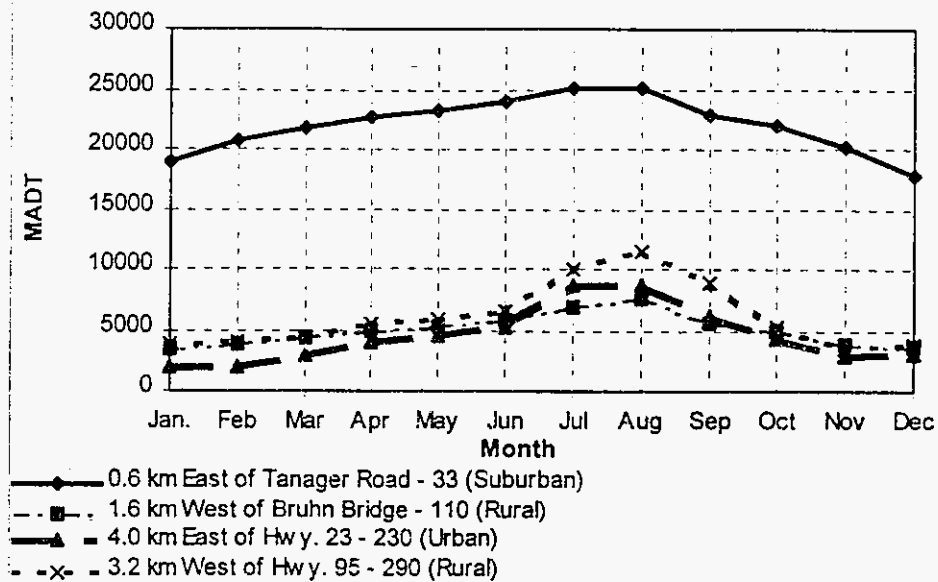
Traffic patterns along the TCH vary from one month to the next. Historically, January monthly average daily traffic (MADT) volumes have been the lowest of the year, with a steady increase toward the summer until the peak in July and August. Appendix B provides MADT volumes at each of the short count station locations.

The seasonal patterns are summarized for four segments along the TCH in Figures 3.10 and 3.11. These summaries allow for comparison of seasonal traffic patterns across the corridor, as well as between urban, suburban and rural sections.

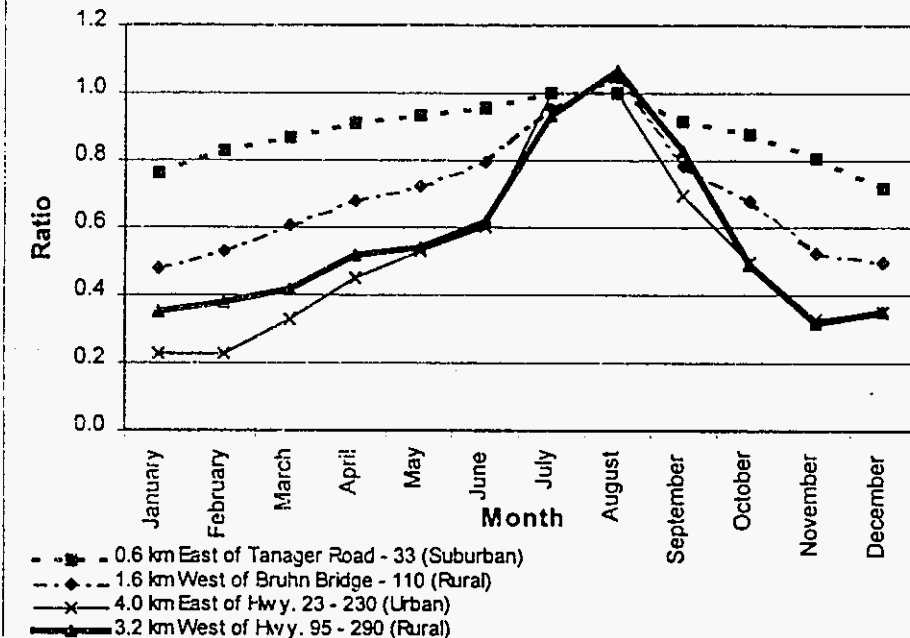
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**Figure 3.10: 1996 Monthly Average Daily Traffic**



**Figure 3.11: 1996 Ratio of MADT to SADT**



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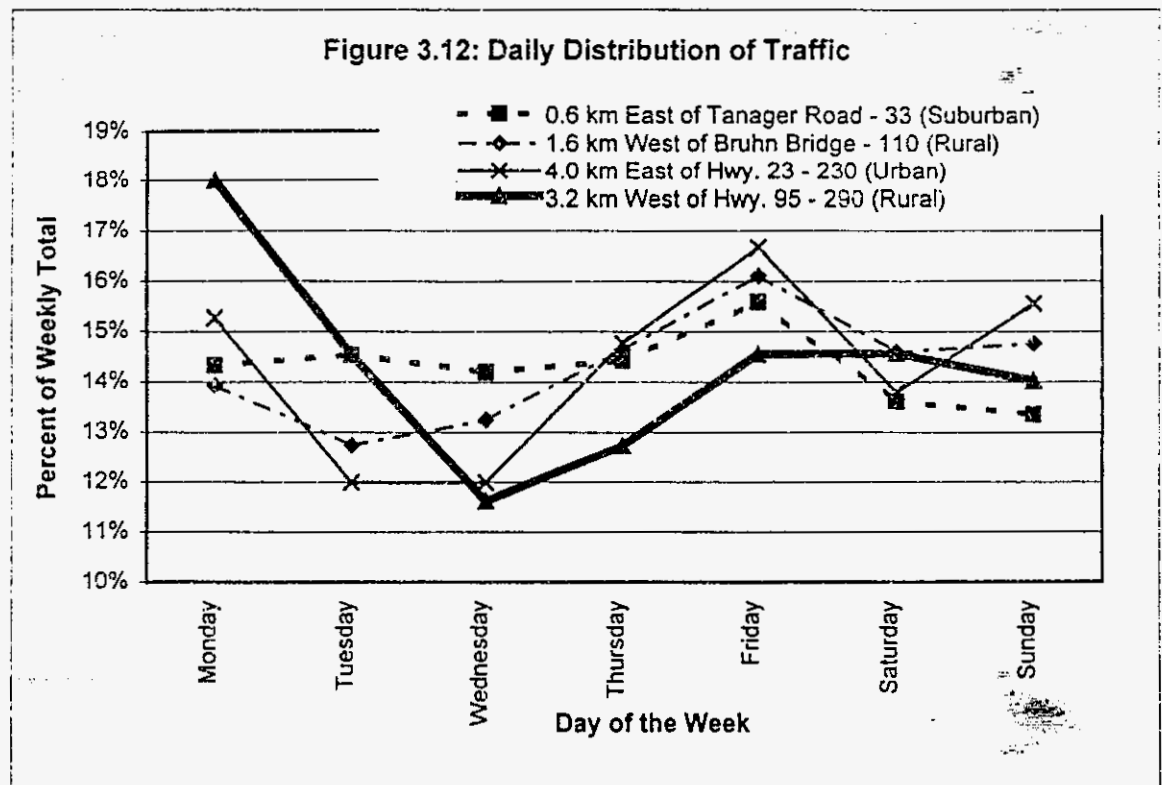
Several observations may be made about the seasonal patterns through the respective segments, and they are summarized as follows:

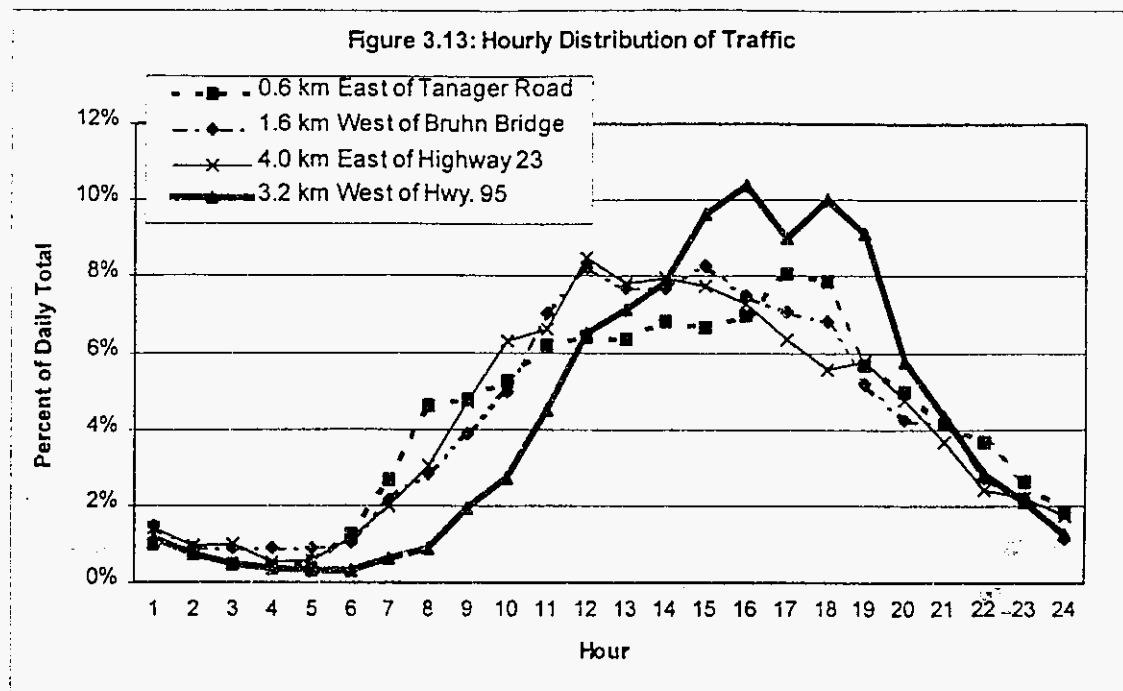
- Peak daily travel throughout the corridor still occurs during the summer months of July and August. MADT/AADT ratios during these months range anywhere from approximately 1.1 to 1.9. Summer, tourist travel accounts for a significant part of the annual variation.
- The months of November through February continue to support the lowest MADTs along the TCH. It is anticipated that the combined factors of lower tourism and weather conditions may account for much of this pattern.
- In the western section of the corridor — Segments 10 and 110 — the MADT/AADT ratio ranged between 0.7 to 1.5. These patterns indicate that recreation related travel, as a percentage of total daily trips, is more significant in the eastern sections of the TCH. The variability of the same ratio in the eastern segments is significantly different than the western areas of the highway. MADT/AADT ratios in the eastern sections of the corridor — Segments 230 and 290 — reportedly ranged from a low of approximately 0.4 to 1.9.
- The volume difference between the highest and lowest MADTs for each segment is relatively consistent — ranging between 6,000 to 7,000 vehicle trips per day. This pattern suggests that amount of tourism-based travel remains constant throughout the entire corridor. Based on historic relationships between SADT and AADT, as summarized in Table 3.3, this pattern has not changed over the last 10 years. Therefore, even with the modest growth in daily travel, the tourism component of vehicle trips on the TCH has not increased. Although the general indicators suggest that tourism is growing — as indicated by AcTran Consultants — summer traffic volumes on the TCH do not reflect this pattern. This pattern may be attributed to several factors, including:
  - Other modes of travel, such as air, are attracting growing levels of summer, tourist travel.
  - Tourism industries supported by the TCH experience lower than average growth, or remain stable.

- Perceived/actual travel times during summer months along the TCH may direct tourism trips to other routes, or destinations.

### 3.3.3 Daily and Hourly Traffic Volumes

Daily traffic patterns for the summer months at a select number of stations on the TCH within the study area are illustrated in Figure 3.12. These results indicate that Wednesdays typically carry the lowest AADT volumes, while Fridays, Saturdays and Sundays represent the highest days of the week.





### 3.3.4 Design Hour Volumes

The application of the 30th highest hour traffic volume as the basis for the design of rural highways has been a common practice of the Ministry for several years. This target typically relates to the “knee of the curve” principle when hourly traffic volumes along a rural stretch of road are ranked from highest to lowest for the year. The 30th highest hour is generally considered to be the point at which the rate of reduction between successive hours declines significantly — and thus an appropriate “design hour volume” (DHV). For most rural highways therefore, it is not generally considered feasible or economical to provide for additional capacity to serve demands which only occur a few times each year. Appendix C provides a summary of the ranking of hourly traffic volumes at five key stations along the TCH for the most recent years available. This information illustrates the reducing rate of decline in the ranked hourly traffic volumes. The 30th highest hour is, more or less, reflective of the lower rate of decline in hourly volumes.

In general, AADT and SADT volumes along the TCH are more readily available than the DHV, and therefore, will be the primary focus of this stage of the CMP process. However, the relationships between the AADT, SADT and DHV along the TCH need to be identified for

subsequent stages of the CMP. Table 3.5 below summarizes the recorded relationships between AADT, SADT and the DHV (30th highest hour) at four key locations along the TCH.

**Table 3.5: 1996 Design Hour Volume Relationships**

Segment	Type	Year	DHV/SADT	DHV/AADT
33	Suburban	1996	9%	11%
110	Rural	1996	10%	15%
230	Urban	1994	11%	21%
290	Rural	1995	12%	22%

These results indicate that the DHVs range between 9% and 12% of the SADT and from 11% to 22% of the AADT. The relationship between DHV and AADT/SADT appear to be more related to geographic location (east/west portion of the corridor) rather than urban/rural land use characteristics. Because the DHV is more reflective of peak condition, its relationship to SADT is generally more constant throughout the corridor than with the AADT. Therefore, a conversion factor of approximately 10% should be applied to forecast SADT volumes on the TCH to estimate the DHV, rather than using AADT projections.

### 3.3.5 Vehicle Classification

Vehicle classification surveys are used to identify the characteristics of vehicles travelling along the TCH which can significantly affect the performance of the highway through each segment. Summer surveys have been conducted at several points along the corridor in which vehicles are classified into eight groupings as follows:

1. *Passenger Vehicles* — Vehicles primarily designed to carry 9 or less passengers. Standard sedan, station wagon, mini-van, sport cars, 'car trucks' (El Camino, Rancheros) and all 4WD passenger cars are included in this class.

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2. **Pickups / Vans** —Designed for carrying loads beyond normal passenger cars and/or designed for off-road usage. This includes ½ and ¾ ton pick-up trucks (canopies extending no more than 1 foot above the roof), delivery panel vans, vans seating up to 25 passengers.
3. **Recreation Vehicles** —Designed and built for sleeping/camping (visually obvious). This group includes mobile homes, customized vans with widened bodies/raised roofs, pick-ups with camper shells extending more than one foot above the roof, or other vehicles obviously used as campers.
4. **Light Trucks** —All vehicles with 6 wheels on ground, including pick-ups with dual rear tires (unless used as RV's or passenger busses). This also includes 3 axle (on cab) tractor-trailer units.
5. **Heavy Trucks** —Designed for heavy commercial load carrying (except logging trucks). This group consists of single body trucks (dump trucks, cement trucks, etc.) with trailers (tandem units) or 3 or 4 axle (on cab) tractor-trailer units.
6. **Logging Trucks** —Designed for commercial transport of raw logs (not lumber), either loaded or unloaded. When unloaded, rear trailer is typically carried 'piggy-back' on tractor unit.
7. **Buses** —Designed to carry 25 or more passengers. This class includes school, inter-city and transit busses except where they have been converted to recreational vehicles.
8. **Motorcycles** —Any two-wheeled motorized conveyance including mopeds and motorcycles with sidecars.



A summary of the vehicle classifications for the summer surveys is provided below in Table 3.6.

**Table 3.6: Vehicle Classification Summary  
(Summer)**

Vehicle Classification	Segment Number (*)					
	37	80	130	160	220	Avg.
Passenger Vehicles	49%	64%	63%	52%	49%	55%
Pick-ups/Vans	38%	24%	20%	30%	37%	30%
Recreation Vehicles	5%	5%	7%	6%	7%	6%
Light Trucks	2%	2%	1%	2%	1%	1%
Heavy Trucks	5%	3%	6%	9%	4%	5%
Logging Trucks	0%	1%	1%	0%	0%	1%
Buses	0%	0%	1%	1%	0%	1%
Motorcycles	1%	0%	1%	1%	1%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(\*) Station locations referenced as follows:

1. 37- 14.5 km west of Monte Creek (July/August 1993)
2. 80- East of Tappen (August 1995)
3. 130- East of Sicamous (August 1995)
4. 160- 25 km East of Sicamous (August 1992)
5. 220- East of Highway 23 (August 1993)

Several observations may be made about the surveyed patterns as described below:

- 82% to 88% of the vehicle trips along each segment of the TCH are passenger vehicles and pick-up / vans. The proportion of passenger vehicles ranges from 49% to 64% at the surveyed station and from 20% to 38% of pick-up trucks and vans. It is anticipated that the variations within these categories may be partially due to different survey days and interpretation of vehicle types by the surveyor.
- Recreational vehicles consistently account for 5% to 7% of the vehicle traffic recorded on the TCH. The proportion of recreational

vehicle traffic is slightly higher in the eastern segments, which is reflective of the lower daily traffic volumes.

- Commercial vehicles — such as heavy trucks, logging trucks and buses — account for anywhere from 4% to 10% of the total vehicle trips. While the proportion of commercial vehicles differs at each survey station, the total number is relatively constant (approximately 700 to 900 vehicle trips per day).

### 3.3.6 Trip Purpose and Distribution

The Ministry has undertaken various origin-destination surveys during summer months along the subject section of the TCH. As part of these surveys, information regarding the place of origin and destination were reported, and in some surveys, the trip purpose was also collected. Because of the significant impact of these surveys on highway travellers, they are not collected as often and along as many segments as other traffic data. Additionally, origin-destination surveys are only conducted during the daytime period, and therefore, assume some consistency with evening travel characteristics. Because commercial vehicles are not included in the surveys, this assumption may be appropriate. Commercial traffic was estimated separately based on the vehicle classification surveys as previously discussed. Table 3.7 below summarizes the trip purposes as well as the proportion that are internal to the corridor for three sections of the highway.

**Table 3.7: Trip Purpose Summary  
(Summer)**

Trip Type	% of Total Trips (% that are internal)			
	West of Monte Creek (1993)	East of Tappen (1995)	East of Sicamous (1995)	Average
SADT	14,470	14,980	10,540	—
Work	21.1% (58%)	21.6% (58%)	11.1% (57%)	17.9% (58%)
Shopping	5.2% (75%)	12.4% (81%)	3.2% (80%)	6.9% (79%)
Personal Business	9.6% (57%)	12.8% (67%)	9.1 (26%)	10.5% (50%)
Recreation-1 Day	10.6% (74%)	7.9% (76%)	2.7% (63%)	7.1% (71%)
Recreation- Multiday	46.5% (5%)	39.3% (8%)	65.1% (2%)	50.3% (5%)
Commercial Traffic	7%	6%	9%	7.3%
Total	100%	100%	100%	100%

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Several observations may be made about the trip purpose and distribution patterns as follows:

- Recreational travel — one day and multi day trips — accounts for the largest proportion of vehicle trips throughout the TCH corridor, ranging from 48.2% to 67.8% of the total summer daily traffic. Multi-day recreational trips represent the largest proportion of daily summer travel in the eastern sections of the corridor. Only a small proportion of these trips originate, or are destined to areas within the corridor. Conversely, a large proportion of the one day recreation trips originate or are destined for communities along the corridor.
- Work, shopping and personal business trips account for anywhere from 23.4% to 35.9% of the total vehicle trips along the TCH. Communities in the western section of the corridor, where the SADT is generally higher, also accommodate the largest proportion of this form of local area travel. As indicated by the distribution patterns, most of these trips are between communities along the TCH. This pattern would suggest that work, shopping and personal business trips within and between communities throughout the corridor are significant.
- Although not specifically illustrated in the above table, there are too few stations along the TCH where origin-destination information is collected to reliably develop a true understanding of internal travel patterns. For example, internal trips along the TCH that are made within communities such as Salmon Arm or Revelstoke would not be reflected by these patterns. Additionally, the limited number of stations does not capture travel patterns in the Kamloops area. Therefore, available origin-destination information has limited application for estimating *internal* trips within the corridor, and is most appropriately used to evaluate externally related travel.

### 3.4 Corridor Volume Summary

For the purpose of the CMP assessment, corridor segments have been established to recognize the different characteristics of the TCH either in terms of physical features, surrounding land uses or traffic volumes as presented in Section 3.2. As part of the traffic review, an assessment of representative traffic conditions for each segment is needed. These patterns will ultimately be used as part of the overall CMP to assess not only the potential changes in the character of traffic along the highway, but also the performance of each segment based on current and forecast traffic patterns. Figure 3.14 illustrates the AADT and SADT volumes at each segment for 1996 information. For those segments where no historical traffic count data exists, AADT and SADT volumes have been estimated based on various assumptions about the relationship with upstream and downstream segments of the highway.

These results indicate that the AADT volumes along the TCH were highest west of Monte Creek, which range anywhere from over 30,000 vehicles (in Kamloops) to approximately 10,000 vehicles (immediately west of Highway 97). The SADT for the same area range from just under 15,000 to almost 35,000 vehicles. The City of Kamloops, which is located within this section of the TCH, represents the largest urban centre along the corridor, attracting a significant amount of local and provincial vehicle travel from within and nearby communities.

Approximately 80 km to the east, traffic volumes increase again in the vicinity of Salmon Arm which had AADT volumes ranging between 9,700 vehicles (west of Canoe Beach Drive) to 11,300 vehicles (immediately east of Salmon River Bridge) and SADT volumes of 7,200 and 15,800 for the same segments. AADT volumes across the remaining sections of the TCH reportedly range between 4,500 to 6,700 vehicles from Sicamous to the Alberta Border, while SADT volumes were higher, ranging from 8,900 to 10,500.

Throughout the corridor, there are 14 highway segments for which traffic data are not available. In some cases, consistent land use patterns and limited interconnections with other major highways has allowed for interpolation of upstream and downstream traffic patterns. However, where variations to the reported travel volumes are significant between those segments in which traffic counts are available, and different land uses and/or intermediate highway connections result in distinct traffic

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conditions, additional traffic count data may be required to reduce the assumptions needed to estimate traffic volumes. These cases are discussed individually below:

- Segment 20 — Yellowhead Highway to Tanager Road. The traffic volumes upstream and downstream of this segment differ significantly; the SADT and AADT of Segment 30 are approximately 90% of the Segment 17 volumes. A significant amount of traffic is “lost” at the Yellowhead Highway. There are several signalized and unsignalized intersections through this segment providing access to the highway commercial and residential areas of Valleyview. The AADT volumes for Segment 20 have been interpolated between Segments 17 and 30.
- Segment 70 — Corbeaux Road to Blind Bay. Traffic counts were conducted in this segment in December, 1997. These counts were used to estimate 1996 AADT and SADT volumes.
- The SADT and AADT volumes for Segment 120 — R.W. Bruhn Bridge to Highway 97A have been interpolated from Segments 110 and 130.
- Traffic counts are not available for Segments 140 and 150 — Kerr Road to Gravel Pit and Gravel Pit to Malakwa. Because land uses surrounding the segment to the east, are similar in character, the volumes for Segment 140 and 150 have been interpolated from Segments 130 and 160.
- Segment 170 from the Perry River Bridge to Three Valley Gap does not have an active traffic count location. Historical volumes for segments both upstream and downstream reveal very similar traffic conditions over the most recent three year period. Because the character of surrounding land uses is relatively consistent for each segment, traffic volumes were merely interpolated from the available sources at adjoining segments.

### 3.5 Internal-External Travel Patterns

As part of the overall CMP, understanding the relationships between travel on the highway which is linked to communities within the immediate area — such as Kamloops, Salmon Arm, Revelstoke, Sicamous and Golden— and travel that is generated to communities external to this section of the highway corridor — such as Vernon, Kelowna, Hope and the Lower Mainland — is an important consideration in terms of assessing potential future demands on the TCH. The Ministry's roadside surveys conducted at those stations identified in Table 3.1 provide a sample of the origins and destinations of vehicles on the highway. These surveys provide information regarding trip origin and destination for the survey day as well as for the overall trip, in cases where multi-day trips are encountered. These results were recorded and summarized for 50 zones, most of which are for those communities along the TCH and other parts of the province. Although the number of survey stations limits our understanding of internal traffic characteristics through the corridor, these internal patterns can be estimated assuming consistencies in externally related travel along the TCH.

For the purpose of this assignment, origin-destination (OD) travel patterns were aggregated into two groupings — internal and external zones — in order to identify any relationships between traffic on the highway to those activity centres surrounding the corridor versus those beyond the immediate area. These results are summarized in Table 3.8 for each of the five station locations examined along the TCH.

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**Table 3.8**

**Origin-Destination  
Survey Summary**

STATION	DAY <sup>(1)</sup>			TRIP <sup>(2)</sup>		
1. West of Monte Creek (July 1993)	I	X		I	X	
	I	45%	16%	I	42%	12%
	X	8%	31%	X	9%	37%
2. East of Tappen (August 1995)	n.a.			I	X	
	I			I	49%	14%
	X			X	12%	25%
3. East of Sicamous (August 1995)	n.a.			I	X	
	I			I	16%	12%
	X			X	8%	63%
4. Revelstoke (August 1993)	I	X		I	X	
	I	17%	25%	I	11%	15%
	X	13%	45%	X	18%	56%
5. Rogers Pass (August 1990)	I	X		n.a.		
	I	6%	19%			
	X	20%	55%			

*Notes:*

*(1) Origin-destination for survey day*

*(2) Origin-destination for entire trip if multi-day.*

*I — Internal trip generated from or to activity centres along the corridor within the study boundaries.*

*X — External trips generated from and/or to activity centres outside the corridor and study boundaries.*

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The results indicate that the origin-destination (OD) patterns are different for those stations east and west of Sicamous. In particular, the proportion of internal-to-internal travel west of Sicamous is significantly higher than to the east. In the eastern sections of the highway, external-to-external trips account for the largest portion of traffic surveyed. Based on the SADT volumes previously discussed, these OD patterns indicate that the communities in the western portion of the study area have a greater impact on the TCH than those to the east.

Using the assumptions described in Section 3.4 above, estimates of the 1996 SADT and AADT volumes were generated for each segment in the corridor. The OD information was then used to desegregate the total volumes into internal-internal, internal-external, external-internal and external-external for specific segments of the corridor. However, the OD survey information could not be extrapolated to the Kamloops area, because of the large influence of local traffic. The City's Travelsmart model was used to assist in the estimates of origins-destinations in this area. The SADT and AADT segment by segment summaries for 1996 are shown in Tables 3.9 and 3.10 respectively.

The volumes shown in bold face text indicate those segments for which origin-destination survey information exists. As demonstrated by these results, there is a significant variation in the internal traffic along the corridor. The internal volumes are considerably higher at the western end of the corridor around Kamloops, but are also high in the Salmon Arm area. Along many segments of the eastern half of the corridor, internal-internal trips are estimated to account for less than 1,000 trips/day. The external-external trips are lowest between Highways 97A and 97B. Many external trips destined for the Okanagan or even the Lower Mainland would leave the corridor at Highway 97A or 97B.

The AADT summary is shown in Table 3.10. The OD patterns are derived from summer traffic, however for the purpose of this assignment, the patterns have been directly translated to the AADT component. Additional origin-destination surveys outside the summer period would be needed to obtain more reliable AADT relationships.

These internal and external components of SADT and AADT volumes will be used as a basis for projecting future travel patterns along the TCH.



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**Table 3.9: 1996 SADT Summary**

	Segment Limits	1996 SADT	Trip Distribution Estimate			
			Internal to Internal	Internal to External	External to Internal	External to External
10	Afton to Columbia I/C	35,370	12,510	8,750	8,700	5,410
13	Columbia Street to Summit Drive	17,290	2,510	5,330	4,000	5,450
17	Summit Drive to Yellowhead	29,840	16,250	4,730	3,540	5,320
20	Yellowhead to Tanager	-1 27,430	15,640	4,650	3,000	4,140
30	Tanager to Kipp Road I/C	25,010	14,670	3,700	2,500	4,140
33	Kipp Road I/C to Tumbleweed	18,045	9,405	2,750	1,750	4,140
37	Tumbleweed to Highway 97	14,470	6,910	1,980	1,440	4,140
40	Highway 97 to Chase	9,900	2,660	2,000	1,500	3,740
50	Chase to Squilax	10,410	3,040	2,050	1,580	3,740
60	Squilax to Cobeaux	9,180	1,680	2,100	1,660	3,740
70	Cobeaux to Blind Bay	-2 12,080	4,425	2,175	1,740	3,740
80	Blind Bay to Salmon River Bridge	-7 14,985	7,340	2,100	1,800	3,745
90	Salmon River Bridge to Hwy 97B	15,810	8,260	2,000	1,800	3,750
100	Highway 97B to Canoe Beach	10,935	5,800	1,200	1,100	2,835
110	Canoe Beach to RW Bruhn	-7 7,270	2,617	945	872	2,835
120	RW Bruhn to Highway 97A	-1 8,908	4,200	1,000	870	2,835
130	Highway 97A to Kerr Road	-7 10,545	1,715	1,290	870	6,670
140	Kerr Road to Gravel Pit	-1 10,040	1,335	1,225	810	6,670
150	Gravel Pit to Malakwa	-1 9,540	970	1,150	750	6,670
160	Malakwa to Perry River	9,040	565	1,085	720	6,670
170	Perry River to Three Valley	-1 9,470	820	1,170	810	6,670
180	Three Valley to East Wood	-4 9,890	1,070	1,250	900	6,670
190	East Wood to Clanwilliam	-3 9,890	1,070	1,250	900	6,670
200	Clanwilliam to Big Eddy	-5 9,890	1,070	1,250	900	6,670
210	Big Eddy to Highway 23 S.	-5 9,890	1,070	1,250	900	6,670
220	Highway 23 S. to Highway 23 N.	-7 12,105	1,260	1,610	980	8,255
230	Highway 23 N. to Revelstoke East	8,900	203	751	700	7,245
240	Revelstoke East to Rev. Nat'l W.	-4 8,900	203	751	700	7,245
250	Rev. Nat'l W. to Rev. Nat'l E.	-4 8,900	203	751	700	7,245
260	Rev. Nat'l E. to Glac. Nat'l W.	-4 8,900	203	751	700	7,245
270	Glac. Nat'l W. to Glac Nat'l E.	-4 8,900	203	751	700	7,245
280	Glac Nat'l E. to Columbia River Bridge	-1 10,410	1,715	750	700	7,245
290	Columbia River Bridge to Anderson	10,711	1,915	800	750	7,245
300	Anderson to Highway 95	-6 9,940	1,145	800	750	7,245
310	Highway 95 to Goldenview	9,175	875	1,100	1,200	6,000
320	Goldenview to Yoho W.	-5 9,175	475	1,300	1,400	6,000
330	Yoho W. to Yoho E.	-5 9,175	475	1,300	1,400	6,000

Notes:

- 1 Averaged between available upstream and downstream SADTs.
- 2 Estimated from December 1997 Counts and reduced by 1.5% from 1997 to reach a 1996 estimate.
- 3 SADT not available for 1996. Estimated by applying SADT:AADT ratio for an adjacent segment to AADT estimate.
- 4 SADT assumed to be consistent with SADT for segment available to the east.
- 5 SADT assumed to be consistent with SADT for segment available to the west.
- 6 Averaged between available upstream and downstream SADTs.  
Additional counts should be undertaken to confirm estimates
- 7 Based on actual OD survey data

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**Table 3.10: 1996 AADT Summary**

	Segment Limits	1996 AADT	Trip Distribution Estimate			
			Internal to Internal	Internal to External	External to Internal	External to External
10	Afton to Columbia I/C	30,110	8,390	8,510	8,510	4,700
13	Columbia Street to Summit Drive	14,280	2,180	3,700	3,700	4,700
17	Summit Drive to Yellowhead	26,330	15,160	3,500	3,540	4,130
20	Yellowhead to Tanager	-1 24,510	15,295	3,000	3,000	3,215
30	Tanager to Kipp Road I/C	22,025	13,710	2,600	2,500	3,215
33	Kipp Road I/C to Tumbleweed	12,985	6,220	1,800	1,750	3,215
37	Tumbleweed to Highway 97	9,900	4,205	1,145	1,335	3,215
40	Highway 97 to Chase	6,800	2,150	1,250	900	2,500
50	Chase to Squilax	7,130	2,380	1,350	900	2,500
60	Squilax to Cobeaux	6,675	1,825	1,450	900	2,500
70	Cobeaux to Blind Bay	-2 8,290	3,340	1,500	950	2,500
80	Blind Bay to Salmon River Bridge	11,330	5,780	1,580	1,475	2,495
90	Salmon River Bridge to Hwy 97B	11,600	6,100	1,400	1,270	2,830
100	Highway 97B to Canoe Beach	9,760	4,260	1,200	900	3,400
110	Canoe Beach to RW Bruhn	5,020	2,700	865	380	1,075
120	RW Bruhn to Highway 97A	-1 5,870	2,120	830	490	2,430
130	Highway 97A to Kerr Road	6,720	1,540	800	600	3,780
140	Kerr Road to Gravel Pit	-1 6,100	1,680	720	520	3,180
150	Gravel Pit to Malakwa	-1 5,480	1,200	650	450	3,180
160	Malakwa to Perry River	4,855	695	590	390	3,180
170	Perry River to Three Valley	-1 5,430	830	700	500	3,400
180	Three Valley to East Wood	-4 5,995	1,200	750	550	3,495
190	East Wood to Clanwilliam	-3 5,995	1,200	750	550	3,495
200	Clanwilliam to Big Eddy	-5 5,995	1,200	750	550	3,495
210	Big Eddy to Highway 23 S.	-5 5,995	1,200	750	550	3,495
220	Highway 23 S. to Highway 23 N.	8,070	1,835	960	725	4,550
230	Highway 23 N. to Revelstoke East	5,150	200	730	700	3,520
240	Revelstoke East to Rev. Nat'l W.	-4 5,150	200	730	700	3,520
250	Rev. Nat'l W. to Rev. Nat'l E.	-4 5,150	200	730	700	3,520
260	Rev. Nat'l E. to Glac. Nat'l W.	-4 5,150	200	730	700	3,520
270	Glac. Nat'l W. to Glac Nat'l E.	-1 5,150	200	730	700	3,520
280	Glac Nat'l E. to Columbia River Bridge	-1 5,525	280	880	880	3,480
290	Columbia River Bridge to Anderson	6,065	375	1,105	1,105	3,480
300	Anderson to Highway 95	-6 5,360	340	1,005	1,015	3,000
310	Highway 95 to Goldenview	4,655	280	900	920	2,555
320	Goldenview to Yoho W.	-5 4,655	280	900	920	2,555
330	Yoho W. to Yoho E.	-5 4,655	280	900	920	2,555

Notes:

- 1 Averaged between available upstream and downstream AADTs.
  - 2 Estimated from December 1997 Counts and reduced by 1.5% from 1997 to reach a 1996 estimate.
  - 3 Estimated by applying SADT:AADT ratio for an adjacent segment to AADT estimate.
  - 4 AADT assumed to be consistent with AADT for segment available to the east.
  - 5 AADT assumed to be consistent with AADT for segment available to the west.
  - 6 Averaged between available upstream and downstream AADTs.
- Additional counts should be undertaken to confirm estimates

## 4 Traffic Forecasts

This section of the report presents the individual components of the projected 25-year traffic volumes along the various segments of the TCH in 5-year increments. These components include externally generated travel and internal trips within and between communities immediately adjacent to the TCH corridor from Kamloops to the Alberta border.

### 4.1 External Traffic Forecasts

As part of the CMP study process, Actran Consultants were retained by the Ministry to prepare 25-year traffic forecasts along the subject section of the TCH for vehicles that reach points outside the corridor. Within the context of the components of vehicle travel, these trips would include the external-to-external, internal-to-external, and external-to-internal. The external traffic forecasts were developed from the trip purpose and OD data as well as the changes anticipated in those key factors of externally generated vehicle trips on the TCH. This OD information was considered more suitable for estimating externally generated traffic. The forecast process was separated into three stages as follows:

1. Build origin-destination matrices
2. Develop forecasts for each trip purpose
3. Prepare composite external traffic forecasts

The growth rates assigned to each trip type are highlighted below:

- **Work** — expanded in proportion to population growth within the corridor which is approximately 60% over the next 25 years. This approach assumes that work trips are generated largely by population within the corridor.
- **Shopping** — forecasts are assumed to increase in proportion to population growth in the corridor which is about 60% over the next 25 years
- **Personal Business** — 60% of this trip type are to or from the corridor communities which is anticipated to grow at the same rate

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as local population. The remaining proportion of personal business trips are estimated from growth rates projected for the central and northern Okanagan areas (70% over the next 25 years) and the entire province (50% over the next 25 years).

- **One-Day Social / Recreation** — given the significant volume of one-day social and recreational trips that occur to communities within the corridor as previously described, this component of the traffic is projected based on growth in population within the corridor.
- **Multi-day** — forecasts are applied to the individual trip ends based on Alberta, Lower Mainland, corridor and B.C. population estimates.
- **Commercial Trips** — factors of growth are applied to the vehicle type as follows: buses grow at a rate consistent with multi-day travel; resource industry trucking in direct proportion to the timber supply forecasts; and general freight projections consistent with provincial population growth.

Table 4.1 below summarizes the external estimates of SADT volumes provided in the AcTran report.

**Table 4.1: External SADT Summary <sup>(1)</sup>**

Segments	External SADT						25-year Increase
	1996	2001	2006	2011	2016	2021	
10 to 17	10,170	11,600	12,500	13,500	14,400	15,400	47%
20 to 37	9,070	9,900	10,700	11,600	12,400	13,200	46%
40 to 100	7,580	8,300	8,900	9,600	10,300	10,900	44%
110 to 120	6,300	8,800	7,400	7,900	8,400	8,900	41%
130 to 220	8,570	9,300	10,000	10,800	11,500	12,200	42%
230 to 290	8,250	9,000	9,600	10,300	11,000	11,700	41%
290 to 330	8,100	8,800	9,500	10,100	10,800	11,400	41%

<sup>(1)</sup> Source: Externally-Generated Activity in the Trans-Canada Corridor, Actran Consultants, 1998

These results indicate that the 1996 external SADT volumes are generally consistent with the pattern summarized in Table 3.9, except in the Kamloops area. As previously indicated, travel patterns in this area could not be as easily defined from Ministry OD data. The projected 25-year growth levels in external traffic along the TCH are forecast to increase by approximately 45% to 46%. These growth rates are applied to the individual components of external traffic for each segment and are summarized in Table 4.2.

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**Table 4.2: External SADT Projections**

Segment	1996 SADT	External Trips						25-Year Increase
		1996 (Table 3.9)	2001	2006	2011	2016	2021	
10	34,500	22,550	24,329	26,248	28,318	30,552	32,961	46%
13	17,290	14,780	15,946	17,204	18,561	20,025	21,604	45%
17	31,900	13,590	14,662	15,818	17,066	18,412	19,865	46%
20	28,460	11,790	12,720	13,723	14,806	15,974	17,233	45%
30	25,010	10,340	11,156	12,036	12,985	14,009	15,114	46%
33	18,045	8,640	9,321	10,057	10,850	11,706	12,629	46%
37	14,470	7,560	8,156	8,800	9,494	10,243	11,050	46%
40	9,900	7,240	7,803	8,411	9,065	9,770	10,531	45%
50	10,410	7,370	7,943	8,562	9,228	9,946	10,720	45%
60	9,180	7,500	8,084	8,713	9,391	10,121	10,909	45%
70	12,080	7,655	8,251	8,893	9,585	10,331	11,134	45%
80	14,985	7,645	8,240	8,881	9,572	10,317	11,120	45%
90	15,810	7,550	8,108	8,708	9,352	10,043	10,786	45%
100	10,935	5,135	5,515	5,922	6,360	6,831	7,336	45%
110	7,270	4,652	4,996	5,365	5,762	6,188	6,646	43%
120	8,908	4,705	5,053	5,427	5,828	6,259	6,722	43%
130	10,545	8,830	9,498	10,217	10,991	11,823	12,718	44%
140	10,040	8,705	9,364	10,073	10,835	11,655	12,537	44%
150	9,540	8,570	9,219	9,916	10,667	11,475	12,343	44%
160	9,040	8,475	9,116	9,807	10,549	11,347	12,206	44%
170	9,470	8,650	9,305	10,009	10,767	11,582	12,458	44%
180	9,890	8,820	9,488	10,206	10,978	11,809	12,703	44%
190	9,890	8,820	9,488	10,206	10,978	11,809	12,703	44%
200	9,890	8,820	9,488	10,206	10,978	11,809	12,703	44%
210	9,890	8,820	9,488	10,206	10,978	11,809	12,703	44%
220	12,105	10,845	11,649	12,512	13,439	14,435	15,505	43%
230	8,900	8,697	9,342	10,034	10,777	11,576	12,434	43%
240	8,900	8,697	9,342	10,034	10,777	11,576	12,434	43%
250	8,900	8,697	9,342	10,034	10,777	11,576	12,434	43%
260	8,900	8,697	9,342	10,034	10,777	11,576	12,434	43%
270	8,900	8,697	9,342	10,034	10,777	11,576	12,434	43%
280	10,410	8,695	9,340	10,032	10,775	11,574	12,432	43%
290	10,711	8,795	9,447	10,147	10,899	11,707	12,575	42%
300	9,940	8,795	9,447	10,147	10,899	11,707	12,575	42%
310	9,175	8,300	8,911	9,566	10,270	11,026	11,837	42%
320	9,175	8,700	9,340	10,027	10,765	11,557	12,407	42%
330	9,175	8,700	9,340	10,027	10,765	11,557	12,407	42%

## 4.2 Internal Traffic Forecasts

Internal trips include all vehicle traffic on the TCH travelling within and between communities immediately adjacent to the corridor, from Kamloops to the Alberta border. While the origin-destination data were only available for a few segments of the corridor, internal traffic was estimated based on information related to the external trips. This section of the report provides 25-year forecasts for the internal traffic on the TCH based on projected growth levels within the local communities as well as a continuation of historical trends.

### 4.2.1 Historical Relationships

Internal traffic on the TCH can be projected based on a continuation of historical trends and/or relationship with anticipated demographic or economic changes along the corridor. In either case, the historical relationships between these variables should be considered as a basis for projecting traffic on the TCH. This section of the report examines the strength in the relationship between historical traffic conditions and time — referred to as the *trend scenario* — as well as with population levels of adjacent communities.

#### Trend Patterns

Throughout much of the TCH, daily traffic volumes have increased dramatically over the last 10 to 20 years. These patterns are generally reflective of several factors such as population and employment growth in local communities, B.C. and other parts of Canada, as well as increased tourism, recreation and other economic indicators. A *trend growth scenario* would imply that these growth patterns would continue for the next 25 years. This scenario would assume that the growth rate along the TCH has been relatively constant over time and that there is strength in this relationship.

Tables 4.3 and 4.4 below summarize the historical AADT and SADT growth rates for several sections along the TCH, and provides the correlation coefficient (R-squared value) from the linear regression analysis depicting the strength of the relationship with the independent variable of time. Where traffic volumes for a particular year were not available, an estimate of the volume was made by interpolating between known values.

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**Table 4.3: Historical AADT, 1988 to 1996**

Segment	1988	1989	1990	1991	1992	1993	1994	1995	1996	Average Annual Growth Rate	Pct. Growth 1988- 1996	R <sup>2</sup>
10	19275	22554	20424	21718	23611	23560	27210	28158	30000	6.0%	55.6%	0.88
30	16763	17876	18531	19185	18793	21654	21302	21664	22025	3.6%	31.4%	0.53
37	8052	8556	8566	8042	8480	9130	9773	10106	9901	2.7%	23.0%	0.79
50	5263	5555	5567	5501	5943	6619	6861	7689	7133	4.1%	35.5%	0.87
80	7925	8525	8155	8484	8820	11240	11992	10944	11334	5.0%	43.0%	0.78
90	8716	9375	9481	9353	9728	11036	11662	12268	11606	3.8%	33.2%	0.87
100	6286	6483	6680	6992	6624	7458	8292	9025	9758	5.8%	55.2%	0.85
110	3834	4386	4103	3782	4070	3845	4476	5107	5018	3.9%	30.9%	0.49
220	6502	5958	5413	6170	6497	6537	7528	7799	8070	3.1%	24.1%	0.61
230	4597	5539	5023	4506	4529	4551	4574	4863	5151	1.8%	12.1%	0.47
290	6820	5983	4678	4453	4607	4649	5335	5700	6064	-0.8%	-11.1%	0.05
Average										3.5%	30.3%	

**Table 4.4: Historical SADT, 1988 to 1996**

Segment	1988	1989	1990	1991	1992	1993	1994	1995	1996	Average Annual Growth Rate	Pct. Growth 1989-1996	R <sup>2</sup>
10	21703	23712	25720	26469	26591	30141	31639	32443	34500	6.0%	59.0%	0.78
30	18412	20842	21030	21217	21031	25152	26552	25780	25008	4.2%	35.8%	0.4
37	12057	13074	13212	11966	12351	13384	13988	14380	14467	2.4%	20.0%	0.63
40	8738	8310	8313	8442	8648	9276	9589	9732	9902	1.6%	13.3%	0.77
50	8440	8266	8587	8879	8656	9702	10847	10057	10406	2.8%	23.3%	0.79
80	10851	12358	12114	12324	12356	14171	15526	14665	14984	4.3%	38.1%	0.84
90	12597	13469	13156	13477	13459	14419	14717	15989	15811	3.0%	25.5%	0.88
100	9084	9253	9422	9810	9176	10117	11057	10996	10934	2.6%	20.4%	0.74
110	5846	6344	6357	6886	6582	7232	7317	7401	7270	2.9%	24.4%	0.85
220	11081	11005	10389	10875	10873	12249	11393	11749	12105	1.3%	9.2%	0.47
230	7859	8388	8303	8217	8408	8598	8789	8844	8899	1.6%	13.2%	0.83
290	10018	9059	8974	8470	8652	9333	10260	10486	10711	1.0%	6.9%	0.24
Average										2.8%	24.1%	

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These results illustrate several key patterns that are described as follows:

- Compound average annual growth between 1988 and 1996 for each of the segments identified is 2.8% for SADT and 3.5% for AADT. Previous transportation studies of the TCH indicated that the historical AADT levels in the western sections of the corridor increased 3.1% per year between 1970 and 1988 (*Highway 1 Planning Study, Phase 1 — Capacity Analysis Kamloops to Revelstoke, 1991*). In the eastern sections of the corridor, AADT levels increased at an average rate of 1.87% between 1971 and 1989 (*TransCanada Highway Capacity Study, Revelstoke to Alberta Border, 1991*). Although there are strong consistencies in these results, they would also suggest that the variable rates in growth should be reflected in the traffic forecasts, rather than applying an average proportion to the entire corridor. It is important to recognize that the average annual growth rate for the Design Hour Volumes (DHV) between 1981 and 1991 was reportedly 3.1% (*Highway 1 Passing Lane Study, Monte Creek to Revelstoke*). This would suggest that the growth factors for SADTs or AADTs are relatively consistent with DHV throughout the corridor.
- The average annual growth rates recorded between 1988 and 1996 vary throughout the subject section of the TCH. The rate of growth in the western section of the corridor in the Kamloops area was highest throughout the corridor. The average annual SADT growth rates for Segments 10 and 30 are 6.0% and 4.2% respectively (average of 5.1%) and 6.0% and 3.6 % for AADT rates (average 4.8%).
- Between Segments 37 and 110, the rate of average annual growth ranges between 2.4% and 5.2% for SADT (average of 3.2%) and from 2.7% and 9.3% for AADT (average of 4.2%). It would be reasonable to assume that the transition in growth rates from the Kamloops area could principally be attributed differing levels of population and employment growth patterns for communities within and surrounding the TCH. Further to the east, Segments 220 to 290 experienced average annual growth rates ranging between 1.0% to 1.6% for the SADT (average of 1.3%) and between -0.8% to 6.8% for the AADT (average of 1.4%). This pattern would generally suggest that the eastern sections of the corridor may be more affected by external tourism travel, and less by growth in the local area.



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Throughout the corridor, the growth in traffic volumes was relatively slow between 1988 and 1992, but has increased dramatically since then.

- Based on the results of the regression analysis, there appears to be a moderately strong correlation between the independent variable of year and SADT as well as AADT. This would suggest that the trend scenario could feasibly be a reliable method of forecasting travel on the TCH.

In summary, the average annual growth rates may be used as a basis for forecasting highway traffic as part of a trend scenario. Because of the variable levels of average growth for the individual segments, average conditions may be applied to the internal components of travel for SADT as follows:

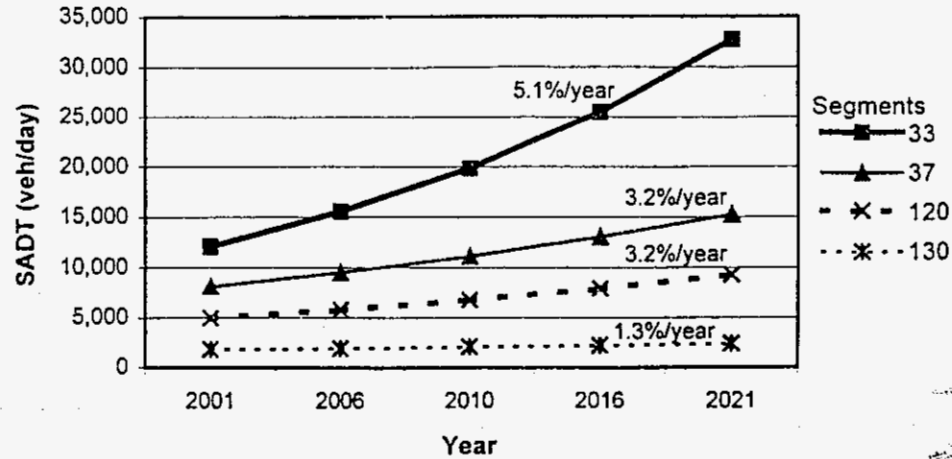
1. Segments 10 to 33 — average annual growth at 5.1%
2. Segments 37 to 120 — average annual growth at 3.2%
3. Segments 130 to 330 — average annual growth at 1.3%

For AADT, the projected annual growth rates for internal travel have been applied as follows:

1. Segments 10 to 33 — average annual growth at 4.8%
2. Segments 37 to 120 — average annual growth at 4.2%
3. Segments 130 to 330 — average annual growth at 1.4%

It is important to recognize the impact of varied growth rates between segments as illustrated in Figure 4.1. This figure illustrates the projected internal SADT volumes at the adjoining segments with different growth rates.

**Figure 4.1: Internal SADT Growth at Selected Adjacent Corridors**



The results indicate that variable SADT growth rates would have a significant effect on projected internal volumes between Segments 33 and 37. The projected difference in internal volumes is over 15,000 vehicles/day. This abrupt change in growth is likely not realistic. Therefore, the SADT growth rates on Segments 20, 30 and 33 have been modified to reflect a transition in growth rates. The following rates are used to make the transition between SADT growth rates smoother.

- Segment 20 — 4.5%
- Segment 30 — 4.0%
- Segment 33 — 3.7%

No transition is recommended between Segments 120 and 130. The boundary between these segments is Highway 97A, which will have a significant effect on the growth rates. The projected change in volumes between these segments appears reasonable.

### Population and Traffic Growth

An alternative comparison may be made between historical traffic volumes and population trends in the local communities, regions and the province as a whole. Tables 4.5 and 4.6 summarize the strength of the relationships between historical SADT and AADT patterns with changes

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to population for the province, regional districts and municipalities throughout the corridor.

Specific observations about the patterns are highlighted below.

- Population growth for the Province was approximately 2.6% annually between 1986 and 1996. Most municipalities at the western end of the corridor had similar growth rates ranging from 2.3% in Kamloops to 3.0% in Salmon Arm for the same period. The Thompson-Nicola Regional District and the Columbia Shuswap Regional District both experienced growth rates comparable to the provincial rate, but slightly lower (2.2% annually for the TNRD and 2.1% for the CSRD). Growth rates at the eastern end of the corridor were substantially lower. Revelstoke experienced negative growth between 1986 and 1991, and returned to approximately 1986 levels by 1996. The growth rate in Golden averaged 1.1% annually.
- The relationship of traffic volumes to local population through the western end of the corridor, specifically in the vicinity of Kamloops and Chase, is strong with  $R^2$  values between 0.9 and 1.0. The  $R^2$  value for segment 40 is slightly lower. Segment 40 is the most rural segment in this area. As Kamloops area growth expands east in the future, there will probably be a stronger relationship along this segment.
- From Blind Bay to Salmon Arm, the relationship is not as strong. The traffic in this area has grown at a faster rate than the CSRD population. This pattern might be attributed to local population growth in unincorporated areas which may show stronger relationships to traffic growth than is the case with CSRD population. High local population and traffic volume growth would largely be a result of growth associated with Salmon Arm extending beyond its boundaries and growth in the North Shuswap area (Blind Bay). Through Salmon Arm and Sicamous, the relationship between traffic volume and local population is strong.
- The Revelstoke population seems to have little effect on the TCH traffic, except in Segment 220. The slight decrease in population was reflected in this Segment.

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**Table 4.3: Comparison of Historical SADT and Population**

	Segment Limits (Regional/Municipal)  Area	1988	1991	1996	R-Squared Values		
					vs. Provincial Pop.	vs. Reg. Dist. Pop.	vs. Municipal Pop.
	Provincial Population	3,042,845	3,282,060	3,724,500	-	-	-
	TNRD Population	99,835	104,385	118,800	-	-	-
	CSRD Population	40,615	41,665	48,115	-	-	-
	City of Kamloops Population	63,885	67,055	76,395	-	-	-
	Chase Population	1,995	2,085	2,460	-	-	-
	Salmon Arm Population	11,565	12,115	14,665	-	-	-
	Sicamous Population	2,260	2,500	2,825	-	-	-
	Revelstoke Population	8,060	7,730	8,045	-	-	-
	Golden Population	3,640	3,720	3,970	-	-	-
10	Afton to Columbia I/C (2,4)	21,705	26,470	34,500	1.00	0.98	0.98
13	Columbia St. to Summit Dr. (2,4)	10,880	13,265	17,290	1.00	0.98	0.98
17	Summit Drive to Yellowhead (2,4)	20,075	24,475	31,900	1.00	0.98	0.98
20	Yellowhead to Tanager	17,910	21,836	28,460	1.00	0.98	0.98
30	Tanager to Kipp Road I/C	18,410	21,215	25,010	0.99	0.96	0.96
33	Kipp Road I/C to Tumbleweed	13,285	15,445	18,045	0.99	0.95	0.95
37	Tumbleweed to Highway 97	12,055	11,965	14,470	0.86	0.92	0.92
40	Highway 97 to Chase (2,5)	8,740	8,410	9,900	0.73	0.82	0.82
50	Chase to Squilax (2,5)	8,440	8,879	10,410	0.98	1.00	1.00
60	Squilax to Cobbeaux	6,615	8,880	9,180	0.69	0.59	0.59
70	Cobbeaux to Blind Bay	8,705	11,685	12,080	0.69	0.59	0.59
80	Blind Bay to Salmon River Bridge	10,798	14,495	14,985	0.69	0.48	0.51
90	Salmon River Bridge to Hwy. 97B	12,595	13,475	15,810	0.99	0.98	0.99
100	Highway 97B to Canoe Beach	9,085	9,810	10,935	1.00	0.93	0.95
110	Canoe Beach to RW Bruhn	5,845	6,885	7,270	0.83	0.63	0.88
120	RW Bruhn to Highway 97A	7,160	8,435	8,910	0.83	0.63	0.89
130	Highway 97A to Kerr Road	8,475	9,985	10,545	0.83	0.63	0.89
140	Kerr Road to Gravel Pit	8,070	9,505	10,040	0.83	0.63	-
150	Gravel Pit to Malakwa	7,670	9,030	9,540	0.83	0.63	-
160	Malakwa to Perry River	7,270	8,185	9,040	0.96	0.84	-
170	Perry River to Three Valley	7,615	8,575	9,470	0.96	0.84	-
180	Three Valley to East Wood	7,955	8,955	9,890	0.96	0.84	-
190	East Wood to Clanwilliam	7,955	8,955	9,890	0.96	0.84	-
200	Clanwilliam to Big Eddy	7,955	8,955	9,890	0.96	0.84	-
210	Big Eddy to Highway 23 S.	7,955	8,955	9,890	0.96	0.84	0.00
220	Highway 23 S. to Highway 23 N.	11,080	10,875	12,105	0.76	0.92	0.36
230	Highway 23 N. to Revelstoke East	7,860	8,215	8,900	1.00	0.96	0.02
240	Revelstoke East to Rev. Nat'l W.	7,860	8,215	8,900	1.00	0.96	-
250	Rev. Nat'l W. to Rev. Nat'l E.	7,860	8,215	8,900	1.00	0.96	-
260	Rev. Nat'l E. to Glac. Nat'l W.	7,860	8,215	8,900	1.00	0.96	-
270	Glac. Nat'l W. to Glac Nat'l E.	7,860	8,215	8,900	1.00	0.96	-
280	Glac Nat'l E. to Columbia R. Br.	9,195	9,610	10,410	1.00	0.96	-
290	Columbia R. Br. to Anderson	9,825	8,470	10,710	0.29	0.51	0.41
300	Anderson to Highway 95	9,115	7,860	9,940	0.30	0.51	0.41
310	Highway 95 to Goldenview	8,413	7,415	9,175	0.33	0.55	0.45
320	Goldenview to Yoho W.	8,413	7,415	9,175	0.33	0.55	-
330	Yoho W. to Yoho E.	6,970	7,415	9,175	0.97	1.00	-

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**Table 4.4: Comparison of Historical AADT and Population**

	Segment Limits	1988	1991	1996	R-Squared Values		
					vs. Provincial Pop.	vs. Reg. Dist. Pop.	vs. Municipal Pop.
	Provincial Population	3,042,845	3,282,060	3,724,500	1.00		
	TNRD Population	99,835	104,385	118,800	0.99	1.00	
	CSRD Population	40,615	41,665	48,115	0.95	1.00	
	City of Kamloops Population	63,885	67,055	76,395	0.99	1.00	1.00
	Chase Population	1,995	2,085	2,460	0.97	1.00	1.00
	Salmon Arm Population	11,565	12,115	14,665	0.97	1.00	1.00
	Sicamous Population	2,260	2,500	2,825	0.99	0.91	1.00
	Revelstoke Population	8,060	7,730	8,045	0.02	0.12	1.00
	Golden Population	3,640	3,720	3,970	0.99	0.99	1.00
10	Afton to Columbia I/C	21,705	26,470	30,000	0.94	0.87	0.87
13	Columbia Street to Summit Drive	10,332	12,600	14,280	0.94	0.87	0.87
17	Summit Drive to Yellowhead	19,535	23,823	27,000	0.94	0.87	0.87
20	Yellowhead to Tanager	17,733	21,626	24,510	0.94	0.87	0.87
30	Tanager to Kipp Road I/C	16,795	19,185	22,025	0.99	0.95	0.95
33	Kipp Road I/C to Tumbleweed	9,902	11,311	12,985	0.99	0.95	0.95
37	Tumbleweed to Highway 97	8,050	8,040	9,900	0.88	0.94	0.94
40	Highway 97 to Chase	5,835	5,670	6,800	0.78	0.86	0.86
50	Chase to Squilax	5,265	5,500	7,130	0.94	0.98	0.98
60	Squilax to Cobeaux	4,695	5,335	6,675	1.00	0.99	0.99
70	Cobeaux to Blind Bay	5,831	6,526	8,290	1.00	0.99	0.99
80	Blind Bay to Salmon River Bridge	7,969	9,056	11,330	1.00	0.96	0.98
90	Salmon River Bridge to Hwy. 97B	8,715	9,355	11,600	0.98	0.99	1.00
100	Highway 97B to Canoe Beach	6,285	6,990	9,760	0.97	1.00	1.00
110	Canoe Beach to RW Bruhn	3,835	3,780	5,020	0.85	0.97	0.79
120	RW Bruhn to Highway 97A	4,484	4,420	5,870	0.85	0.97	0.79
130	Highway 97A to Kerr Road	7,180	7,930	6,720	0.28	0.49	0.21
140	Kerr Road to Gravel Pit	6,518	7,198	6,100	0.28	0.49	
150	Gravel Pit to Malakwa	5,855	6,467	5,480	0.28	0.49	
160	Malakwa to Perry River	5,187	4,360	4,855	0.06	0.00	
170	Perry River to Three Valley	5,802	4,876	5,430	0.06	0.00	
180	Three Valley to East Wood	6,405	5,384	5,995	0.06	0.00	
190	East Wood to Clanwilliam	6,405	5,384	5,995	0.06	0.00	
200	Clanwilliam to Big Eddy	6,405	5,384	5,995	0.06	0.00	
210	Big Eddy to Highway 23 S.	6,405	5,384	5,995	0.06	0.00	0.87
220	Highway 23 S. to Highway 23 N.	6,500	6,170	8,070	0.76	0.92	0.36
230	Highway 23 N. to Revelstoke East	7,860	8,215	5,150	0.80	0.95	0.31
240	Revelstoke East to Rev. Nat'l W.	7,860	8,215	5,150	0.80	0.95	
250	Rev. Nat'l W. to Rev. Nat'l E.	7,860	8,215	5,150	0.80	0.95	
260	Rev. Nat'l E. to Glac. Nat'l W.	7,860	8,215	5,150	0.80	0.95	
270	Glac. Nat'l W. to Glac Nat'l E.	7,860	8,215	5,150	0.80	0.95	
280	Glac Nat'l E. to Columbia R. Br.	8,432	8,813	5,525	0.80	0.95	
290	Columbia R. Br. to Anderson	6,820	4,455	6,065	0.02	0.01	0.00
300	Anderson to Highway 95	6,027	3,937	5,360	0.02	0.01	0.00
310	Highway 95 to Goldenview	5,234	3,831	4,655	0.06	0.00	0.02
320	Goldenview to Yoho W.	5,234	3,831	4,655	0.06	0.00	
330	Yoho W. to Yoho E.	4,063	3,831	4,655	0.65	0.75	

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- East of Revelstoke, the relationship between CSRD population and traffic appears to be strong. There is very little development along the highway, thus the local population likely has little effect on traffic in this area. The strong relationship is more likely coincidence than an indication of high correlation.
- Around Golden, the relationship between local, regional or provincial population and traffic volumes is generally weaker than other parts of the corridor. Through this area, daily traffic volumes have historically increased at approximately 1.0% per year.

Overall, the correlation between population changes at the local, regional and provincial scales with daily traffic volumes on the TCH is relatively strong, except in the eastern sections of the corridor where growth in traffic is approximately 1.0% per year. Through this section of the corridor, external factors have the greatest impact on daily traffic volumes. These relationships would suggest that population-based projections are a suitable method of forecasting internally generated travel on the TCH. The population-based projections are discussed further in the next section of the report.

## 4.2.2 Internal Traffic Forecasts

Forecasts of internal traffic on the TCH are presented in this section for the trend and population-based growth scenarios.

### Trend Scenario

Representative historical growth rates were applied to the internal-internal traffic as described in Section 3.1.1 above. Tables 4.7 and 4.8 summarize the projected 25 year SADT and AADT volumes respectively for internally generated trips. These results indicate that internally generated traffic on the TCH would increase anywhere from approximately 40% to 250% over the next 25 years based on a trend growth scenario. The most significant growth would occur in the western segments of the corridor between Kamloops and Sicamous.

## Population Based Forecasts

As part of the Community Impact and Development Study, population projections for a high and low growth scenario were developed based on the B.C. Stats P.E.O.P.L.E. projections. These results will be documented in a separate report. Table 4.9 below summarizes the high and low annual population forecasts as they are applied to the internally generated traffic along each corridor segment for the next 25 years. It should be noted that growth projections along Segments 40 to 50 and 140 to 330 are based on regional population forecasts, for which there is only one growth rate established. The table also provides most probable growth projections for each segment based on the population forecasts, as well as local knowledge of growth patterns and traffic forecasts. The most probable growth rate along the TCH in the Kamloops area is reportedly 2.4% and 1.8% for Segments 10 to 17 and from Segments 20 to 37 respectively. These estimates are based on the forecasts in traffic on the TCH produced from the City of Kamloops transportation model. Other most probable rates are essentially an average condition between the high and low growth scenarios. In general, these growth rates would suggest that internal and external traffic on the TCH are projected to grow at approximately the same rates over the next 25 years.

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**Table 4.7:  
Trend Growth Scenario –  
Internal Internal SADT Forecasts**

Segment	1996 SADT	Internal to Internal Traffic	Projected Internal-Internal Traffic						
			Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	12,510	5.1%	16,050	20,592	26,419	33,895	43,487	248%
13	17,290	2,510	5.1%	3,220	4,132	5,301	6,801	8,725	248%
17	29,840	16,250	5.1%	20,848	26,748	34,317	44,029	56,488	248%
20	27,430	15,640	4.5%	19,490	24,288	30,268	37,719	47,005	201%
30	25,010	14,670	4.0%	17,848	21,715	26,420	32,144	39,108	167%
33	18,045	9,405	3.7%	11,279	13,525	16,220	19,451	23,325	248%
37	14,470	6,910	3.2%	8,093	9,478	11,100	12,999	15,224	120%
40	9,900	2,660	3.2%	3,115	3,648	4,273	5,004	5,860	120%
50	10,410	3,040	3.2%	3,560	4,170	4,883	5,719	6,698	120%
60	9,180	1,680	3.2%	1,968	2,304	2,699	3,160	3,701	120%
70	12,080	4,425	3.2%	5,182	6,069	7,108	8,324	9,749	120%
80	14,985	7,340	3.2%	8,596	10,067	11,790	13,808	16,171	120%
90	15,810	8,260	3.2%	9,674	11,329	13,268	15,539	18,198	120%
100	10,935	5,800	3.2%	6,793	7,955	9,317	10,911	12,778	120%
110	7,270	2,617	3.2%	3,065	3,589	4,204	4,923	5,766	120%
120	8,908	4,200	3.2%	4,919	5,761	6,746	7,901	9,253	120%
130	10,545	1,715	1.3%	1,830	1,953	2,085	2,225	2,374	38%
140	10,040	1,335	1.3%	1,425	1,521	1,623	1,732	1,848	38%
150	9,540	970	1.3%	1,035	1,105	1,179	1,258	1,343	38%
160	9,040	565	1.3%	603	644	687	733	782	38%
170	9,470	820	1.3%	875	934	997	1,064	1,135	38%
180	9,890	1,070	1.3%	1,142	1,219	1,301	1,388	1,481	38%
190	9,890	1,070	1.3%	1,142	1,219	1,301	1,388	1,481	38%
200	9,890	1,070	1.3%	1,142	1,219	1,301	1,388	1,481	38%
210	9,890	1,070	1.3%	1,142	1,219	1,301	1,388	1,481	38%
220	12,105	1,260	1.3%	1,345	1,435	1,532	1,635	1,745	38%
230	8,900	203	1.3%	217	231	247	263	281	38%
240	8,900	203	1.3%	217	231	247	263	281	38%
250	8,900	203	1.3%	217	231	247	263	281	38%
260	8,900	203	1.3%	217	231	247	263	281	38%
270	8,900	203	1.3%	217	231	247	263	281	38%
280	10,410	1,715	1.3%	1,830	1,953	2,085	2,225	2,374	38%
290	10,711	1,915	1.3%	2,044	2,181	2,328	2,484	2,651	38%
300	9,940	1,145	1.3%	1,222	1,304	1,392	1,485	1,585	38%
310	9,175	875	1.3%	934	997	1,064	1,135	1,211	38%
320	9,175	475	1.3%	507	541	577	616	658	38%
330	9,175	475	1.3%	507	541	577	616	658	38%



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**Table 4.8:  
Trend Growth Scenario –  
Internal Internal AADT Forecasts**

	1996 AADT	Internal to Internal	Projected Internal-Internal Traffic						
			Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	30,110	8,390	4.8%	10,601	13,396	16,926	21,387	27,025	222%
13	14,280	2,180	4.8%	2,755	3,481	4,398	5,557	7,022	222%
17	26,330	15,160	4.8%	19,156	24,205	30,584	38,645	48,831	222%
20	24,510	15,295	4.8%	19,326	24,420	30,857	38,989	49,266	222%
30	22,025	13,710	4.8%	17,324	21,890	27,659	34,949	44,160	222%
33	12,985	6,220	4.8%	7,859	9,931	12,548	15,856	20,035	222%
37	9,900	4,205	4.2%	5,168	6,351	7,806	9,593	11,790	180%
40	6,800	2,150	4.2%	2,642	3,247	3,991	4,905	6,028	180%
50	7,130	2,380	4.2%	2,925	3,595	4,418	5,430	6,673	180%
60	6,675	1,825	4.2%	2,243	2,756	3,388	4,163	5,117	180%
70	8,290	3,340	4.2%	4,105	5,045	6,200	7,620	9,364	180%
80	11,330	5,780	4.2%	7,104	8,730	10,729	13,186	16,206	180%
90	11,600	6,100	4.2%	7,497	9,213	11,323	13,916	17,103	180%
100	9,760	4,260	4.2%	5,235	6,434	7,908	9,718	11,944	180%
110	5,020	2,700	4.2%	3,318	4,078	5,012	6,160	7,570	180%
120	5,870	2,120	4.2%	2,605	3,202	3,935	4,836	5,944	180%
130	6,720	1,540	1.4%	1,648	1,763	1,886	2,018	2,159	40%
140	6,100	1,680	1.4%	1,797	1,923	2,057	2,201	2,355	40%
150	5,480	1,200	1.4%	1,284	1,374	1,470	1,572	1,682	40%
160	4,855	695	1.4%	744	796	851	911	974	40%
170	5,430	830	1.4%	888	950	1,016	1,087	1,163	40%
180	5,995	1,200	1.4%	1,284	1,374	1,470	1,572	1,682	40%
190	5,995	1,200	1.4%	1,284	1,374	1,470	1,572	1,682	40%
200	5,995	1,200	1.4%	1,284	1,374	1,470	1,572	1,682	40%
210	5,995	1,200	1.4%	1,284	1,374	1,470	1,572	1,682	40%
220	8,070	1,835	1.4%	1,963	2,100	2,247	2,404	2,572	40%
230	5,150	200	1.4%	214	229	245	262	280	40%
240	5,150	200	1.4%	214	229	245	262	280	40%
250	5,150	200	1.4%	214	229	245	262	280	40%
260	5,150	200	1.4%	214	229	245	262	280	40%
270	5,150	200	1.4%	214	229	245	262	280	40%
280	5,525	280	1.4%	300	320	343	367	392	40%
290	6,065	375	1.4%	401	429	459	491	526	40%
300	5,360	340	1.4%	364	389	416	445	477	40%
310	4,655	280	1.4%	300	320	343	367	392	40%
320	4,655	280	1.4%	300	320	343	367	392	40%
330	4,655	280	1.4%	300	320	343	367	392	40%

**Table 4.9:  
25 Year Population-based Growth Scenarios**

Segments	Population Scenarios (Annual Rate)		Most Probable Traffic Growth	
	High	Low	Annual Rate	25-Year Growth
10 – 17	2.4%	1.5%	2.4%	81%
20 – 37	1.8%	1.5%	1.8%	56%
40 – 50	1.8%	1.8%	1.8%	56%
60, 80 – 100	2.5%	1.5%	2.0%	64%
70	3.5%	1.5%	2.0%	64%
110 – 130	2.5%	1.5%	2.0%	64%
140 – 330	1.4%	1.4%	1.4%	40%

The 25 year internal to internal SADT and AADT forecasts for the high, low and most probable growth scenarios are provided in Appendix D.

### 4.3 Composite Traffic Volumes

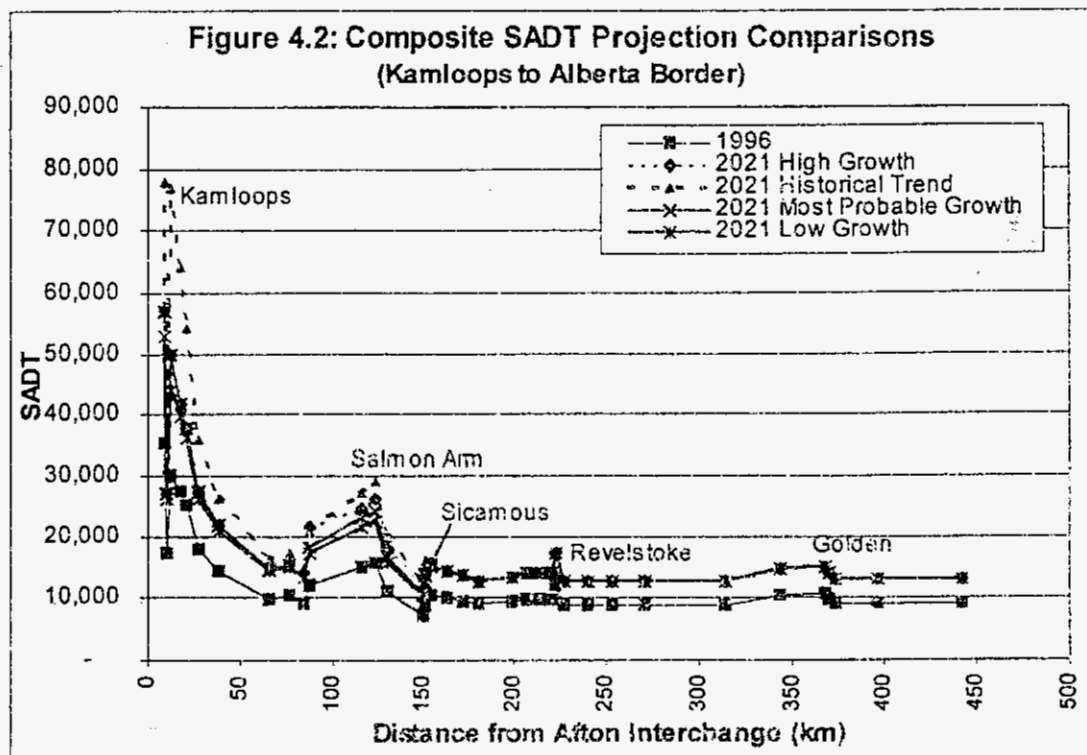
Composite daily traffic in SADT and AADT forecasts were estimated by combining the projected external and internal traffic volumes described in Sections 4.1 and 4.2 respectively. The composite 25 year SADT and AADT forecasts for the trend and population-based growth scenarios are provided in Appendix E (Tables E1 through E8). These projections indicate that composite daily traffic on the TCH would increase by approximately 41% to 158% in the trend scenario, 41% to 82% in the high growth scenario, 42% to 56% in the low growth scenario and 41% to 50% in the most probable growth scenario over the next 25 years.

Figure 4.1 compares composite 25 year SADT forecasts for each growth scenario throughout the corridor. The trend and population-based forecasts are all quite similar, with the most noticeable differences at the western end of the corridor. As expected, the trend growth scenario produces significantly higher composite traffic volumes on the TCH. The high and most probable 25 year SADT projections are the same at the eastern end of the corridor, because the internal traffic forecasts are

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used. The forecasts based on population growth also generally follow same pattern as the 1996 SADTs. The forecasts based on historical trends are slightly higher than the population-based forecasts, and are substantially higher in the Kamloops area. As previously discussed, the “most probable” scenario reflects growth rates on the TCH generated from the City’s transportation model. Based on these results, it is recommended that the 25 year SADT and AADT projections for the “most probable” scenario be used for future analysis.



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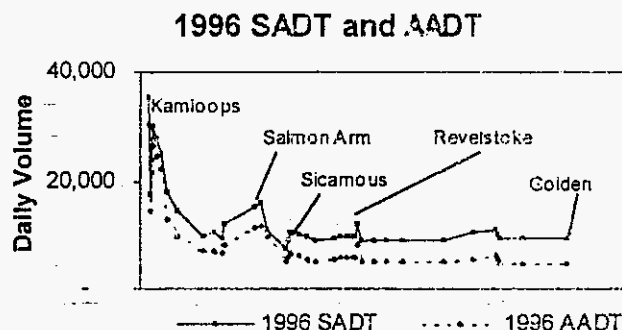
## 5 Summary

The study was designed to assess the general role and function of the TCH based on historic, current and future traffic conditions. This information will ultimately be used to evaluate projected conditions on the TCH, to identify potential problems and to assess alternative strategies toward managing internal and external traffic in subsequent stages of the Corridor Management Plan process. The role and function of the corridor are highlighted for the current and forecast conditions below.

### 5.1 Current Role and Function

Background data and analysis provided an indication of the current role and function of the TCH between Kamloops and the Alberta border. The overall features are highlighted as follows.

- The TCH traverses through several communities between Kamloops and the Alberta border, and provides connections to numerous provincial highways that accommodate travel throughout the province. The primary features of the TCH — such as operating speed, number of lanes, classification, surrounding land uses and terrain — vary significantly throughout the study area and affect various types of travel. In order to distinguish between these differing sections of the Highway, 36 segments have been established in which to assess the traffic characteristics presented within this report.



- Summer average annual daily (SADT) and average annual daily traffic (AADT) volumes are also different throughout the corridor. In the western sections of the highway, both

the SADT and AADT volumes are significantly than in the eastern

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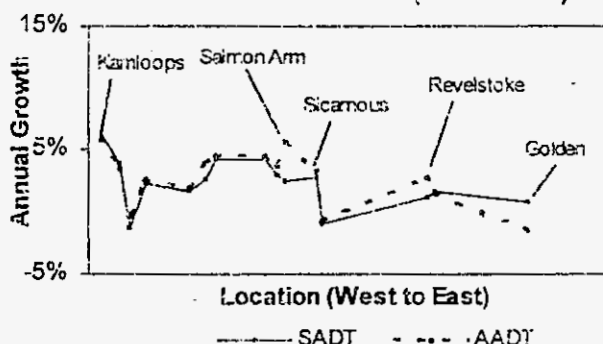
areas. The overall differences between SADT and AADT, however, are found to be generally consistent throughout. This pattern indicates that the tourism travel component on the TCH is relatively constant.

- Historically, the relationships between SADT and AADT volumes on the TCH have not changed over the last 10 years. Prior to 1986, the opening of the Coquihalla Highway made winter travel to the Lower Mainland and other parts of the province more attractive, thus reducing the spread between SADT and AADT. The more recent trends would indicate that tourist travel on the TCH as not changed dramatically over the last couple years.
- Throughout the subject section of the TCH, daily traffic volumes are generally highest on Thursdays and Saturdays. The combination of local work/shopping/personal business trips and recreational travel during these days of the week are the primary factors contributing toward this pattern. During a typical weekday, approximately 80% of the daily trips occur between 8AM and 3PM. In the western sections of the corridor, the reported traffic volumes are relatively even throughout this period, with slightly higher levels during the morning and afternoon peaks. In the eastern areas of the highway, the later afternoon and early evening periods account for the largest proportion of the daily travel on the TCH. This pattern is reflective of the general location of these communities to other urban centres and the large proportion of tourism-based travel on the highway.
- Historical SADT and AADT volumes on the TCH between 1988 and 1996 have increased at a rate of 2.8% and 3.5% per year, respectively.

Both growth

rates have been considerably higher in the western sections of the corridor, where annual increases have reportedly been as high as 6%. Overall, the average daily patterns are consistent with those recorded for the last 20 to 30 years on the TCH. The Design Hour Volumes

**Historical Traffic Growth (1988-1996)**



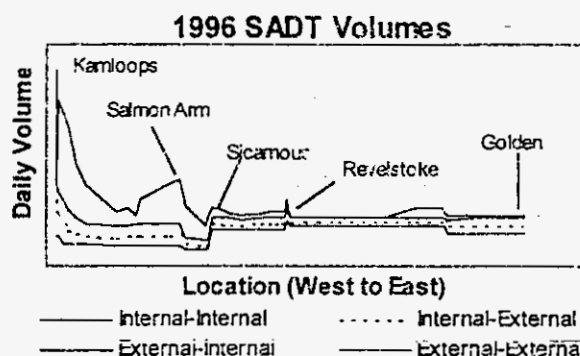
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(DHV) have also grown at a rate of approximately 3% per year, confirming a consistency with daily traffic volumes.

- The composition of vehicle traffic on the TCH provides an indication of the daily patterns, and can dramatically affect the operation of the Highway. During summer months, passenger vehicles and pick-ups/vans account for the largest proportion — average of approximately 85% — of the vehicles on the TCH. Recreational vehicles and buses represent approximately 7% of the daily summer traffic. Commercial vehicles — such as light trucks, heavy trucks and logging trucks — also account for approximately 7% of vehicle travel on the highway.
- During the summer months, over 55% of the vehicle trips on the TCH are reportedly recreational trips, a majority of which are multi-day. A significant proportion of the multi-day trips are generated to and from communities beyond the immediate area of the TCH corridor. Work, shopping and personal business trips — which are generally made to communities adjacent to the highway — account for approximately 35% of the summer daily traffic. These patterns highlight the local, provincial and national roles and functions of the TCH between Kamloops and the Alberta border.

Trip Purpose (Summer)	
Work —	17.9%
Shopping —	6.9%
Personal Business —	10.5%
Recreation (1 Day) —	7.1%
Recreation (Multi-day) —	50.3%
Commercial Traffic —	7.3%
Total —	100%



- The extent of internal and external traffic is different on each segment of the TCH between Kamloops and the Alberta border. In the western section of the corridor, internal trips (to and from communities

adjacent to the corridor) are significantly higher than in the eastern areas; particularly between Monte Creek and Kamloops. Although,

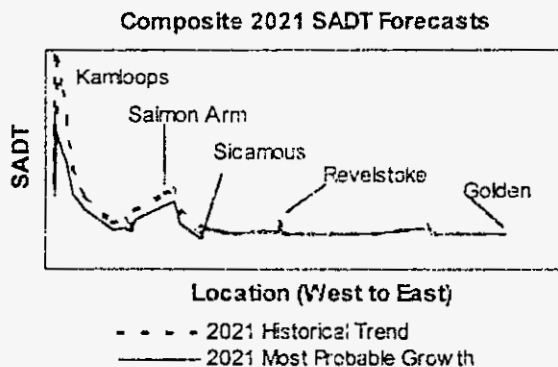
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externally related trips are essentially balanced throughout the corridor, these trips account for a large proportion of vehicle travel on the TCH in the eastern areas.

## 5.2 Future Role and Function

Socio-economic changes, both provincially and in communities immediately adjacent to the corridor, will add to the current traffic demands on the TCH. This report examined some of the factors that will affect future internal traffic between communities along the TCH, which were combined with the external forecasts produced by Actran Consultants. These patterns and composite traffic forecasts are briefly discussed below.



type — including work, shopping, personal business, recreation and commuter trips. Overall, the external traffic demands for this section of the TCH are projected to grow by 42% to 46% over the next 25 years. Because the projections of external traffic indicate that all trip types will grow at constant rate, it is reasonable to assume that the historical relationships previously highlighted will not change with the projected growth along the TCH.

- Externally generated traffic on the TCH included trips that originate and / or are destined to communities beyond the immediate corridor. The 25 year SADT projections were prepared for each trip type — including work, shopping, personal business, recreation and commuter trips. Overall, the external traffic demands for this section of the TCH are projected to grow by 42% to 46% over the next 25 years. Because the projections of external traffic indicate that all trip types will grow at constant rate, it is reasonable to assume that the historical relationships previously highlighted will not change with the projected growth along the TCH.
- The internal 25 year traffic forecasts were prepared using two methods, namely a trend growth scenario and population-based growth scenarios. The trend growth scenario was projected using the historical rates of change recorded along various segments of the TCH over the last 10 years. Population-based growth scenarios were prepared for a high, low and most probable levels of change within communities along the corridor. As previously described, the trend growth scenario produced varied forecasts throughout the corridor, because of the high growth rates experienced in the western sections.

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were established based on population growth estimates for communities immediately adjacent to the corridor. The most probable growth scenario reflected both the average population forecasts for each of the communities and actual traffic forecasts on the TCH in the Kamloops area based on the City's transportation model. The most probable growth scenario is recommended for the purpose of assessing future traffic conditions on the TCH. Overall, the growth estimates indicate that internal traffic along the TCH would increase by approximately 40 to 80% over the next 25 years.

- It is recommended that the most probable population-based growth be used for traffic forecast. The 2021 composite SADT and AADT volumes along the TCH for the recommended growth scenario are summarized in Table 5.1.



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**Table 5.1**  
**2021 SADT and AADT Forecast Volumes for the Recommended Growth Scenario**

Segment	1996 Volume		Average Annual Compound Growth		2021 Volumes	
	AADT	SADT	AADT	SADT	AADT	SADT
10	30,110	35,370	1.8%	1.9%	47,400	57,219
13	14,280	17,290	1.7%	1.8%	21,894	26,902
17	26,330	29,840	2.1%	2.1%	43,998	49,961
20	24,510	27,430	1.7%	1.7%	37,394	41,592
30	22,025	25,010	1.7%	1.7%	33,600	37,966
33	12,985	18,045	1.7%	1.7%	19,629	27,267
37	9,900	14,470	1.7%	1.7%	14,913	21,798
40	6,800	9,900	1.6%	1.6%	10,155	14,557
50	7,130	10,410	1.6%	1.6%	10,661	15,337
60	6,675	9,180	1.7%	1.6%	10,083	13,532
70	8,290	12,080	1.7%	1.7%	12,715	18,258
80	11,330	14,985	1.8%	1.7%	17,595	23,026
90	11,600	15,810	1.7%	1.7%	17,871	24,213
100	9,760	10,935	1.7%	1.7%	14,852	16,767
110	5,020	7,270	1.8%	1.6%	7,746	10,863
120	5,870	8,908	1.7%	1.7%	8,839	13,535
130	6,720	10,545	1.6%	1.5%	9,950	15,375
140	6,100	10,040	1.4%	1.4%	8,713	14,274
150	5,480	9,540	1.4%	1.4%	7,812	13,548
160	4,855	9,040	1.4%	1.4%	6,934	12,847
170	5,430	9,470	1.4%	1.4%	7,753	13,452
180	5,995	9,890	1.4%	1.4%	8,550	14,044
190	5,995	9,890	1.4%	1.4%	8,550	14,044
200	5,995	9,890	1.4%	1.4%	8,550	14,044
210	5,995	9,890	1.4%	1.4%	8,550	14,044
220	8,070	12,105	1.4%	1.4%	11,502	17,190
230	5,150	8,900	1.4%	1.4%	7,356	12,626
240	5,150	8,900	1.4%	1.4%	7,356	12,626
250	5,150	8,900	1.4%	1.4%	7,356	12,626
260	5,150	8,900	1.4%	1.4%	7,356	12,626
270	5,150	8,900	1.4%	1.4%	7,356	12,626
280	5,525	10,410	1.4%	1.4%	7,890	14,738
290	6,065	10,711	1.4%	1.4%	8,659	15,160
300	5,360	9,940	1.4%	1.4%	7,652	14,083
310	4,655	9,175	1.5%	1.4%	6,677	12,915
320	4,655	9,175	1.5%	1.4%	6,677	12,920
330	4,655	9,175	1.5%	1.4%	6,677	12,920

\*See Appendix B for segment descriptions.

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**Appendix A**

**Historical AADT / SADT Ratio  
Summary**

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Table A.1: SADT-AADT Ratios

Segment	Location	Station	1988	1989	1990	1991	1992	1993	1994	1995	1996	Average
10	0.3 km east of Route 5A	21-001	1.13	1.29	1.26	1.22	1.13	1.28	1.16	1.15	1.15	1.20
13	Sagebrush Interchange	21-034						1.25	1.24	1.20	1.21	1.23
17	Yellowhead D I/C	21-038								1.18	1.18	1.18
30	0.6 km east of Tanager Road	21-003	1.10	1.17	1.21	1.11	1.12	1.16	1.25		1.14	1.16
33	1.5 km east of Pat Road	21-015	1.50	1.53	1.54		1.36	1.35	1.43		1.39	1.44
37	4.5 km west of Route 97	P-21-1	1.50	1.53	1.54	1.49	1.46	1.47	1.43	1.42	1.46	1.48
40	0.6 km east of Route 97	21-010	1.50	1.49	1.54	1.49	1.51	1.46		1.41	1.46	1.48
50	0.6 km west of Anglemont Road, Squilax	22-005	1.60	1.49	1.54	1.61	1.46	1.47	1.58	1.31	1.46	1.50
60	1.1 km east of Anglemont Road, Squilax	22-006	1.41	1.45	1.51	1.47	1.46		1.38	1.44	1.38	1.44
80	0.2 km wof Salmon R. Rd., w. of Salmon Arm	22-001	1.37	1.45	1.49	1.45	1.40	1.26	1.29	1.34	1.32	1.38
90	0.2 km west of Route 97B,, e. of Salmon Arm	22-009	1.45	1.44	1.39	1.44	1.38	1.31	1.26	1.30	1.36	1.37
100	0.2 km east of Route 97B, E. Salmon Arm	22-008	1.45	1.36	1.41	1.40	1.39		1.33		1.12	1.35
110	1.6 km w. of RW Bruhn Bridge	22-014	1.52	1.45	1.55	1.82	1.62	1.88		1.45	1.45	1.59
13	1.8 km east of Route 97 A, Sicamous	22-017	1.60	1.49	1.83	1.83	1.84		1.82	1.57	1.57	1.69
160	0.2 km east of Gorge Cr. Br.at Craigellachie	P-22-1			1.92	1.88	1.84	1.88	1.83	1.83	1.86	1.86
190	1.1km E. of Woods O/H, 16 km w. of Rev.	38-006					1.84	1.65	1.82	1.65		1.74
220	west end of Columbia River Br. west of Rev	38-001	1.70	1.06	1.92	1.76	1.67	1.87	1.51		1.50	1.63
230	4 km E. of Route 23, E. of Rev.	38-004	1.71	1.51		1.82			1.92		1.73	1.74
290	3.2 km W. of Route 95, W. of Golden	37-012	1.47	1.51	1.92	1.90	1.88	2.01	1.92		1.77	1.80
310	2.5 km E. of Route 95, Golden	P-37-1				1.94	2.06	2.11	2.02		1.97	2.02
330	West Yoho Park Gates, 25 km E. of Gold.	37-015	1.72	1.71	1.92		1.88					1.80
	Average		1.48	1.43	1.59	1.60	1.57	1.56	1.54	1.40	1.45	1.51

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**Appendix B**

**MADT Summary**

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Table B.1: MADD Summaries

Location	0.3 km East of Route 5A	Sagebrush Interchange	Yellowhead Interchange	0.6 km East of Tanager Road	1.6 km East of Pat Road	4.6 km West of Route 97	0.6 km East of route 97	0.6 km West of Anglemont Rd.	1.1 km East of Anglemont Rd	0.2 km West of Salmon River Rd	0.2 km East of Salmon River Rd	0.2 km West of Route 97B	0.2 km East of Route 97B	1.6 km West of Bruhn Bridge	1.8 km East of Route 97A	0.2 km East of Gorge Creek	1.1 km East of Woods OH	West End of Columbia River Bridge	4.0 km East of Route 23	3.2 km West of Route 95	2.5 km East of Route 95	West Yoho National Park
Segment	10	13	17	30	33	37	40	50	60	80	90	90	100	110	130	160	190	220	230	290	320	330
Year	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1994	1995	1995	1995
Month																						
Jan.	29393	11326	25597	18998	9407	6875	4807	4820	4895	8655	9772	8558	7250	3465	4652	2579	3304	5301	1096	3766	2426	1903
Feb	32030	12572	28075	20722	10224	7412	5109	5348	5358	9503	10778	9302	8012	3831	4991	2874	3811	5892	1979	4038	2692	2087
Mar	24461	13493	28113	21730	11451	8519	5881	8142	5875	10053	11536	10333	7208	4419	5371	3385	4546	6749	2888	4434	3073	2796
Apr	18326	14320	28678	22725	12801	9737	6688	7016	6548	11007	12539	11461	6583	4945	6333	4474	5548	7911	3945	5535	4134	3765
May	19347	14924	30017	23303	13674	10525	7224	7580	7046	11891	13299	12205	6943	5270	6944	4941	5992	8427	4621	5762	4356	3881
Jun	32621	15616	30475	23814	14827	11566	7932	8328	7417	12352	13658	13359	9520	5788	7894	5991	6843	9413	5255	6590	5173	4554
Jul	35302	16919	29763	25019	17565	14034	9808	10098	8844	14337	15086	15359	10600	6968	10158	8531	4812	11655	8780	9994	8487	7023
Aug	35442	17852	29918	25019	18522	14898	10195	10715	9520	15628	15905	18260	11267	7574	10930	9547	10057	13143	8798	11427	10863	7614
Sep	35167	15438	30074	22858	14298	11087	7808	7983	7544	12912	13625	12592	9872	5682	7776	6011	6907	9487	6096	8843	7361	4695
Oct	34332	14781	29398	21942	13089	9997	6865	7202	6723	11390	12816	11863	9034	4918	6217	4411	5258	7573	4361	5240	3848	3474
Nov	32653	12781	26572	20208	10365	7539	5195	5439	5400	9517	10815	9400	8001	3778	4704	2781	3834	5685	2858	3388	2042	2360
Dec	32398	11558	26333	17879	9565	6818	4705	4923	4938	8764	9807	8774	22804	3593	4637	2720	3564	5605	3070	3760	2416	2513
AADT	30112	14282	28751	22025	12983	9901	8799	7133	6675	11334	12452	11606	9758	5018	6717	4852	5904	8370	4574	6064	4656	3899
SADT	35372	17286	28841	25008	18044	14487	9902	10408	8183	14984	15492	15811	10934	7270	10543	9039	9770	12555	8789	10711	8175	7319

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**Appendix C**  
**Hourly Volume Ranking**

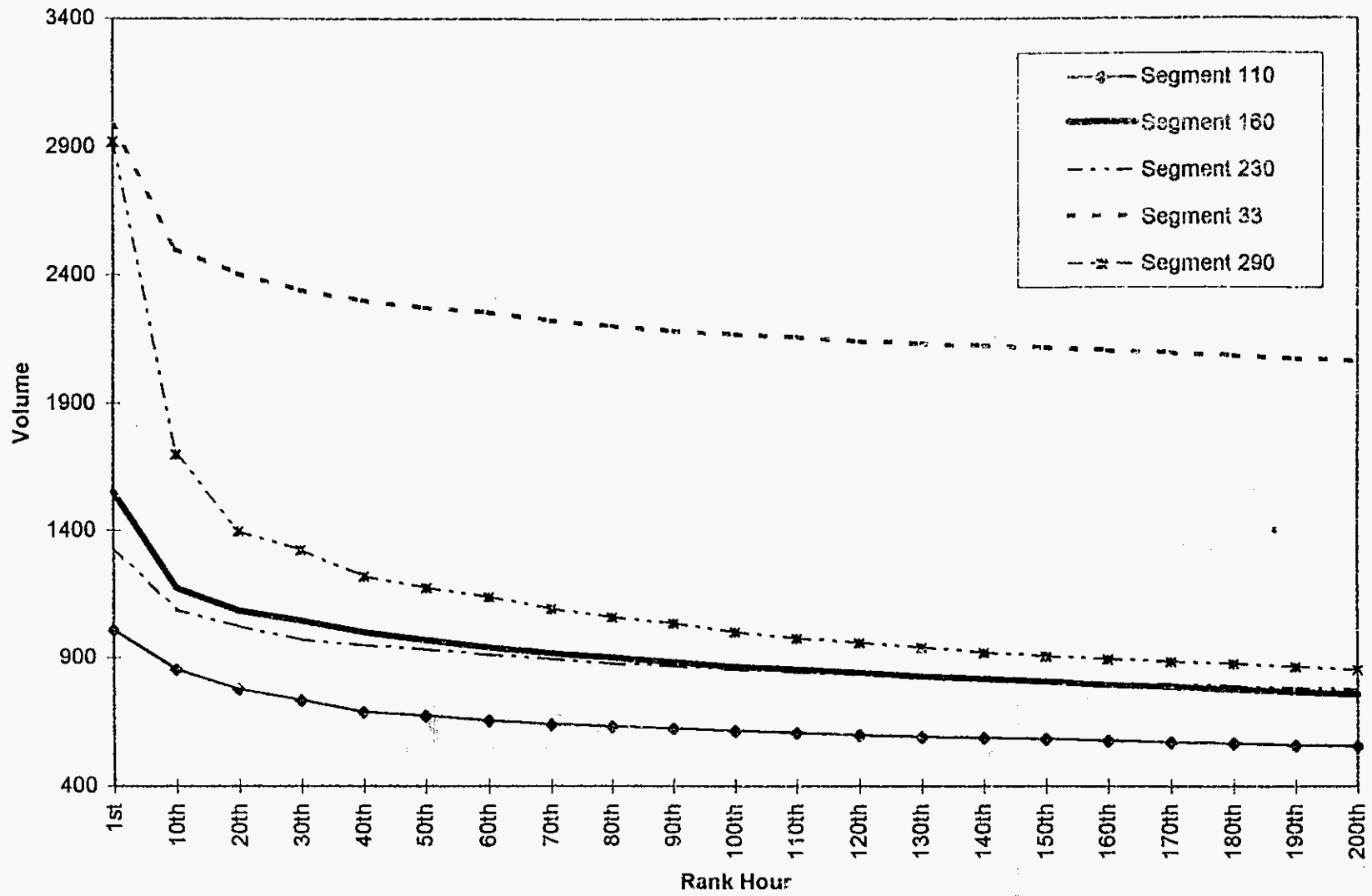
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Table C.1: Hourly Volume Ranking

	0.6 KM EAST OF TANAGER ROAD, EAST OF KAMLOOPS	4.5 KM WEST OF ROUTE 97, MONTE CREEK	1.6 KM WEST OF RW BRUHN (SICAMOUS NARROWS) BRIDGE, SICAMOUS	0.2 KM EAST OF GORGE CREEK BRIDGE AT CRAIGELLACHIE HISTORICAL SITE (CRG)	4.0 KM EAST OF ROUTE 23, EAST OF REVELSTOKE	3.2 KM WEST OF ROUTE 95, WEST OF GOLDEN	2.5 KM EAST OF ROUTE 95, GOLDEN
	Segment	Segment	Segment	Segment	Segment	Segment	Segment
Segment:	33	37	110	160	230	290	320
1st	2986	1931	1012	1554	1333	2923	2776
10th	2500	1613	853	1177	1092	1703	1604
20th	2407	1524	776	1090	1027	1398	1307
30th	2341	1449	732	1049	974	1326	1237
40th	2302	1396	686	1002	951	1224	1137
50th	2274	1352	671	972	933	1180	1094
60th	2258	1317	653	943	912	1144	1058
70th	2225	1284	637	919	896	1097	1013
80th	2205	1273	629	903	877	1063	980
90th	2185	1253	621	884	867	1039	957
100th	2171	1235	612	865	851	1003	923
110th	2160	1223	604	853	842	977	898
120th	2144	1207	596	841	832	960	881
130th	2136	1189	589	826	821	942	864
140th	2124	1178	584	816	814	922	843
150th	2118	1170	581	806	806	907	829
160th	2106	1157	574	793	798	895	818
170th	2096	1149	569	785	794	885	808
180th	2085	1137	563	774	788	877	801
190th	2075	1128	556	764	781	864	788
200th	2065	1121	554	753	773	852	776
AADT	22025	9901	5018	4852	4574	6064	4656
SADT	25008	14467	7270	9039	8789	10711	9175

Figure C.1: Hourly Rankings





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## **Appendix D**

### **Internal SADT and AADT Forecasts**

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**Table D.1**  
**Population Based Projection High Growth Scenario**  
**Internal SADT Traffic Volumes**

	1996 SADT	Internal to Internal	Projected Internal-Internal Traffic						
			Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	12,510	2.4%	14,085	15,858	17,855	20,103	22,634	81%
13	17,290	2,510	2.4%	2,826	3,182	3,582	4,033	4,541	81%
17	29,840	16,250	2.4%	18,296	20,599	23,193	26,113	29,400	81%
20	27,430	15,640	1.8%	17,099	18,695	20,439	22,346	24,430	56%
30	25,010	14,670	1.8%	16,039	17,535	19,171	20,960	22,915	56%
33	18,045	9,405	1.8%	10,282	11,242	12,291	13,437	14,691	56%
37	14,470	6,910	1.8%	7,555	8,260	9,030	9,873	10,794	56%
40	9,900	2,660	1.8%	2,908	3,180	3,476	3,800	4,155	56%
50	10,410	3,040	1.8%	3,324	3,634	3,973	4,343	4,749	56%
60	9,180	1,680	2.5%	1,901	2,151	2,433	2,753	3,115	85%
70	12,080	4,425	3.5%	5,256	6,242	7,413	8,805	10,457	136%
80	14,985	7,340	2.5%	8,305	9,396	10,631	12,027	13,608	85%
90	15,810	8,260	2.5%	9,345	10,573	11,963	13,535	15,314	85%
100	10,935	5,800	2.5%	6,562	7,424	8,400	9,504	10,753	85%
110	7,270	2,617	2.5%	2,961	3,350	3,790	4,288	4,852	85%
120	8,908	4,200	2.5%	4,752	5,376	6,083	6,882	7,787	85%
130	10,545	1,715	2.5%	1,940	2,195	2,484	2,810	3,180	85%
140	10,040	1,335	1.4%	1,431	1,534	1,645	1,763	1,890	42%
150	9,540	970	1.4%	1,037	1,109	1,186	1,268	1,356	40%
160	9,040	565	1.4%	604	646	691	739	790	40%
170	9,470	820	1.4%	877	938	1,003	1,072	1,147	40%
180	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
190	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
200	9,890	1,070	1.4%	1,144	1,224	1,303	1,399	1,496	40%
210	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
220	12,105	1,260	1.4%	1,347	1,441	1,541	1,648	1,762	40%
230	8,900	203	1.4%	217	232	248	265	284	40%
240	8,900	203	1.4%	217	232	248	265	284	40%
250	8,900	203	1.4%	217	232	248	265	284	40%
260	8,900	203	1.4%	217	232	248	265	284	40%
270	8,900	203	1.4%	217	232	248	265	284	40%
280	10,410	1,715	1.4%	1,834	1,961	2,097	2,243	2,398	40%
290	10,711	1,915	1.4%	2,048	2,190	2,342	2,504	2,678	40%
300	9,940	1,145	1.4%	1,224	1,309	1,400	1,497	1,601	40%
310	9,175	875	1.4%	936	1,001	1,070	1,144	1,223	40%
320	9,175	475	1.4%	508	543	581	621	664	40%
330	9,175	475	1.4%	508	543	581	621	664	40%

**Table D.3**  
**Population Based Projection Low Growth Scenario**  
**Internal SADT Traffic Volumes**

	1996 SADT	Internal to Internal	Projected Internal-Internal Traffic						25-Year Increase
			Annual Growth Rate	2001	2006	2010	2016	2021	
10	35,370	12,510	1.5%	13,477	14,518	15,640	16,849	18,151	45%
13	17,290	2,510	1.5%	2,704	2,913	3,138	3,381	3,642	45%
17	29,840	16,250	1.5%	17,506	18,859	20,316	21,886	23,578	45%
20	27,430	15,640	1.5%	16,849	18,151	19,554	21,065	22,693	45%
30	25,010	14,670	1.5%	15,804	17,025	18,341	19,758	21,285	45%
33	18,045	9,405	1.5%	10,132	10,915	11,758	12,667	13,646	45%
37	14,470	6,910	1.5%	7,444	8,019	8,639	9,307	10,026	45%
40	9,900	2,660	1.5%	2,866	3,087	3,326	3,583	3,860	45%
50	10,410	3,040	1.5%	3,275	3,528	3,801	4,094	4,411	45%
60	9,180	1,680	1.5%	1,810	1,950	2,100	2,263	2,438	45%
70	12,080	4,425	1.5%	4,767	5,135	5,532	5,960	6,420	45%
80	14,985	7,340	1.5%	7,907	8,518	9,177	9,886	10,650	45%
90	15,810	8,260	1.5%	8,898	9,586	10,327	11,125	11,985	45%
100	10,935	5,800	1.5%	6,248	6,731	7,251	7,812	8,415	45%
110	7,270	2,617	1.5%	2,819	3,037	3,272	3,525	3,797	45%
120	8,908	4,200	1.5%	4,525	4,874	5,251	5,657	6,094	45%
130	10,545	1,715	1.5%	1,848	1,990	2,144	2,310	2,488	45%
140	10,040	1,335	1.4%	1,431	1,534	1,645	1,763	1,890	42%
150	9,540	970	1.4%	1,037	1,109	1,186	1,268	1,356	40%
160	9,040	565	1.4%	604	646	691	739	790	40%
170	9,470	820	1.4%	877	938	1,003	1,072	1,147	40%
180	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
190	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
200	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
210	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
220	12,105	1,260	1.4%	1,347	1,441	1,541	1,648	1,762	40%
230	8,900	203	1.4%	217	232	248	265	284	40%
240	8,900	203	1.4%	217	232	248	265	284	40%
250	8,900	203	1.4%	217	232	248	265	284	40%
260	8,900	203	1.4%	217	232	248	265	284	40%
270	8,900	203	1.4%	217	232	248	265	284	40%
280	10,410	1,715	1.4%	1,834	1,961	2,097	2,243	2,398	40%
290	10,711	1,915	1.4%	2,048	2,190	2,342	2,504	2,678	40%
300	9,940	1,145	1.4%	1,224	1,309	1,400	1,497	1,601	40%
310	9,175	875	1.4%	936	1,001	1,070	1,144	1,223	40%
320	9,175	475	1.4%	508	543	581	621	664	40%
330	9,175	475	1.4%	508	543	581	621	664	40%

**Table D.4**  
**Population Based Projection Low Growth Scenario**  
**Internal AADT Traffic Volumes**

	1996 AADT	Internal to Internal	Projected Internal-Internal Traffic						25-Year Increase
			Annual Growth Rate	2001	2006	2010	2016	2021	
10	30,110	8,390	1.5%	9,038	9,737	10,439	11,300	12,173	45%
13	14,280	2,180	1.5%	2,348	2,530	2,726	2,936	3,163	45%
17	26,330	15,160	1.5%	16,332	17,594	18,954	20,418	21,996	45%
20	24,510	15,295	1.5%	16,477	17,750	19,122	20,600	22,192	45%
30	22,025	13,710	1.5%	14,770	15,911	17,141	18,465	19,892	45%
33	12,985	6,220	1.5%	6,701	7,219	7,776	8,377	9,025	45%
37	9,900	4,205	1.5%	4,530	4,880	5,257	5,664	6,101	45%
40	6,800	2,150	1.5%	2,316	2,495	2,688	2,896	3,120	45%
50	7,130	2,380	1.5%	2,564	2,762	2,976	3,206	3,453	45%
60	6,675	1,825	1.5%	1,966	2,118	2,282	2,458	2,648	45%
70	8,290	3,340	1.5%	3,598	3,876	4,176	4,498	4,846	45%
80	11,330	5,780	1.5%	6,227	6,708	7,226	7,785	8,386	45%
90	11,600	6,100	1.5%	6,571	7,079	7,626	8,216	8,851	45%
100	9,760	4,260	1.5%	4,589	4,944	5,326	5,738	6,181	45%
110	5,020	2,700	1.5%	2,909	3,133	3,376	3,637	3,918	45%
120	5,870	2,120	1.5%	2,284	2,460	2,650	2,855	3,076	45%
130	6,720	1,540	1.5%	1,659	1,787	1,925	2,074	2,234	45%
140	6,100	1,680	1.4%	1,801	1,931	2,070	2,219	2,378	42%
150	5,480	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
160	4,855	695	1.4%	743	795	850	909	972	40%
170	5,430	830	1.4%	888	949	1,015	1,085	1,161	40%
180	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
190	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
200	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
210	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
220	8,070	1,835	1.4%	1,962	2,098	2,244	2,399	2,566	40%
230	5,150	200	1.4%	214	229	245	262	280	40%
240	5,150	200	1.4%	214	229	245	262	280	40%
250	5,150	200	1.4%	214	229	245	262	280	40%
260	5,150	200	1.4%	214	229	245	262	280	40%
270	5,150	200	1.4%	214	229	245	262	280	40%
280	5,525	280	1.4%	299	320	342	366	392	40%
290	6,065	375	1.4%	401	429	459	490	524	40%
300	5,360	340	1.4%	364	389	416	445	475	40%
310	4,655	280	1.4%	299	320	342	366	392	40%
320	4,655	280	1.4%	299	320	342	366	392	40%
330	4,655	280	1.4%	299	320	342	366	392	40%

**Table D.5**  
**Population Based Projection Most Probable Growth Scenario**  
**Internal SADT Traffic Volumes**

	1996 SADT	Internal to Internal	Projected Internal-Internal Traffic						25-Year Increase
			Annual Growth Rate	2001	2006	2010	2016	2021	
10	35,370	12,510	2.4%	14,085	15,858	17,855	20,103	22,634	81%
13	17,290	2,510	2.4%	2,826	3,182	3,582	4,033	4,541	81%
17	29,840	16,250	2.4%	18,296	20,599	23,193	26,113	29,400	81%
20	27,430	15,640	1.8%	17,099	18,695	20,439	22,346	24,430	56%
30	25,010	14,670	1.8%	16,039	17,535	19,171	20,960	22,915	56%
33	18,045	9,405	1.8%	10,282	11,242	12,291	13,437	14,691	56%
37	14,470	6,910	1.8%	7,555	8,260	9,030	9,873	10,794	56%
40	9,900	2,660	1.8%	2,908	3,180	3,476	3,800	4,155	56%
50	10,410	3,040	1.8%	3,324	3,634	3,973	4,343	4,749	56%
60	9,180	1,680	2.0%	1,855	2,048	2,261	2,496	2,756	64%
70	12,080	4,425	2.0%	4,886	5,394	5,955	6,575	7,260	64%
80	14,985	7,340	2.0%	8,104	8,947	9,879	10,907	12,042	64%
90	15,810	8,260	2.0%	9,120	10,069	11,117	12,274	13,551	64%
100	10,935	5,800	2.0%	6,404	7,070	7,806	8,618	9,516	64%
110	7,270	2,617	2.0%	2,889	3,190	3,522	3,889	4,293	64%
120	8,908	4,200	2.0%	4,637	5,120	5,653	6,241	6,891	64%
130	10,545	1,715	2.0%	1,893	2,091	2,308	2,548	2,814	64%
140	10,040	1,335	1.4%	1,431	1,534	1,645	1,763	1,890	42%
150	9,540	970	1.4%	1,037	1,109	1,186	1,268	1,356	40%
160	9,040	565	1.4%	604	646	691	739	790	40%
170	9,470	820	1.4%	877	938	1,003	1,072	1,147	40%
180	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
190	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
200	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
210	9,890	1,070	1.4%	1,144	1,224	1,308	1,399	1,496	40%
220	12,105	1,260	1.4%	1,347	1,441	1,541	1,648	1,762	40%
230	8,900	203	1.4%	217	232	248	265	284	40%
240	8,900	203	1.4%	217	232	248	265	284	40%
250	8,900	203	1.4%	217	232	248	265	284	40%
260	8,900	203	1.4%	217	232	248	265	284	40%
270	8,900	203	1.4%	217	232	248	265	284	40%
280	10,410	1,715	1.4%	1,834	1,961	2,097	2,243	2,398	40%
290	10,711	1,915	1.4%	2,048	2,190	2,342	2,504	2,678	40%
300	9,940	1,145	1.4%	1,224	1,309	1,400	1,497	1,601	40%
310	9,175	875	1.4%	936	1,001	1,070	1,144	1,223	40%
320	9,175	475	1.4%	508	543	581	621	664	40%
330	9,175	475	1.4%	508	543	581	621	664	40%

**Table D.6**  
**Population Based Projection Most Probable Growth Scenario**  
**Internal AADT Traffic Volumes**

	1996 AADT	Internal to Internal	Projected Internal-Internal Traffic						25-Year Increase
			Annual Growth Rate	2001	2006	2010	2016	2021	
10	30,110	8,390	2.4%	9,446	10,636	11,975	13,482	15,180	81%
13	14,280	2,180	2.4%	2,454	2,763	3,111	3,503	3,944	81%
17	26,330	15,160	2.4%	17,069	19,218	21,637	24,361	27,428	81%
20	24,510	15,295	1.8%	16,722	18,282	19,988	21,853	23,892	56%
30	22,025	13,710	1.8%	14,989	16,388	17,917	19,588	21,416	56%
33	12,985	6,220	1.8%	6,800	7,435	8,128	8,887	9,716	56%
37	9,900	4,205	1.8%	4,597	5,026	5,495	6,008	6,568	56%
40	6,800	2,150	1.8%	2,351	2,570	2,810	3,072	3,358	56%
50	7,130	2,380	1.8%	2,602	2,845	3,110	3,400	3,718	56%
60	6,675	1,825	2.0%	2,015	2,225	2,456	2,712	2,994	64%
70	8,290	3,340	2.0%	3,688	4,071	4,495	4,963	5,480	64%
80	11,330	5,780	2.0%	6,382	7,046	7,779	8,589	9,483	64%
90	11,600	6,100	2.0%	6,735	7,436	8,210	9,064	10,008	64%
100	9,760	4,260	2.0%	4,703	5,193	5,733	6,330	6,989	64%
110	5,020	2,700	2.0%	2,981	3,291	3,634	4,012	4,430	64%
120	5,870	2,120	2.0%	2,341	2,584	2,853	3,150	3,478	64%
130	6,720	1,540	2.0%	1,700	1,877	2,073	2,288	2,527	64%
140	6,100	1,680	1.4%	1,801	1,931	2,070	2,219	2,378	42%
150	5,480	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
160	4,855	695	1.4%	743	795	850	909	972	40%
170	5,430	830	1.4%	888	949	1,015	1,085	1,161	40%
180	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
190	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
200	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
210	5,995	1,200	1.4%	1,283	1,372	1,467	1,569	1,678	40%
220	8,070	1,835	1.4%	1,962	2,098	2,244	2,399	2,566	40%
230	5,150	200	1.4%	214	229	245	262	280	40%
240	5,150	200	1.4%	214	229	245	262	280	40%
250	5,150	200	1.4%	214	229	245	262	280	40%
260	5,150	200	1.4%	214	229	245	262	280	40%
270	5,150	200	1.4%	214	229	245	262	280	40%
280	5,525	280	1.4%	299	320	342	366	392	40%
290	6,065	375	1.4%	401	429	459	490	524	40%
300	5,360	340	1.4%	364	389	416	445	475	40%
310	4,655	280	1.4%	299	320	342	366	392	40%
320	4,655	280	1.4%	299	320	342	366	392	40%
330	4,655	280	1.4%	299	320	342	366	392	40%

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Community Impact  
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## Appendix E Composite SADT and AADT Forecasts

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May, 1998  
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**Table E.1**  
**Trend Growth Scenario**  
**Composite SADT Forecasts**

	1996 SADT	Projected SADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	3.2%	40,884	47,570	55,726	65,732	78,073	121%
13	17,290	2.4%	19,276	21,574	24,249	27,385	31,086	80%
17	29,840	3.9%	35,612	42,786	51,740	62,955	77,049	158%
20	27,430	3.5%	32,200	37,989	45,036	53,639	64,166	134%
30	25,010	3.1%	28,995	33,731	39,372	46,106	54,159	117%
33	18,045	2.8%	20,592	23,565	27,042	31,117	35,902	99%
37	14,470	2.4%	16,242	18,262	20,569	23,207	26,228	81%
40	9,900	2.0%	10,899	12,018	13,271	14,679	16,262	64%
50	10,410	2.0%	11,484	12,689	14,043	15,567	17,286	66%
60	9,180	1.8%	10,031	10,974	12,020	13,183	14,477	58%
70	12,080	2.2%	13,413	14,918	16,622	18,554	20,747	72%
80	14,985	2.4%	16,816	18,905	21,292	24,024	27,155	81%
90	15,810	2.4%	17,763	19,997	22,555	25,489	28,860	83%
100	10,935	2.5%	12,295	13,850	15,633	17,679	20,030	83%
110	7,270	2.1%	8,049	8,930	9,926	11,054	12,335	70%
120	8,908	2.3%	9,960	11,162	12,534	14,102	15,897	78%
130	10,545	1.4%	11,305	12,120	12,994	13,932	14,936	42%
140	10,040	1.4%	10,766	11,544	12,378	13,273	14,232	42%
150	9,540	1.4%	10,231	10,973	11,768	12,620	13,535	42%
160	9,040	1.4%	9,697	10,402	11,158	11,969	12,839	42%
170	9,470	1.4%	10,157	10,894	11,684	12,532	13,441	42%
180	9,890	1.4%	10,606	11,374	12,198	13,082	14,029	42%
190	9,890	1.4%	10,606	11,374	12,198	13,082	14,029	42%
200	9,890	1.4%	10,606	11,374	12,198	13,082	14,029	42%
210	9,890	1.4%	10,606	11,374	12,198	13,082	14,029	42%
220	12,105	1.4%	12,982	13,922	14,931	16,013	17,173	42%
230	8,900	1.4%	9,544	10,235	10,976	11,771	12,623	42%
240	8,900	1.4%	9,544	10,235	10,976	11,771	12,623	42%
250	8,900	1.4%	9,544	10,235	10,976	11,771	12,623	42%
260	8,900	1.4%	9,544	10,235	10,976	11,771	12,623	42%
270	8,900	1.4%	9,544	10,235	10,976	11,771	12,623	42%
280	10,410	1.4%	11,156	11,956	12,812	13,731	14,714	41%
290	10,711	1.4%	11,477	12,299	13,179	14,122	15,133	41%
300	9,940	1.4%	10,655	11,422	12,243	13,123	14,067	42%
310	9,175	1.4%	9,823	10,516	11,258	12,053	12,903	41%
320	9,175	1.4%	9,824	10,519	11,263	12,060	12,913	41%
330	9,175	1.4%	9,824	10,519	11,263	12,060	12,913	41%



**Table E.2**  
**Trend Growth Scenario**  
**Composite AADT Forecasts**

	1996 AADT	Projected AADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	30,110	2.7%	34,104	38,827	44,445	51,164	59,245	97%
13	14,280	2.3%	15,848	17,648	19,728	22,146	24,972	75%
17	26,330	3.7%	31,242	37,283	44,736	53,959	65,401	148%
20	24,510	3.8%	29,273	35,157	42,446	51,499	62,769	156%
30	22,025	3.8%	26,299	31,577	38,116	46,237	56,344	156%
33	12,985	3.4%	15,162	17,813	21,056	25,039	29,948	131%
37	9,900	2.9%	11,315	12,987	14,968	17,324	20,135	103%
40	6,800	2.6%	7,659	8,660	9,830	11,205	12,825	89%
50	7,130	2.6%	8,050	9,124	10,383	11,865	13,616	91%
60	6,675	2.4%	7,475	8,402	9,478	10,734	12,206	83%
70	8,290	2.8%	9,445	10,806	12,416	14,326	16,600	100%
80	11,330	3.1%	13,091	15,190	17,699	20,705	24,318	115%
90	11,600	3.1%	13,404	15,559	18,139	21,237	24,966	115%
100	9,760	2.9%	11,143	12,780	14,723	17,039	19,807	103%
110	5,020	3.1%	5,810	6,755	7,887	9,248	10,887	117%
120	5,870	2.7%	6,633	7,528	8,582	9,828	11,305	93%
130	6,720	1.4%	7,214	7,745	8,314	8,926	9,583	43%
140	6,100	1.4%	6,547	7,027	7,543	8,096	8,690	42%
150	5,480	1.4%	5,883	6,316	6,781	7,280	7,816	43%
160	4,855	1.4%	5,214	5,600	6,014	6,459	6,936	43%
170	5,430	1.4%	5,831	6,262	6,725	7,222	7,756	43%
180	5,995	1.4%	6,437	6,911	7,420	7,967	8,554	43%
190	5,995	1.4%	6,437	6,911	7,420	7,967	8,554	43%
200	5,995	1.4%	6,437	6,911	7,420	7,967	8,554	43%
210	5,995	1.4%	6,437	6,911	7,420	7,967	8,554	43%
220	8,070	1.4%	8,664	9,301	9,985	10,719	11,508	43%
230	5,150	1.4%	5,531	5,940	6,379	6,851	7,357	43%
240	5,150	1.4%	5,531	5,940	6,379	6,851	7,357	43%
250	5,150	1.4%	5,531	5,940	6,379	6,851	7,357	43%
260	5,150	1.4%	5,531	5,940	6,379	6,851	7,357	43%
270	5,150	1.4%	5,531	5,940	6,379	6,851	7,357	43%
280	5,525	1.4%	5,928	6,366	6,836	7,341	7,884	43%
290	6,065	1.4%	6,513	6,994	7,510	8,065	8,660	43%
300	5,360	1.4%	5,756	6,181	6,637	7,127	7,653	43%
310	4,655	1.5%	5,003	5,378	5,780	6,213	6,678	43%
320	4,655	1.5%	5,003	5,378	5,780	6,213	6,678	43%
330	4,655	1.5%	5,004	5,379	5,782	6,214	6,680	43%

**Table E.3**  
**Population Based Projection High Growth Scenario**  
**Composite SADT Forecasts**

	1996 SADT	Projected SADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	1.9%	38,919	42,836	47,162	51,940	57,219	62%
13	17,290	1.8%	18,882	20,624	22,531	24,617	26,902	56%
17	29,840	2.1%	33,059	36,637	40,615	45,039	49,961	67%
20	27,430	1.7%	29,809	32,395	35,207	38,266	41,592	52%
30	25,010	1.7%	27,185	29,550	32,123	34,922	37,966	52%
33	18,045	1.7%	19,596	21,282	23,113	25,104	27,267	51%
37	14,470	1.7%	15,704	17,044	18,500	20,081	21,798	51%
40	9,900	1.6%	10,692	11,549	12,474	13,475	14,557	47%
50	10,410	1.6%	11,248	12,153	13,133	14,192	15,337	47%
60	9,180	1.7%	9,964	10,820	11,755	12,775	13,890	51%
70	12,080	2.3%	13,486	15,091	16,928	19,034	21,455	78%
80	14,985	2.0%	16,524	18,233	20,132	22,243	24,592	64%
90	15,810	2.0%	17,435	19,241	21,250	23,486	25,975	64%
100	10,935	2.0%	12,064	13,320	14,716	16,272	18,004	65%
110	7,270	1.8%	7,945	8,691	9,512	10,419	11,421	57%
120	8,908	1.9%	9,793	10,778	11,870	13,083	14,431	62%
130	10,545	1.6%	11,415	12,362	13,394	14,517	15,741	49%
140	10,040	1.4%	10,772	11,557	12,400	13,304	14,274	42%
150	9,540	1.4%	10,233	10,977	11,775	12,630	13,548	42%
160	9,040	1.4%	9,698	10,404	11,162	11,975	12,847	42%
170	9,470	1.4%	10,159	10,898	11,690	12,540	13,452	42%
180	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
190	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
200	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
210	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
220	12,105	1.4%	12,985	13,928	14,940	16,026	17,190	42%
230	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
240	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
250	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
260	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
270	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
280	10,410	1.4%	11,160	11,963	12,825	13,748	14,738	42%
290	10,711	1.4%	11,481	12,307	13,193	14,142	15,160	42%
300	9,940	1.4%	10,658	11,427	12,251	13,135	14,083	42%
310	9,175	1.4%	9,824	10,520	11,264	12,062	12,915	41%
320	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%
330	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%

**Table E.4**  
**Population Based Projection High Growth Scenario**  
**Composite AADT Traffic Volumes**

Segment	1996 AADT	Projected AADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	30,110	1.8%	32,949	36,067	39,493	43,259	47,400	57%
13	14,280	1.7%	15,547	16,931	18,442	20,092	21,894	53%
17	26,330	2.1%	29,155	32,296	35,789	39,675	43,998	67%
20	24,510	1.7%	26,669	29,019	31,577	34,362	37,394	53%
30	22,025	1.7%	23,964	26,076	28,374	30,876	33,600	53%
33	12,985	1.7%	14,103	15,317	16,636	18,070	19,629	51%
37	9,900	1.7%	10,745	11,662	12,657	13,739	14,913	51%
40	6,800	1.6%	7,367	7,982	8,649	9,372	10,155	49%
50	7,130	1.6%	7,727	8,374	9,075	9,836	10,661	50%
60	6,675	1.8%	7,297	7,981	8,734	9,561	10,473	57%
70	8,290	2.4%	9,307	10,473	11,812	13,352	15,129	82%
80	11,330	2.1%	12,527	13,859	15,341	16,991	18,828	66%
90	11,600	2.0%	12,809	14,154	15,650	17,316	19,172	65%
100	9,760	1.9%	10,727	11,799	12,985	14,301	15,761	61%
110	5,020	2.0%	5,547	6,133	6,785	7,512	8,322	66%
120	5,870	1.9%	6,426	7,040	7,717	8,465	9,292	58%
130	6,720	1.7%	7,309	7,953	8,659	9,432	10,279	53%
140	6,100	1.4%	6,551	7,035	7,555	8,113	8,713	43%
150	5,480	1.4%	5,883	6,315	6,779	7,277	7,812	43%
160	4,855	1.4%	5,214	5,599	6,013	6,457	6,934	43%
170	5,430	1.4%	5,831	6,261	6,724	7,220	7,753	43%
180	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
190	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
200	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
210	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
220	8,070	1.4%	8,663	9,299	9,982	10,715	11,502	43%
230	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
240	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
250	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
260	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
270	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
280	5,525	1.4%	5,933	6,371	6,842	7,347	7,890	43%
290	6,065	1.4%	6,513	6,993	7,510	8,064	8,659	43%
300	5,360	1.4%	5,756	6,180	6,636	7,126	7,652	43%
310	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%
320	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%
330	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%

**Table E.5**  
**Population Based Projection Low Growth Scenario**  
**Composite SADT Forecasts**

	1996 SADT	Projected SADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	1.6%	38,310	41,496	44,947	48,686	52,737	49%
13	17,290	1.6%	18,760	20,355	22,086	23,965	26,003	50%
17	29,840	1.6%	32,269	34,897	37,739	40,813	44,139	48%
20	27,430	1.5%	29,558	31,851	34,322	36,985	39,854	45%
30	25,010	1.5%	26,950	29,041	31,293	33,721	36,336	45%
33	18,045	1.5%	19,446	20,955	22,581	24,334	26,223	45%
37	14,470	1.5%	15,594	16,804	18,109	19,515	21,030	45%
40	9,900	1.5%	10,650	11,456	12,324	13,257	14,261	44%
50	10,410	1.5%	11,199	12,048	12,961	13,943	14,999	44%
60	9,180	1.5%	9,874	10,620	11,422	12,285	13,213	44%
70	12,080	1.5%	12,997	13,984	15,046	16,189	17,419	44%
80	14,985	1.5%	16,127	17,356	18,678	20,102	21,634	44%
90	15,810	1.4%	16,988	18,254	19,614	21,076	22,646	43%
100	10,935	1.4%	11,750	12,626	13,568	14,579	15,667	43%
110	7,270	1.4%	7,804	8,378	8,994	9,656	10,366	43%
120	8,908	1.4%	9,566	10,276	11,038	11,858	12,738	43%
130	10,545	1.4%	11,323	12,157	13,054	14,017	15,050	43%
140	10,040	1.4%	10,772	11,557	12,400	13,304	14,274	42%
150	9,540	1.4%	10,233	10,977	11,775	12,630	13,548	42%
160	9,040	1.4%	9,698	10,404	11,162	11,975	12,847	42%
170	9,470	1.4%	10,159	10,898	11,690	12,540	13,452	42%
180	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
190	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
200	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
210	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
220	12,105	1.4%	12,985	13,928	14,940	16,026	17,190	42%
230	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
240	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
250	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
260	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
270	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
280	10,410	1.4%	11,160	11,963	12,825	13,748	14,738	42%
290	10,711	1.4%	11,481	12,307	13,193	14,142	15,160	42%
300	9,940	1.4%	10,658	11,427	12,251	13,135	14,083	42%
310	9,175	1.4%	9,824	10,520	11,264	12,062	12,915	41%
320	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%
330	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%

**Table E.6**  
**Population Based Projection Low Growth Scenario**  
**Composite AADT Traffic Volumes**

Segment	1996 AADT	Projected AADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	30,110	1.6%	32,541	35,168	38,008	41,077	44,394	47%
13	14,280	1.6%	15,442	16,698	18,056	19,525	21,113	48%
17	26,330	1.5%	28,418	30,672	33,106	35,732	38,567	46%
20	24,510	1.5%	26,424	28,487	30,711	33,110	35,695	46%
30	22,025	1.5%	23,745	25,599	27,598	29,753	32,076	46%
33	12,985	1.5%	14,003	15,101	16,284	17,561	18,938	46%
37	9,900	1.5%	10,677	11,515	12,420	13,395	14,446	46%
40	6,800	1.5%	7,333	7,908	8,527	9,196	9,916	46%
50	7,130	1.5%	7,689	8,291	8,941	9,641	10,396	46%
60	6,675	1.5%	7,199	7,763	8,372	9,029	9,737	46%
70	8,290	1.5%	8,939	9,638	10,392	11,205	12,082	46%
80	11,330	1.5%	12,214	13,168	14,196	15,304	16,499	46%
90	11,600	1.5%	12,479	13,425	14,442	15,536	16,714	44%
100	9,760	1.5%	10,497	11,289	12,142	13,058	14,044	44%
110	5,020	1.5%	5,401	5,810	6,251	6,724	7,234	44%
120	5,870	1.5%	6,312	6,787	7,297	7,847	8,437	44%
130	6,720	1.5%	7,226	7,769	8,354	8,982	9,658	44%
140	6,100	1.4%	6,551	7,035	7,555	8,113	8,713	43%
150	5,480	1.4%	5,883	6,315	6,779	7,277	7,812	43%
160	4,855	1.4%	5,214	5,599	6,013	6,457	6,934	43%
170	5,430	1.4%	5,831	6,261	6,724	7,220	7,753	43%
180	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
190	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
200	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
210	5,995	1.4%	6,436	6,910	7,418	7,964	8,550	43%
220	8,070	1.4%	8,663	9,299	9,982	10,715	11,502	43%
230	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
240	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
250	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
260	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
270	5,150	1.4%	5,531	5,940	6,379	6,850	7,356	43%
280	5,525	1.4%	5,933	6,371	6,842	7,347	7,890	43%
290	6,065	1.4%	6,513	6,993	7,510	8,064	8,659	43%
300	5,360	1.4%	5,756	6,180	6,636	7,126	7,652	43%
310	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%
320	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%
330	4,655	1.5%	5,003	5,378	5,780	6,212	6,677	43%

**Table E.7**  
**Population Based Projection Most Probable Growth Scenario**  
**Composite SADT Forecasts**

	1996 SADT	Projected SADT						
		Annual Growth Rate	2001	2006	2010	2016	2021	25-Year Increase
10	35,370	1.9%	38,919	42,836	47,162	51,940	57,219	62%
13	17,290	1.8%	18,882	20,624	22,531	24,617	26,902	56%
17	29,840	2.1%	33,059	36,637	40,615	45,039	49,961	67%
20	27,430	1.7%	29,809	32,395	35,207	38,266	41,592	52%
30	25,010	1.7%	27,185	29,550	32,123	34,922	37,966	52%
33	18,045	1.7%	19,596	21,282	23,113	25,104	27,267	51%
37	14,470	1.7%	15,704	17,044	18,500	20,081	21,798	51%
40	9,900	1.6%	10,692	11,549	12,474	13,475	14,557	47%
50	10,410	1.6%	11,248	12,153	13,133	14,192	15,337	47%
60	9,180	1.6%	9,919	10,718	11,583	12,518	13,532	47%
70	12,080	1.7%	13,116	14,243	15,470	16,805	18,258	51%
80	14,985	1.7%	16,324	17,785	19,380	21,123	23,026	54%
90	15,810	1.7%	17,209	18,736	20,404	22,225	24,213	53%
100	10,935	1.7%	11,906	12,965	14,122	15,386	16,767	53%
110	7,270	1.6%	7,874	8,531	9,244	10,020	10,863	49%
120	8,908	1.7%	9,678	10,521	11,440	12,442	13,535	52%
130	10,545	1.5%	11,368	12,258	13,218	14,255	15,375	46%
140	10,040	1.4%	10,772	11,557	12,400	13,304	14,274	42%
150	9,540	1.4%	10,233	10,977	11,775	12,630	13,548	42%
160	9,040	1.4%	9,698	10,404	11,162	11,975	12,847	42%
170	9,470	1.4%	10,159	10,898	11,690	12,540	13,452	42%
180	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
190	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
200	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
210	9,890	1.4%	10,608	11,379	12,206	13,093	14,044	42%
220	12,105	1.4%	12,985	13,928	14,940	16,026	17,190	42%
230	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
240	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
250	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
260	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
270	8,900	1.4%	9,545	10,236	10,978	11,773	12,626	42%
280	10,410	1.4%	11,160	11,963	12,825	13,748	14,738	42%
290	10,711	1.4%	11,481	12,307	13,193	14,142	15,160	42%
300	9,940	1.4%	10,658	11,427	12,251	13,135	14,083	42%
310	9,175	1.4%	9,824	10,520	11,264	12,062	12,915	41%
320	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%
330	9,175	1.4%	9,825	10,521	11,267	12,065	12,920	41%

