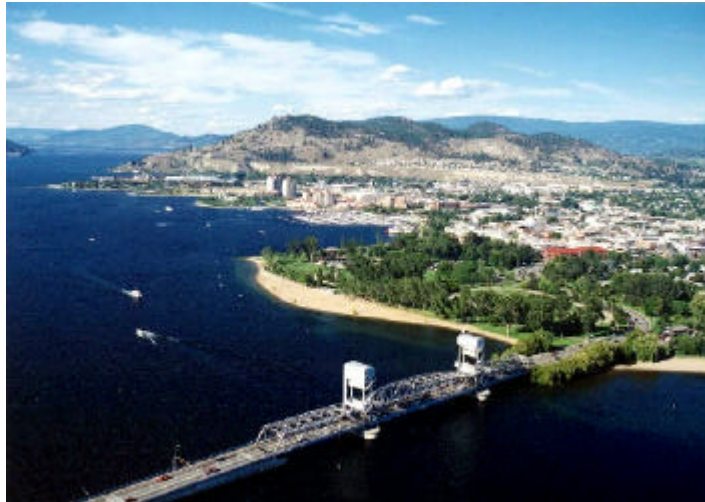


***City of Kelowna
Downtown Kelowna Association***



Source: City of Kelowna Web Site

***One Way Couplets Impact Analysis
Final Report July 2003***

Prepared by:
Development Consulting Group
and



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Table of Contents

Page

<u>1.</u>	<u>Executive Summary</u>	2
<u>2.</u>	<u>Introduction</u>	6
<u>2.1</u>	<u>Background</u>	6
<u>2.2</u>	<u>Issues and Scope of Work</u>	6
<u>2.3</u>	<u>Report Organization</u>	7
<u>3.</u>	<u>Description of the One Way Couplets</u>	8
<u>3.1</u>	<u>Highway 97 Improvements</u>	8
<u>3.2</u>	<u>One Way Couplet</u>	11
<u>4.</u>	<u>Description of the Study Area</u>	12
<u>4.1</u>	<u>Study Area</u>	12
<u>4.2</u>	<u>Description of the Study Area Land Uses</u>	13
<u>5.</u>	<u>Literature Review</u>	15
<u>5.1</u>	<u>Impacts of Highway Improvements on Communities</u>	15
<u>5.2</u>	<u>The Emergence and Rationale for One Way Couplets</u>	16
<u>5.3</u>	<u>The Urban Design and Planning Response to the One Way Couplet</u>	18
<u>5.4</u>	<u>Benchmark Review of the One Way Couplets that have been converted to Two Way Streets</u>	19
<u>5.5</u>	<u>Summary</u>	23
<u>6.</u>	<u>Impact Assessment</u>	26
<u>6.1</u>	<u>Introduction</u>	26
<u>6.2</u>	<u>Planning</u>	26
<u>6.3</u>	<u>Social</u>	27
<u>6.4</u>	<u>Economic Impact Assessment Study Area</u>	31
<u>6.5</u>	<u>Economic Impact Assessment: One Way Couplets</u>	40
<u>6.6</u>	<u>Other Economic Impacts</u>	49
<u>7.</u>	<u>Conclusions</u>	54
<u>7.1</u>	<u>Conclusions</u>	54
<u>7.2</u>	<u>Mitigation</u>	60

1. Executive Summary

Introduction and Background

The City of Kelowna retained the Development Consulting Group Ltd. (“DCG”) and TyPlan Consulting Ltd. (“TyPlan”) to undertake an Impact Assessment of the One Way Couplet proposed in the City of Kelowna. As part of the review of the Official Community Plan (“OCP”) road network plan, Council has requested information on the social and economic impacts of the proposed couplet.

The current proposal consists of converting two, two way streets into a one way couplet. Richter will be converted into a one way street northbound. This section of roadway consists of that portion of Richter between Springfield/Cadder in the south to Clement in the north. The southbound couplet consists of Water, from Clement to Harvey Ave. and Water/Pandosy south of Harvey to Cadder/Springfield. In each case the one way links are supported by upgrades to the right of way including new curb, gutter and sidewalks. The functional design plan should be referenced to illustrate the extent of such improvements along the routes.

Literature Review

A literature review was undertaken to benchmark experiences of other communities, in particular experiences of communities that have converted one way couplets back to two way roadways. Based on the case studies it was found that communities generally supported the conversion from couplets to two way streets. Some impacts such as congestion and increased accidents were identified as a result of the conversion.

However, a significant limitation associated with this review was a lack of acknowledgment that during these conversions, streetscape design improvements, downtown beautification and innovative planning policy initiatives supporting renewal were also being implemented to address the problems with declining business in downtown. In addition, economic cycles (i.e. expanding and contracting economic cycles), and the type of couplet system were not discussed. These factors play a significant role in the success of renewal projects. In addition no attempt to quantify the impacts was undertaken in this review.

The proposed Kelowna couplet includes the creation of a one way couplet system while at the same time maintaining the majority of the two way network circulation pattern throughout the downtown core. The proposed couplet is located at the outer boundaries of downtown, as opposed to being proposed in the immediate centre of the central business district as was the case in many of the benchmarked communities. In addition the main commercial street in downtown Kelowna, Bernard Avenue is not impacted by the proposed couplet, this was not the case in the benchmarked communities. To make direct comparisons between what is being proposed in Kelowna with that of the other couplets referenced in the literature review is not justifiable, but it does provide a general understanding of what the perceptions are of other communities.

The review does illustrate however, that if the couplet were proposed along the historic main commercial corridor of a city, (i.e. Bernard Avenue) the impact to those streets will be significant. If non core commercial streets are considered as potential couplets, it is our opinion that the impacts will be limited, however certain businesses will be impacted based on our assessment of the literature.

Solutions to traffic congestion in downtown and business renewal in communities have evolved over time, and consist of the following: a focus on a transportation solution (i.e. safety, conveniences and capacity), a planning solution (i.e. urban design and planning policy), and an emerging trend towards a combination of both, as illustrated below:

Issue	Yesterday Congested Central Business Districts 1950's	Today Vacated Central Business Districts 1970's to 2000's	Emerging Trend Holistic Redevelopment of Central Business Districts 2000 and beyond
Type of Solution	Transportation	Urban Design and Planning	A Balanced Urban Design /Planning and Transportation Solution
Benefits	Safety Convenience Traffic Flow	Urban Design such as streetscape improvements, beautification studies. Planning such as Downtown Master Plans, density bonusing, integrated land use planning, pedestrian and bicycle circulation studies, transit studies to downtown.	Balance of the transportation needs for convenience, safety and improved traffic flow with that of the urban design and planning opportunities associated with downtown.
Examples	Main Street Conversions to One Way Streets. City Wide Couplets. One Way Couplets.	Business Improvement Areas ("BIA") Chamber of Commerce Downtown Associations Residential Associations (in Downtowns)	Evolving currently with the coordination of transportation network plans with streetscape improvement plans and beautification studies.
Source: TyPlan Consulting Ltd.			

We are suggesting the emerging trend approach for Kelowna based on the literature reviewed.

The literature also suggests that specific businesses along the couplets themselves will be impacted. Those impacted businesses that rely on through traffic such as gas stations and convenience stores, highway oriented motels, restaurants and cafes may potentially be impacted. The consultant utilized a proven assessment technique to assess the potential revenue losses along Richter and Water Street, the roads that comprise the proposed couplet.

The success of a downtown business district is dependent upon a variety of factors including planning initiatives, streetscape design, downtown beautification and market factors that are far more important in the determination of a successful downtown than a one way couplet.

Economic Impacts: Downtown Kelowna Businesses

Based on our assessment, there are three street connections that are expected to be impacted by the couplets, Richter Street, Water Street, and Pandosy Street. Pandosy Street is included due to the significant anticipated reduction in traffic volumes as a result of the addition of a raised median along Harvey Ave. Businesses along all three streets were inventoried, and classified and an assessment of the potential revenue loss, and in some instances gain was calculated. The economic impact of the couplet is presented in the table below:

<u>BUSINESS IMPACT ASSESSMENT</u>					
<u>Business Type & Location</u>	Amount Of Commercial Space Impacted				<u>Projected Net Sales Loss(5)</u>
	<u>Low</u> <u>Negative</u> (minus 5-10%)	<u>Medium</u> <u>Negative</u> (minus 10-20%)	<u>High</u> <u>Negative</u> (minus 20-30%)	<u>Low</u> <u>Positive</u> (plus 5-10%)	
Richter Street Couplet(2)	31,000 sf	0	0		\$735,000-\$1,470,000
Water Street Couplet(3)	58,000 sf	0	0	9,000 sf	\$645,000-\$1,290,000
Pandosy Street(4)	7,000 sf	28,000 sf	0	0	\$705,000-\$1,410,000
Total All Streets	96,000 sf	28,000 sf	0	9,000 sf	\$2,085,000-\$4,170,000
1) Development Consulting Group and Typlan Consulting estimates. 2) Richter Street from Harvey to Bernard. 3) Water Street from Clement to Harvey. 4) Pandosy Street from Harvey to Bernard. 5) Projected net sales loss equals total negative impacts less total positive impacts (if any).					

The projected loss of sales for businesses on Richter, Water and Pandosy Streets would amount to 2-4% of current revenue for downtown as a whole. In our opinion most of these lost sales (80%-100%) will simply be transferred to competing businesses located elsewhere in downtown Kelowna. Sales lost to competing businesses located outside of the downtown core (e.g. along Highway 97 either east or west of downtown) are expected to be minimal (e.g. no more than 10%-20%). No loss of sales is expected to businesses located outside the Metro Kelowna area as a whole. These losses were assessed based on an annual basis. It is noted however that these losses decline each year thereafter as residents adapt to the network changes.

Social and Community Impact Assessment

The terms of reference also required the consultant to assess the social and community impacts of the proposed couplets. The following table presents our findings:

Impact Category	No Impact	Minimal Impact	Significant Impact	Comment
Impact on the smart growth objectives of the City	No Impact			No Impact is anticipated
Impacts on diversity or retail and service commercial uses		Minimal Impact		Some conversion of ground floor space on Pandosy from retail to service commercial and store front office.
Potential for high density residential development		Minimal Impact		Possible densification of residential use along and abutting Richter and Water Street.
Access to properties and availability of street parking		Minimal Impact		Loss of street parking on Water Street as well as on Richter Street.
Impact on residential		Minimal Impact		Faster turnover of residential tenants due to increased traffic and nuisance impacts along couplet.
Impact on emergency response times		Minimal Impact		Although an increase in response times was identified by RCMP, fire and ambulance, mitigation can be used to minimize impacts.
Impact on neighborhoods demographic mix		Minimal Impact		Potential conversion of single family residences to multi family along Richter means the potential for an increase in the number of 1 to 2 person households, fewer children and more seniors.
Impact on social interaction within neighborhoods		Minimal Impact		Neighborhoods at Water/Pandosy south of Harvey will be impacted due to new arterial road located adjacent to residences causing an increase in nuisance impacts.
Impact on crime rates	No Impact			No impact as crime is a function of population rather than transportation improvements.
Impact on tourist choices or shopping areas	No Impact			Through driving adjustments and proper signage tourist choices will not be impacted.
Impact on local area residents choice of shopping areas	No Impact			Resident choices will not be impacted.
Impact on commercial space leasing decisions		Minimal Impact		Impacts dependent upon location. Less traffic volumes may result in decreased leasing associated with specific streets.
Impact on sales volume of business		Minimal Impact		Impacts will be focused on Water Street and Richter Street. In addition Pandosy Street will be impacted due to a reduction in vehicular traffic.
Impact on rental rates and vacancy rates for multi-family buildings and hotels	No Impact			Impacts specific to market conditions.
Impact on residential and commercial land values	No Impact for residential	Minimal Impact for Commercial		Residential property values will not be impacted by improvements. Commercial property values on specific streets such as Pandosy may be impacted due to loss of vehicular traffic.

Mitigation

Mitigation can be implemented to further reduce the expected impacts associated with the couplet, both from a revenue loss and social and community perspective. These mitigation measures include:

- Improved signage;
- Encourage use of city parkades;
- Maintain existing pedestrian and bicycle access across Highway 97/Harvey;
- Take actions to promote neighbourhood livability;
- Implement traffic calming measures in neighborhoods;
- Focus on pedestrian oriented design for specific roads in downtown;

- Updated pedestrian and bicycle master plans;
- Focus on design and streetscape improvements on Pandosy Street; and,
- Promote the Downtown as an office and residential focal point.

The implementation of such mitigative measures as part of follow up activities (as suggested in the terms of reference to this assignment), is strongly recommended and is expected to result in the reduction of the potential revenue loss by between 1/3- 1/2 as well as resolve the social and community issues identified in this review.

It is recommended that the mitigation measures be addressed through a subsequent study to minimize the impacts of the proposed one way couplet on downtown Kelowna and the surrounding neighbourhoods.

2. Introduction

2.1 Background

The City of Kelowna retained the Development Consulting Group (“DCG”) and TyPlan Consulting Ltd. (“TyPlan”) to undertake an Impact Assessment of the One Way Couplet proposed in the City of Kelowna.

Phase 1 of this proposed couplet consists of converting Richter Street (“Richter”) into a one way northbound street from Cadder Ave (“Cadder”) in the south to Clement Avenue (“Clement”) in the north and converting Water Street/Pandosy Street (“Water/Pandosy”) into a one way southbound street from Clement in the north to Cadder in the south.

Phase 2 of the proposed couplet, to be completed at an unspecified later date and not subject of this study, will extend the north and southbound couplet from Cadder/Springfield south to Gyro Park in the Mission area.

This couplet is combined with improvements along Highway 97/Harvey Avenue and the widening of the Lake Okanagan Bridge from three to five lanes.

2.2 Issues and Scope of Work

The proposed one-way couplet has been identified in the City of Kelowna’s Official Community Plan (“OCP”). The OCP has recently undergone a “five year” review. As part of the review of the OCP road network, Council has requested information on the social and economic impacts of the proposed couplet.

The City of Kelowna in association with the Downtown Kelowna Association (“DKA”) has requested that the following potential impacts be assessed on the proposed couplet as part of this review:

- Impact on the smart growth objectives of the City;
- Impact on walking, cycling, car pooling and transit use;
- Impact on diversity of retail and service commercial uses;
- Potential for high density residential development;
- Access to properties and availability of street parking;
- Impact on residential and commercial tenures;
- Impact on emergency response times;
- Impact on neighborhoods demographic mix;
- Impact on social interaction within neighborhoods;
- Impact on crime rates;
- Impact on tourist choices or shopping areas;
- Impact on local area residents choice of shopping areas;
- Impact on commercial space leasing decisions;
- Impact on commercial property values;
- Impact on sales volume of business;
- Impact on rental rates and vacancy rates for multi-family buildings and hotels; and,
- Impact on residential and commercial land values.

In addition, both the positive and negative impacts associated with the proposed one way couplet and preliminary mitigation is presented.

2.3 Report Organization

This report is organized into the following sections:

Section 1: Executive Summary; provides a summary of the findings of this review;

Section 2: Introduction; provides a discussion on background issues, scope of work and a summary of the reports organization;

Section 3: Description of the One Way Couplet provides a description of the proposed undertaking and discusses Highway 97 improvements and the one way couplet;

Section 4: Description of the Study Area; provides a description of the study area and land uses within the study area;

Section 5: Literature Review; provides a discussion of one way couplet, their advantages and disadvantages, urban design and planning responses to the one way couplet, an analysis of studies associated with the conversion of one way couplets back to two way streets, and develops a model upon decisions regarding one way couplets should be made based on “lessons learned”;

Section 6: Impact Assessment, provides an assessment of potential impacts of the proposed couplet on planning, transportation, social and economic environments within the City of Kelowna;

Section 7: Conclusions and Mitigation; provides a series of conclusions and mitigative measures.

3. Description of the One Way Couplets

This section of the report provides a description of highway improvements proposed for Highway 97/Harvey Avenue and the one way couplet through the City of Kelowna. The overall objective of the highway improvements is to improve the movement of people, goods and services through the City of Kelowna.

3.1 Highway 97 Improvements

The design of the improvements proposed for Highway 97/Harvey Avenue consider the following basic design criteria:

- Design speed of 60km/h;
- Posted speed of 50km/hr; and,
- Adequate vehicle storage length for left turn lanes.

The changes to the existing network between Abbott Street and Ethel Street are described below, and presented on Figure 1 and 1a.

To be included

Table 1: Design Criteria and Improvements for Harvey Avenue

Road Section	Improvements
Abbott Street to Water Street	No left turns from Abbott approaching from the south to Harvey will be allowed. Two left turn lanes from Hwy 97 to Abbott Street north will be provided. Vehicular access to/from Abbot Street at Harvey will be restricted to right –in right –out movements only, i.e. no left turns onto the bridge from Abbott. There will be two left turn lanes from Harvey eastbound (i.e. form the bridge) to Abbott northbound (i.e. into the Downtown).
Water Street to Ellis Street	Continuous median island along Harvey from Water to Ellis will restrict movement to/from Harvey at Pandosy to right turns. This will enable longer storage lanes to be provided for westbound left turn lanes at Water and eastbound left turns at Ellis. Traffic signals will be installed at Water Street, and the signals at Pandosy will be removed. Improved spacing between signals will assist coordination. Dedicated left turn lanes on to Harvey Avenue from north and southbound Ellis will be provided.
Ellis Street to Richter Street	Road widening of Harvey Ave. to add a dedicated right turn lane from westbound Harvey Ave. to north bound Ellis Street. Widening of the north curb lane at the Harvey Avenue westbound approach to Ellis Street will permit three unobstructed through lanes on Harvey Avenue along with providing a separate right turn lane to Ellis Avenue.
Richter Street to Ethel Street	Widening of the north curb lane at the Harvey Avenue westbound approach to Richter Street will permit three unobstructed through lanes on Harvey Avenue along with a separate right turn land to Richter Street. Removal of the Harvey Avenue westbound left turn to Richter Street will improve traffic flow through the intersection and reduce both pedestrian and vehicle traffic conflict points

Source: City of Kelowna: Okanagan Lake Bridge Project East Approach Functional Design Associated Engineering 1999

In the short term, the couplet is needed in order to accommodate a widened bridge. The planned new 5-lane bridge over Okanagan Lake will eliminate congestion of traffic crossing from the Westside. The Ministry of Transportation regards it as important that the benefits of the new bridge not be lost through congestion along Harvey Avenue through Downtown Kelowna. The planned couplet allows for the elimination of some crossings of Highway 97 and therefore provides better spacing between traffic signals along Harvey, allowing for improved signal coordination. As well, one-way movements eliminate opposing traffic and allow more vehicles to cross or turn on/off Harvey with fewer signal phases, increasing through-traffic capacity on Harvey Avenue. Phase 1 of the Water – Richter Couplet is therefore closely linked to the Bridge.

In the medium and long term, additional capacity will be needed to serve northbound and southbound traffic. In the absence of the proposed one-way couplet, that would mean widening either Pandosy/Water Street or Richter Street or both. By converting both to one-way, each can serve 3 lanes of traffic, with the couplet providing an additional through-lane in each direction. To widen one of the roads to provide two lanes in each direction as well as providing for left turn movements without impeding through-traffic would require provision of a 5-lane cross-section. This would only be possible with extensive property acquisition – for example probably all the homes along one side of Richter Street. The Water-Pandosy alignment was selected after careful review of a number of other possible routes.

3.2 One Way Couplet

The current proposal consists of converting two, two way streets into a one way couplet. Richter will be converted into the northbound link. For the purpose of this study this section of roadway consists of that portion of Richter between Springfield/Cadder in the south to Clement in the north.

The southbound link consists of Water, from Clement to Harvey Ave. and Water/Pandosy south of Harvey to Cadder/Springfield.

In each case the one way links are supported by upgrades to the right of way including new curb, gutter and sidewalks. The functional design plan should be referenced to illustrate the extent of such improvements along the routes.

4. Description of the Study Area

4.1 Study Area

The study area is bounded by Lake Okanagan on the west, Cadder /Springfield Ave. to the south, Gordon Street to the east and Clement Avenue to the north.

4.1.1 Commercial Land Uses Located within the Study Area

The study area includes the central business district of Kelowna which extends along Bernard Avenue ("Bernard"), the historical main street of Kelowna, from Richter in the east to Abbott Street ("Abbott") in the west. The typical built form along Bernard is a one or two storey building with retail and/or service commercial uses at grade and office space above. Parking for these buildings is typically provided at grade at the rear of the property. For buildings located on the south side of Bernard, this results in a number of surface parking lots that take up extensive frontage on Lawrence Avenue ("Lawrence") which in turn makes for a less than ideal shopping/pedestrian environment along Lawrence.

Major retail tenants located on Bernard include a Safeway supermarket, Shoppers Drug Mart, the Bargain Shop and a BC liquor store. Major financial institutions, important "anchor tenants" for the central business district in Kelowna, include the Bank of Montreal, the CIBC, the Interior Credit Savings Union and the Valley First Credit Union. Subsequent to the recent takeover of Canada Trust by the TD Bank, these two financial institutions have closed their branches on Bernard and relocated to a new building at the corner of Leon and Ellis Street ("Ellis"). The Royal Bank has also closed its branch on Bernard and relocated to a new regional head quarters building at the corner of Ellis and Leon.

An inventory undertaken by the consultant in March of 2003 identified ten vacant storefront spaces on Bernard with a combined floor area of approximately 20,000 square feet. This large amount of space for lease on Bernard suggests that the retail market in downtown Kelowna is rather soft at the present time.

Along the proposed Richter one-way street, residential is the predominant land use south of Harvey and north of Bernard. Residential development consists primarily of older single family houses interspersed with a few low rise (2-4 storey) rental and condominium apartment buildings.

On the Water portion of the couplet (i.e. north of Harvey) major land uses include City Hall, the Law Courts, the Kelowna Yacht Club, the Kelowna Community Theatre, Skyreach Place (home of the Kelowna Rockets of the Western Hockey League) and the Grand Hotel & Convention Centre. The Lakeside Casino is the largest commercial tenant in the Grand Hotel and a major draw in its own right.

On the Pandosy portion of the couplet (i.e., south of Harvey), residential is the predominant land use with low rise rental apartment buildings.

4.1.2 Residential Associations located within the Study Area

The downtown is surrounded by established residential neighborhoods. These consist of two neighborhood associations and one quasi association that act as a watch dog regarding issues. These associations consist of:

- Kelowna South Association of Neighborhoods (“KSAN”);
- North End Residential Association (“NERA”); and,
- Friends and Residents of the Abbott Street Heritage Conservation Area Society (“FRAHCAS”).

4.2 Description of the Study Area Land Uses

Land uses within the study area are varied and include a number of land use types. Harvey/Highway 97 bisects the study area and is the major transportation corridor through the City of Kelowna, connecting the Okanagan Bridge to the west and Highway 33 to the east. The entire corridor consists of highway commercial uses. In the area immediately to the north of Highway 97, between Abbott and Richter, up to Clement to the north is downtown Kelowna, consisting of the retail/commercial centre and the cultural district, which includes City Hall, Community Theatre, Skyreach Place and the Grand Hotel and recreational uses to the west of Water Street. The Waterfront, consisting of City Park, the Grand Hotel and Waterfront Park, act as the transition between Lake Okanagan and the downtown. To the east of Richter Street, and south of Highway 97, the area is predominantly residential with a mix of low rise multi-family buildings and older single family homes. Figure 2 illustrates the study area.

5. Literature Review

This section of the report provides a literature review of the impacts of transportation improvements on communities and downtown business districts.

A discussion of the following is provided:

- An overview of the impacts of highway transportation improvements on communities;
- The emergence and rationale for the one way couplet as a transportation solution to urban congestion, outlining both advantages and disadvantages;
- The urban design and planning response to address issues associated with the one way couplet on downtown business districts;
- A review of downtown couplets that have been converted from one way couplet or couplets to two way streets; and,
- A discussion of a model that can be referenced by planners and engineers to optimize both local transportation needs and enhance the success of downtown business districts.

The reader is cautioned that quantifiable assessments of the impacts of one way couplets were not identified as part of our literature review, and as such most recommendations are subjective.

Prior to assessing the specific impacts of the one way couplet in Kelowna, the consultant undertook a literature review of the impacts of highway improvements on central business districts and businesses.

In a study of over 85 by-passed communities (by-passes are similar to couplets as traffic becomes rerouted to alternative or new links in the road network) completed by the Office of Project Planning, Iowa Department of Transportation, the following findings were presented regarding those downtowns by-passed. The following specific types of businesses are impacted along the by-passed corridor:¹

General Conclusions

- The smaller the community the greater the impact of a by-pass or network improvement on the communities Main Street (i.e. defined as the major historical commercial and retail street for communities) because a greater percentage of the business revenues originate from through traffic; and,
- Customers find the by-passed business districts to be more comfortable and safer environments to shop in as a result of decreased conflicts with traffic.

Specific Conclusions

- Service stations, small cafes, convenience stores and highway oriented motels are the most likely to experience some decrease in retail sales. However, many of the businesses find that the total volume of business from the “through traveler” is very small in comparison to the number of local customers;

¹ A Literature Review of Urban By-Pass Studies, Office of Project Planning, Iowa Department of Transportation, 1989

- Service stations which do more than just sell gas, experience little or no noticeable decreases in overall sales;
- Truck stops and motels which cater to truck drivers were identified as most likely to experience a significant decrease in businesses; and,
- Restaurants and cafes that have a good local reputation draw a very high percentage of their business from local people within a range of five miles or so. Many cafes found that by-pass traffic had minimal effect on their business.

Comments

The larger the community the greater the local market area upon which to draw customers from, resulting in less impact from a by-pass or road improvement that impacts the downtown. Greater impacts are anticipated for smaller towns which are more dependent upon highway oriented traffic to support local businesses. These communities that are most impacted are not destinations (i.e. tourist destinations) and do not offer recreational amenities that attract visitors. These are smaller towns in the 10,000 population range. Kelowna's primary market trade area consists of 200,000 people and is a major tourist destination. In terms of business categories, gas stations, highway motels and small cafes are most likely impacted.

5.1 The Emergence and Rationale for One Way Couplets

After World War 2, cities throughout North America experienced tremendous growth, and along with this growth traffic congestion became a critical issue in downtowns. In the 1950's the one way couplet was introduced in an attempt to rid downtowns of traffic congestion. The relative efficiency of one way streets in moving traffic precluded the need to acquire additional right of way in order to minimize displacement and disruption impacts to downtowns, which was identified as a key benefit to existing business operators and owners during this period.

In addition one way couplets were so effective in relieving congestion and increasing traffic flow it was also seen from a policy point of view as a key economic development tool to attract businesses to downtown. The Chamber of Commerce of the United States advocated this technique in their publication "One Way Business Streets".

Couplets consist of a variety of couplet types. Some cities established one way systems on their main commercial street, and other larger cities reconfigured their entire downtown into a system of one way couplets.

Advantages and Disadvantages of One Way Couplets

There are both advantages and disadvantages of one way couplets, discussed below:

Advantages of One Way couplets

There are three broad categories of advantages associated with one way couplets: safety, capacity and convenience. The following provides a summary of such advantages by category:

Safety

In general, intersections of one way couplets have significantly less vehicular and pedestrian conflict points. These are points of conflicting circulation between vehicles, and/or vehicles and pedestrians. Studies have illustrated that one way couplets reduce pedestrian accidents and vehicular accidents.

As an illustrative example the following comments are provided:

- Intersections of two way streets with a single pass through lane approach, right and left turn lanes, permitted right turns on red (“RTOR”), have twenty (20) vehicular and pedestrian conflict points.
- Similar intersections of one way streets with turns and RTOR permitted (similar to above) have only four (4) vehicular and pedestrian conflict points.

The reduced number of conflict points at a one way street intersection results in a substantial reduction in vehicular to vehicular and vehicular to pedestrian accidents as compared to two way street operations.

Wiley in 1959 found New York City had a 25% reduction in intersection pedestrian accidents at one way intersections after conversions from two way streets were undertaken². Studies also showed that the perceived impacts on businesses were unfounded. Johnson reported that installing a one way street system had no identifiable effect on business activity.³ In support, land values along a one way street converted from a two way operation in NYC were found to have increased 60% during the year following the change.⁴

The study also summarized its findings by indicating that the variables affecting customer purchases are extensive and cannot be attributed to a one way couplet alone.

Comments: One way couplets generally improve safety by reducing the number of pedestrian-vehicular and vehicular-vehicular accidents.

Capacity

One of the prime objectives of one way couplets is to improve the movement of vehicles along the network, in other words improving capacity. By improving capacity

² Wiley.T.T., “Traffic Engineering in the City of New York” ITE Traffic Engineering (Sept 1959), 11-13 ,50

³ Johnson, Donald N. “Economic Analysis of the One-Way Grid in Roseburg Oregon” ITE Journal Traffic Engineering (November 1995) 67-70.

⁴ Karagheuzoff, Theodore “Traffic Engineering Succeeds in New York City” ITE Traffic Engineering, (September 1972: 18-72).

and movement of vehicles along the couplet people can enter and exit downtown more quickly and with fewer hassles. In addition, one way couplets improve capacity without causing significant displacement and disruption impacts on the right of way (i.e. resulting in business expropriations).

Citing studies undertaken in New York City, the use of the one way couplet has also proven to reduce the number of stops along the network by 66%. Intersection delays were reduced by nearly 50%, and overall trip time was reduced by 22% to 33%⁵

Comments: The one way couplet significantly increases traffic capacity

Convenience

From a convenience perspective one way systems usually allow for better pedestrian crossing times and fewer accidents provided enough time is allocated on the signal crossing.

Comments: The one way couplet significantly increases the convenience of pedestrians and drivers.

Disadvantages of the One Way Couplet

The disadvantages of the one way couplet include the following:

- Infrequent users claim to be confused by a one way pattern, however the new network is learned readily;
- Motorists must travel around the block to reach a destination;
- Transit operators and passengers complain about longer walk paths to and from destinations, which results in added time necessary to get to and from destinations;
- Emergency vehicular movements and response times can increase; and,
- Vehicles located at a red light will generally “fill in the entire intersection” not allowing emergency response teams to continue unimpeded to their destination.

5.2 The Urban Design and Planning Response to the One Way Couplet

Starting in the 1990's the trend in many cities has been to convert one-way traffic back to two way traffic. This trend is not a result of the failure of the couplet, quite the contrary, the one way couplet was extremely successful in its objectives to improve circulation and traffic flow, but as a result of urban planners recognizing that there are other issues impacting the sustainability of downtown business areas, such as liveability, streetscape design, pedestrian access and movement.

As a result, a planning solution evolved that ignored transportation needs, and pedestrian malls were created. The pedestrian mall objective was to improve the liveability and pedestrian focus of the downtown historic and main commercial corridor. However, the majority of pedestrian malls in North America have failed miserably, as the transportation aspect of the system was ignored. Today planners believe that a busy street and sometimes a congested street translate into a measure of a healthy business environment. From a planner's perspective the efficient movement of

⁵ Karagheuzoff Ibid as above

cars through the downtown was only one objective, pedestrian access, urban and streetscape design etc. were also seen as key components of an overall master plan to support liveability.

Today the new objective is to reduce traffic speed and volumes to a level that is compatible with pedestrian traffic. One means of doing this is to convert the one way couplet to two way streets.

However, the ultimate goal of both objectives remains the same namely, to improve the “liveability and economic development potential” of downtowns.

5.3 Benchmark Review of the One Way Couplets that have been converted to Two Way Streets

The following section provides a summary of findings related to cities in which the one way couplet was reconfigured to two way streets. The following Table 2 provides a summary of the cities and the results of such conversions:

Table 2 Survey of Communities Converting Downtown Streets from 1-Way to 2-Way Traffic Circulation⁶

Location	Population	Type of couplet/ System	Findings of Conversion	Comment in Relation to Kelowna
West Palm Beach	85,000	West Palm Beach was touted as the most efficient city in America from a traffic system in because of the one way flow, limited parking and coordinated signal timing. The City adopted a new planning strategy including traffic calming and began the conversion of downtown streets (Clematis Street the main street). It was converted from one way back to two ways in 1996.	Clematis Street experienced a dramatic increase in new retail shops, restaurants, and residential use. They attribute this change to exchanging mobility (i.e. vehicle speed) with access brought by two way circulation as well as liveability through streetscape improvements. Increases in property values are sited.	The benefits are attributable to the success of the main commercial street (“Clematis mainstreet”) in West Palm Beach. The main street in Kelowna is Bernard, which is not subject to the couplet assessment. The success of the West Palm Beach example was that it was the main shopping street that was changed from one way couplet to a two way street provided access to and from the remaining two way couplets that existed at the end of Clematis and represented a key through fare to link between northbound and southbound traffic.
Toledo Ohio	323,000	City converted 3 one way streets to two-way and more are planned. Other changes included removing turning lanes adding angled parking, as well as adding new streetscape features.	Long time vacant buildings are now being occupied or sold to developers for new shops and restaurants. The downtown manager indicated “the new two-way streets and pedestrian enhancements have totally turned our center city around”.	This project has resulted in the wholesale conversion of one way road network originally instituted throughout the city. The success of these conversions is also linked to beautification and streetscape improvements initiatives. Kelowna only has one east west couplet and is considering a north south couplet and the remaining streets remain two ways throughout downtown. In addition Toledo is a significantly larger city.
Lafayette Indiana	50,000	Downtown had a paired one way traffic flow system (Main Street and Columbia Street- the main commercial corridor) for	Merchants were very concerned about the loss of traffic at first but found that business traffic actually picked up after the conversion. Some	The main commercial street was changed from a one way to a two way, whereas the supporting couplet link, Columbia was still maintained as a

⁶ Note: “Mainstreet” for the purpose of this assessment are those roads in which historically the original commercial activities were situated in small towns, or the main commercial streets in established towns.

		about 30 years until Main Street was converted back to a 2 way flow in 1994. Columbia Street was then paired with South Street (next parallel street) for 1 way flow at the same time. Prior to conversion business complained that the 1-way flow made it very difficult for customers to get around.	parking was lost to install left turn lanes. The cities Economic Development Officer who led the effort to convert back to 2-way indicated : “no one would want to go back to 1-way traffic on Main Street (the main commercial retail street)”	one way couplet to pair with South Street. Improving the main commercial street was successful but the maintaining of Columbia Street and South Street as part of a couplet pair was also a significant reason for its success as it addressed the transportation need. A balanced approach between planning and transportation was established.
Dubuque, Iowa	60,000	Located on the Mississippi River, the city has a significant tourist trade established with dog racing track, casino boat and hotels about three blocks from Main Street. The chamber of commerce was concerned about by pass traffic because of the one way loop around the central business district that required vehicles to go several blocks around the CBD.	This study reviewed the pedestrian mall that extends 4 blocks long and two blocks wide that had been circumvented by a 1 way road system that prevented access and visibility to the downtown that was anchored by the pedestrian mall. The pedestrian mall also bisects Main street. The two roads that would provide access to the pedestrian mall (one way pair) carry 6000 and 3000 vehicles per day, and have been converted in to two way streets.	According the City Transportation Officials the modification is working well. Again the success resulted from a number of transportation improvements that were matched with streetscape and design improvements in the CBD.
Hickory North Carolina	36,000	Located in the foothills of the Smokey Mountains and known as the “Furniture Capital of North Carolina” Hickory North has an annual influx of approx. 400,000 shoppers and tourists. Downtown has had recent losses with the closing of 2 department stores. The City completed a downtown master plan which recommended conversion of a 1-way traffic circulation system back to 2 way flow. Three major streets including 9 blocks of Main Avenue (the CBD) were converted back to two way flow.	Prior to the conversion there were serious concerns about congestion but this has not been an issue. The City Economic Development Officer says that the conversion has changed the city’s image to be more “user friendly” both the City and the businesses are happy with the conversion.	One must differentiate the conversion of a Main commercial street verses a street that functions both as a commercial and through traffic roadway. The Master Plan in addition to making recommendations regarding the changing of one way streets also identified a number of streetscape improvements and beautification strategies for downtown.

New Haven Connecticut	126,000	Downtown New Haven has a very historic town Green surrounded on each side by four streets (College, Church, Elm and Chapel). These streets were converted to 1 way traffic many years as well as several other major downtown streets. Chapel was converted to two way flow a number of years ago and most recently a section of College Street was converted back to a two way.	The conversion of part of College Street back to two way flow has been well received by downtown businesses and the general public. The Town Green Special Services District reports that visitors seem to be much more comfortable with the two way system and there is a greening movement to change several more downtown streets back to two way flow including the rest of College and Church Streets.	This provided a conversion of existing one way system to a two way streets system around an existing green (park) in the centre of town. This conversion resulted in a better traffic flow around the green, less confusion for the user especially for tourists. Ultimately this resulted in a traffic improvement rather than a direct benefit for downtown commercial activity and sales.
Charleston South Carolina	95,000	A portion of King Street already had two-way operation, but converted the entire street to two way in 1996.	The section that was changed is a minor business corridor and has experienced a dramatic increase in new retail and service businesses in the area. The area reported “the change has received both good and bad reviews”. Traffic congestion has also increased and some on street parking was eliminated.	There is not enough information related to this review to provide comment.
Lubbock Texas	200,000	In 1960 Main Street and 10 th Street were converted to one way pairs as the business district was thriving and traffic was an issue to the town. As a result of suburbanization, the early 1970's resulted in many of the businesses in downtown moving to suburban areas. In 1994 a group of citizens petitioned the City Council to restore two way traffic on Main Street. The purpose of this conversion was to make it less confusing for motorists and visitors, improved access and reduced travel distances to specific businesses along the network.	Since the change the City has not received any unfavorable comments and the general consensus is that the conversion has been beneficial to the central business district which is experiencing growth after several years of decline. Other streets are currently being planned of conversion back to 2 way traffic	No statistical evidence is provided in this review as to the benefits to downtown, nor was comment made in regard to the impact of natural economic business cycles (i.e. good economic times and bad economic times) and how this impacted business activity.

Source: Hyannis Main Street Business Improvement District, December 1999

A review of case studies in which one way couplets were reconfigured into two way streets, generally supported the conversion based on the comments provided by the local business community after such a transition was complete. Some impacts such as congestion and increased accidents were also identified.

However, one of the most significant limitations associated with this study was the lack of acknowledgment that during these conversions, streetscape design improvements and downtown beautification was also being implemented. In addition economic cycles (i.e. expanding and contracting economic cycles) were also not discussed. These external factors have had tremendous implications on the success of downtowns. Identifying that the one way couplet was the sole cause of the problems is not a valid or rational argument.

The proposed Kelowna couplet includes the creation of a one way couplet system while at the same time maintaining the majority of the two way network circulation throughout the downtown core. In addition, the proposed couplets are located at the extremities of the downtown core, as opposed to being proposed in the immediate centre of the central commercial district. The main historical business street, Bernard is not impacted by the proposed transportation initiative.

To make direct comparisons between what is being proposed in Kelowna with that of the other couplets referenced in this study is not justifiable, but it does provide a general understanding of what the perceptions are of other communities.

The following general comment can be provided:

- If the couplet is proposed along the main historic and commercial corridor of a city, (i.e. Bernard) the impact to those streets will be significant. If non core roads that are located in the downtown core but are not major commercial streets are considered as couplets, the impacts will be limited.

5.4 Summary

In general the assessment of the advantages and disadvantages of the one way couplet can be viewed as either a “transportation planning solution” or a “planning policy and urban design solution”, each with advantages and disadvantages depending on the issues.

It is our opinion that the most appropriate approach to the creation of a liveable, pedestrian friendly and accessible downtown core can only be accomplished through a balanced approach to the planning, urban design requirements while at the same time providing for the regional transportation needs of the downtown ensuring accessibility.

If viewed from a transportation planning solution perspective, the focus is on improving safety, capacity, convenience (including access) and improved environmental conditions through reduced emissions and noise.

The planning and urban design solution perspective considers factors related to liveability, streetscape design, pedestrian friendly access and a reduced traffic flow and speed in downtown.

From a historical perspective the evolution of solutions consisted of:

- transportation solutions without planning and design (i.e. couplets);
- planning and design solutions without transportation (i.e. pedestrian malls);
- and,
- a more holistic approach by combining the positive aspects of both.

The evolution is illustrated on Table 3 below.

Table 3: Issues and Policy Responses to Central Business District Developmental Issues

Issue	Yesterday Congested Central Business Districts	Today Vacated Central Business Districts	Emerging Trend Holistic Redevelopment of Central Business Districts
Period	1950's	1970's to 2000's	2000 and beyond
Type of Solution	Transportation	Urban Design and Planning	A Balanced Urban Design /Planning and Transportation Solution
Benefits	Safety Convenience Traffic Flow	Urban Design such as streetscape improvements, beautification studies. Planning such as Downtown Master Plans, density bonusing, integrated land use planning, pedestrian and bicycle circulation studies, transit studies to downtown.	Balance of the transportation needs for convenience, safety and improved traffic flow with that of the urban design and planning opportunities associated with downtown.
Examples	Main Street Conversions to One Way Streets. City Wide Couplets. One Way Couplets.	Business Improvement Areas ("BIA") Chamber of Commerce Downtown Associations Residential Associations (in Downtowns)	Evolving currently with the coordination of transportation network plans with streetscape improvement plans and beautification studies.

Source: TyPlan Consulting Ltd.

In terms of impacts on Kelowna's downtown, it is our opinion, that based on the literature reviewed it is unlikely that this area will experience a significant decline in retail sales as a result of this project.

However, the literature does suggest that specific businesses along the couplets themselves will be impacted. Those impacts will be specific to businesses that rely on through traffic such as gas stations and related convenience stores, motels, restaurants and cafes. To determine such impacts, the consultant has adapted the following methodology recently developed based on research conducted for National Cooperative Highway Research Program: Project 25-4.1:

1. Businesses along each proposed couplet should be inventoried and classified into establishment types with common characteristics, including dependence on pass- by traffic;
2. The effect of reduced highway access on business sales should be accounted for by adjusting sales for businesses located along each proposed alignment by a designated percentage change that is based on the relative importance of convenience of customer access to each type of business;
3. The effect of an increase or decrease in the average daily traffic volume on sales for business located along each couplet is then based on the percentage change in traffic volume, adjusted for the relative dependence of each type of business on pass – by traffic; and,
4. The percentage increase or decrease on business sales due to access restrictions and the percentage increase or decrease in business sales due to changes in traffic volumes are then combined to determine an overall percentage impact on sales for each type of business along the proposed alignment.

This recommended methodology has been modified and applied to section 6 of this report, entitled Impact Assessment.

6. Impact Assessment

6.1 Introduction

This section of the report provides an assessment of the potential impacts associated with the one way couplet, addressing the requirements as outlined in the terms of reference. This assessment considers the issues in context to three headings, planning, social and economic.

6.2 Planning

This section provides a summary of the potential impacts related to planning issues.

6.2.1 Impact on the “Smart Growth” Objectives of the City

Although outside the confines of our review, the proposed one way couplet supports the principles of smart growth as the couplet improves circulation and access within an existing urban centre, thereby reducing the need for new infrastructure to accommodate growth, supports a more compact urban form, as well as supports an increased urban density by providing for better access to and from the urban core.

6.2.2 Impacts on Walking, Cycling, Car Pooling and Transit Use

The existing City of Kelowna pedestrian and cycling master plan needs to be further refined to address the future changes to the road network. Routes should be identified to segregate and separate the potential conflicts between pedestrian, bicyclists and auto users, or design facilities in such a way as to integrate the various modes of transportation. The couplet will cause a disruption to current patterns utilized throughout the community therefore it will be prudent to refine the existing plan. From a transit perspective, the one way couplet and related changes to Pandosy impact a number of existing bus routes. The transit operator was contracted as part of this review to determine the direct impacts, however no response was presented to the consultant.

6.2.3 Impacts on Diversity of Retail and Service Commercial Use

For the downtown business district as a whole, the proposed one way couplet is not expected to have any significant impact on the diversity of retail and service commercial uses. The types of commercial tenants that are attracted to the downtown core with the existing road network will be the same as those attracted to the area subsequent to the conversion of Richter and Pandosy/Water into the one way couplet.

6.2.4 Impact on Access to Properties and Availability of Street Parking for Businesses

Access to properties and related on street parking remains one of the most significant issues to the Downtown Kelowna Association. Based on discussions with City Transportation Engineers regarding the loss of on street parking associated with the one way couplet in the downtown area, the impact will be minimal. However, in

order to accommodate turning movements onto Harvey Avenue approximately 20 parking spaces will be lost on Water Street between Water Street and the Queensway.

6.3 Social

This section of the report provides an assessment of the social issues associated with the proposed one way couplet.

6.3.1 Impact on Length of Residential and Commercial Tenure

The proposed one way couplets are not expected to have any significant impact on the length of commercial tenures in downtown Kelowna. For residential properties that front directly onto the couplets themselves, some very minor increase in tenant turnover may be expected due to liveability issues (i.e. more traffic creating a noisier environment). The same may be true, again to a very minor extent, on some of the side streets that provide access between the two couplets. Traffic calming measures (e.g. roundabouts, speed bumps etc.) could mitigate these impacts on the side streets.

6.3.2 Impact on Residential Rental Rates and Vacancy Rates

The proposed conversion of Richter and Water/Pandosy into one way couplet is not expected to have any measurable impact on rental rates or vacancy rates for the low rise apartment buildings located on these two streets. This being the case, landlords should not see any appreciable change in the net operating income of their revenue properties. This, in turn, implies that there will not be any noticeable impact on residential land values on either couplet.

6.3.3 Impact on Emergency Response

Emergency response considers ambulance, fire and RCMP service.

Ambulance Service

Ambulance service is provided from the location at 259 Lawrence Avenue in downtown Kelowna. Although minor adjustments are anticipated as a result of the couplet, no significant impacts were identified through discussions with Ambulance Service representatives.

Fire Service

The Kelowna Fire Station is located on the southwest corner of Water and Lawrence. In discussions with John Sharhon and Sid LeBeau of the fire department, both indicated that the proposed one way couplet would not represent a significant impact to operations. However they did mention that response times would be impacted for both the fire response and the rescue boat service, located at the public dock, on Water Street. These issues are discussed below:

- Response Service- Land- 60% of all response calls originate in the south (south of Bernard) and 40% of the calls originate in the north. In terms of traffic issues related to the couplet as traffic volumes will be significantly reduced along Pandosy, there does not appear to be an issue at this intersection, however Ellis intersection still remains a significant issue due to congestion and left turns; and,
- Response Service- Water- as the rescue boat is located at the public wharf, the fire department, to gain access must travel along Ellis and cut down to

get to the one way Water Street prior to gaining access to the rescue boat. This is not significant.

RCMP Service

In discussions with RCMP Police officer Scott Meadows indicated that response times may increase, due to the need to establish a new approach to/ from the precinct located on Water Street.

6.3.4 Neighbourhood Demographic Mix

To a very minor extent, the proposed conversion of Richter and Water/Pandosy into a one way couplet may accelerate the trend already in evidence of residential densification. As single family lots are consolidated and redeveloped into townhouses and low rise apartment projects (where supported by the Official Community Plan), the demographic mix of the neighborhoods will slowly evolve away from relatively young and large households (many with children) to relatively old and small households (most without children).

6.3.5 Social Interaction with Neighbourhoods

From a socio-community impact assessment perspective the criteria utilized to assess the impact on neighborhoods is defined as “Community Cohesion”. By definition it means the degree to which the day use and enjoyment of a neighborhood has been changed. Within the study area three neighborhoods have been identified, based on the community groups within the study area. These neighborhoods are:

- Kelowna South Neighborhood Association (KSAN);
- North End Residents Association (NERA);

And a third interest group,:

- Friends and Residents of the Abbott Street Heritage Conservation Area Society (FRAHCAS).

The neighborhoods are illustrated on Figure 2. Limited impacts are anticipated to the neighborhoods of the east KSAN and the NERA groups as the one way couplet effectively creates a barrier between the neighborhood and other uses. However, there is one significant impact area within the south KSAN neighborhood. The residences abutting Water/Pandosy on the south side of Harvey will now be situated one way arterial street along Water/Pandosy south of Harvey will accommodate additional traffic and create nuisance impacts in the vicinity.

Within the FRAHCAS neighborhood, the couplet improvements associated with the Harvey/Abbott Street intersection create a significant benefit to that neighborhood, as no left turns westbound onto Harvey from the south will be allowed, and through traffic crossing Harvey along Abbott will be eliminated. This will significantly reduce non local traffic currently using Abbott as a short cut to Harvey. It will also eliminate the cross traffic flowing north and south along Abbott.

6.3.6 Crime Rates

Department of Planning and Development in cooperation with Kelowna RCMP report Community Indicators Report No. 1 provides a detailed description of all the crimes committed within the study area. Identified in the report as areas C1, which is comprised of sub areas: C3 Downtown, C4 Kasugai Park, C5 Abbott and Leon, and

C6 City Park and Water Street, table 4 provides an illustration of the key crimes committed in each area.

Table 4 Crime Statistics for the Kelowna Downtown

Sub Area	Significant Crimes Committed by Area based on Number of (Actual) Crimes Identified (2003 year to date)
C3: Downtown	Total Criminal (599), Property (518), Traffic Violations (362), Collisions (222)
C4: Kasugai Park	Total Criminal (59), Total Drugs (25), Total Property (18), Assaults (12)
C5: Abbott and Leon	Total Criminal (133) Total Liquor (54), Total Drugs (27), Total Assaults (35)
C6: City Park and Water Street	Total Drugs (46), Total Liquor (33), Total Property (15) Assault (5)

Note Refer to City of Kelowna RCMP Report for Actual Numbers

As illustrated above, specific areas within the downtown core are known for certain crimes:

- Kasugai Park is known for drugs and criminal offences;
- Abbott and Leon is known for criminal, liquor, drugs and assaults; and,
- City Park and Water are to a lesser extent known for drug and liquor offences.

Through follow up discussions with RCMP Research Officer Scott Meadows regarding the impact of the proposed couplets on crime rates and response times, the following points were discussed:

- There has been a steady increase in “Calls for Service” of 5% per year over the last 5 years. This increase is directly proportional to the growth of Kelowna as a community. Calls for Service are the police term for the number of calls they receive from residents for service.
- The introduction of a one way couplet along Richter and Water will not have an impact on crimes committed through the City as crimes are directly proportional to population growth rather than changes to the transportation network.
- The RCMP will be slightly inconvenienced as their access to and from the station will require that car patrols adjust access to and exit from the precinct.

6.3.7 Redevelopment Potential of KSS Site

The proposed conversion of Richter from a two way street to a one way northbound arterial will restrict access to the KSS site at the southwest corner of Harvey and Richter. Restricting access may make it more difficult to subdivide the KSS site into residential and commercial sub areas and/or may necessitate the upgrading of access roads to the property from the south and west.

6.4 Economic Impact Assessment Study Area

This section of the report examines the economic impacts of the proposed one way couplet on the study area in general and on the downtown business district in particular. In order to provide some context and background data for this economic impact analysis, the consultants undertook three separate surveys:

- a survey of businesses and property owners located in downtown Kelowna;
- a survey of businesses located on Water Street in the Gastown area of Vancouver; and,
- a survey of businesses located on Highway 97 in Westbank.

The results of these three surveys are summarized in turn below.

In addition, a neighborhood survey was undertaken by the City of Kelowna. The results of the survey question pertaining to the proposed one way couplet are summarized in Appendix C at the back of this report.

DKA Member Survey

The Downtown Kelowna Association (DKA) represents over 750 business owners and 250 commercial property owners located in the central business district of the city. In order to determine the opinions of the DKA members with respect to the proposed one way couplet, a survey questionnaire was distributed by fax in March of 2003. A copy of the survey form is attached as Appendix A at the back of this report.

A total of 52 businesses responded to the questionnaire. Responses were provided by several different categories of businesses including retailers (e.g. A&B Sound and Mosaic Books), restaurants (e.g. The Keg and The Pantry), hotels (e.g. the Grand and the Prestige Inn), institutional uses (e.g. the Kelowna Art Gallery and the Kelowna Community Theatre) and a wide range of office tenants. Table 5 that follows provides a list of the respondents and a brief summary of their comments.

TABLE 5						
SURVEY OF DOWNTOWN KELOWNA ASSOCIATION MEMBERS(1)						
One Way Couplet Impact Assessment						
Business Name	Street Address	Business Type	Positive	Negative	None	Explanatory Notes
A&B Sound	425 Leon	tv stereo		x		inconvenient access for customers
A&B Sound Claims	425 Leon	claim centre		x		inconvenient access for customers
Alexander Cutlery & Gifts	565 Bernard	gifts			x	customers will adjust to road changes
Art Studio	421 Cawston	art studio	x			better access to downtown
BC Corps Of Commissioners	346 Lawrence	security service			x	most business is by phone & fax
Bishop & Company	347 Leon	law office		x		worse access to downtown
Bronze Rooster	559 Lawrence	art gallery		x		will reduce traffic on Lawrence
Bruckal Properties	653 Harvey	office		x		if access to property is restricted
Canadian Western Bank	1674 Bertram	bank			x	
CIBC	328 Bernard	bank		x		less convenient access
Commerce Centre	260 Harvey	real estate office		x		inconvenient for tourists
Demara Insurance Brokers	1665 Ellis	insurance broker	x			if Harvey/Ellis intersection upgraded
Eddy Wright Associates	1665 Abbott	bankruptcy trustee			x	not affected by road changes
Elizabeth Fry Society	347 Leon	social service agency	x			if pedestrian crossings are upgraded
Executive Home Locators	415 Leon	property locator	x			better access to downtown
Fashion Foundations	581 Lawrence	ladies wear			x	destination store with good service
Goldammer Designs	1449 St. Paul	design consultant			x	not affected by road changes
Grand Okanagan Resort	310 Water	hotel		x		less convenient access
Hannon Management	1433 St. Paul	construction manager	x			
Heart & Stroke Foundation	1456 St. Paul	non profit society			x	clients will get here regardless
Keg	1580 Water	restaurant		x		less exposure to drive by traffic
Kelowna Art Gallery	1315 Water	institutional		x		more truck traffic on Water
Kelowna Arts Council	1304 Ellis	arts council		x		one way streets are confusing
Kelowna Community Resources	255 Lawrence	social service agency			x	not affected by road changes
Kelowna Community Theatre	1375 Water	institutional		x		worse access to cultural district
Kelowna Financial Planning	347 Leon	financial service		x		less convenient access
Kelowna Fire Department	1616 Water	fire department		x		longer response times north of Lawrence
Kelowna Gospel Mission	259 Leon	social service agency			x	clients will get here regardless
Kelowna Husky	380 Harvey	gas station		x		less exposure to drive by traffic
Kid Canada Clothing	1310 Water	retail		x		need two way streets for heavy traffic
Lindek Graphics	1462 St. Paul	drafting services			x	
Mosaic Books	411 Bernard	book store		x		less pedestrian friendly ambiance
National Federation Of Blind	1455 Ellis	social service agency	x			if pedestrian crossings are upgraded
Pantry	430 Harvey	restaurant	x			traffic will flow more smoothly
Park Medical	1635 Abbott	medical office			x	
Pioneer Coffee	526 Doyle	wholesale/retail coffee		x		less drive by traffic
Prestige Inn	1675 Abbott	hotel		x		less convenient access
Pure Esthetics	532 Leon	beauty salon			x	if no change to left turns at Harvey/Ellis
Pushor Mitchell	1665 Ellis	law office	x			better access to downtown
Queensway Business Centre	389 Queensway	office		x		precedent of Leon/Lawrence couplet
Rapid Cash Advance	1460 Pandosy	financial service		x		inconvenient access for customers
Salloum & Company	327 Bernard	law office		x		
Smith Peacock	1615 Bertram	law office			x	change in access not important
Sold On Hold	546 Leon	messaging office	x			better access to downtown
Subway	515 Harvey	fast food		x		limited access results in lower sales
Sun City Physiotherapy	1468 St. Paul	health care office			x	access for customers not affected
Sunshine Theatre	1304 Ellis	theatre	x			if Harvey/Abbott intersection upgraded
Sun Travel Hostel	245 Harvey	hostel	x			better traffic flow on the highway
Ten Fashions	534 Bernard	ladies wear		x		less convenient access for shoppers
Tinker Kueng Churchill	1573 Ellis	law office		x		worse access to downtown
True Consulting Group	477 Leon	consultants		x		less convenient access for shoppers
Water Sport Rental	1310 Water	service (sports rentals)	x			better access to the waterfront

Respondents were asked if the proposed one way couplets would have a positive impact, a negative impact or no significant impact on their property or business. Answers to this question were as follows:

- Positive impact 12 (23%)
- Negative impact 26 (50%)
- No significant impact 14 (27%)

Generally speaking, respondents who indicated that the proposed one way couplets would have a positive impact felt that access to the downtown for vehicles and/or pedestrians would be improved. Not surprisingly, respondents who indicated that the proposed one way couplets would have a negative impact felt that access to the downtown would be adversely affected by the proposed one way couplets.

Over one quarter of all respondents felt that the proposed one way couplets would not have any significant impact on their business. These non impacted businesses were typically office tenants (e.g. lawyers, social service agencies, health care facilities) that do not depend on casual walk in traffic.

According to the survey, completed prior to the public open house, those opposed to the proposed couplets outnumber those in favour by about two to one. In our opinion, this result probably overstates the level of opposition to the proposed couplets because of a lack of knowledge about the proposed improvements along Harvey Avenue. For example, plans to provide two left hand turn lanes for eastbound traffic at the intersection of Harvey Avenue and Abbott Street were largely unknown to the members of the DKA at the time of the survey. Had this information been generally available, it is reasonable to assume that the level of opposition to the proposed one way couplets would have been somewhat lower.

6.4.1 Gastown Survey

Gastown is the historic area of Vancouver located immediately east of the central business district. Most of the streets in Gastown are one way; the major couplet is Powell/Water Street which carries traffic westbound through Gastown into downtown Vancouver and Cordova Street which functions in a similar capacity for eastbound traffic.

To determine the attitudes of businesses to this existing network of one way couplets, a survey of businesses located on Powell and Water Streets was undertaken by the consultant in April of 2003. A copy of this survey form is also attached as Appendix A at the back of this report.

A total of 21 businesses were surveyed; Table 6 that follows provides a list of these contacts as well as a very approximate estimate of their size (store area) and their type of business. Those persons contacted (typically the owner or manager of the business) were asked whether being on a one way street was good, bad or not important, whether a one way street had a positive or negative impact on pedestrian traffic, whether a one way street made it easier or harder for people arriving by car to get to the business and finally, whether they had any other comments regarding the one way street system in Gastown.

TABLE 6

LIST OF BUSINESSES CONTACTED IN GASTOWN(1)

Business Name	Street Address	Business Type	Store Size
Kimprints	41 Powell	posters & prints	2,000 sf
RJ Clarke	3 Alexander	cigars	2,000 sf
Brothers	1 Water	restaurant	6,000 sf
Old Spaghetti Factory	53 Water	restaurant	8,000 sf
Michelles	57 Water	gifts	4,000 sf
Inform	97 Water	furniture	14,000 sf
Vancouver Rug Import	101 Water	carpets	4,000 sf
Kites On Clouds	131 Water	kites	1,000 sf
Frances Hills	151 Water	ladies apparel	7,000 sf
Three Century Business	321 Water	antiques	1,000 sf
Canadian Impressions	357 Water	apparel & gifts	3,000 sf
Water Street Café	300 Water	restaurant	3,000 sf
Images	164 Water	art gallery	2,000 sf
Games People	157 Water	games	3,000 sf
Spirit Wrestler	8 Water	art gallery	3,000 sf
Millefiori	#102 The Mews	glass	1,000 sf
Angel	2 Powell	ladies accessories	1,000 sf
Blinding Light	36 Powell	cinema	5,000 sf
Industrial Artifacts	49 Powell	custom furniture	3,000 sf
Sweet Soul Design	91 Powell	art studio	2,000 sf
Sugar & Sugar	99 Powell	pub & lounge	6,000 sf

1) Development Consulting Group based on a survey conducted in April of 2003.

Responses to the first three of these questions are summarized as follows:

- Location On A One Way Street***

Good	2 (10%)
Bad	4 (19%)
Not Important	15 (71%)

- Impact On Pedestrian Traffic***

Positive	3 (14%)
Negative	7 (33%)
No Impact	11 (53%)

- Accessibility For People Arriving By Car***

Easier	0 (0%)
Harder	8 (38%)
No Impact	13 (62%)

Most respondents felt that being on a one way street was not important; other locational issues (in particular proximity to all of the social problems of the Downtown Eastside) were much more of a concern.

As far as impact on pedestrian traffic was concerned, a majority of respondents felt that a one way street had no impact. Most of those who cited a negative impact were concerned about the speed of traffic on Water Street and the danger this posed for pedestrians trying to cross the street.

Just over one third of the respondents felt that a one way street made it more difficult for people driving a car to get to their business. The majority of respondents felt that this was not an important issue since the extra driving time was minimal (only a few minutes) once people became familiar with the network of one way streets in downtown Vancouver. One of the restaurants surveyed indicated that the one way street was a problem not for the customers but for staff who provided valet parking and had to drive a round about route between the restaurant and a nearby parkade.

Many of the businesses in Gastown are very dependent on the tourism business. Most of these tourists stay at the large hotels in downtown Vancouver and either walk to Gastown or take a guided bus tour that stops on Water Street. For this segment of the market, the one way streets in Gastown are a non issue.

In some respects, the most interesting result of this survey was the response of business owners and managers to the question about any other comments regarding the one way street system in Gastown. By far the biggest concern was the lack of on street parking close to their business (Water Street has no on street parking and the number of spaces on the intersecting side streets is very limited).

For most of the businesses surveyed, this lack of on street parking was a much bigger issue than the one way street system in Gastown. This suggests that the City of Kelowna should make every effort to minimize the loss of on street parking along the Water Street portion of the proposed southbound couplet.

6.4.2 Westbank Survey

Westbank is a rapidly growing community located on the opposite side of Lake Okanagan from Kelowna. Highway 97 provides the link between these two communities. For a distance of about ten city blocks, Highway 97 splits into a northbound and southbound couplet (Dobbin and Main Streets) through the downtown core of Westbank. Both of these couplets have two lanes of through traffic with pull out bays for parallel parking on both sides of the street.

To determine the attitudes of businesses to this existing network of one way couplets, a survey of businesses located in downtown Westbank was undertaken by the consultant in April of 2003. The survey form used was identical to the one in Gastown attached as Appendix A at the back of this report.

A total of 16 businesses were surveyed; Table 7 that follows provides a list of these contacts as well as a very approximate estimate of their size (store area) and their type of business. Those persons contacted (typically the owner or manager of the business) were asked whether being on a one way street was good, bad or not important, whether a one way street had a positive or negative impact on pedestrian traffic, whether a one way street made it easier or harder for people arriving by car to get to the business and finally, whether they had any other comments regarding the one way street system in Westbank.

TABLE 7			
<u>LIST OF BUSINESSES CONTACTED IN WESTBANK(1)</u>			
<u>Business Name</u>	<u>Street Address</u>	<u>Business Type</u>	<u>Store Size</u>
Lordco	Westridge Centre	auto accessories	5,000 sf
Pharmasave	Westridge Centre	drug store	6,000 sf
Coopers	Westridge Centre	supermarket	15,000 sf
Vintage Shop	2483 Main	gifts	1,000 sf
Schmidt Jewellers	2477 Main	jewellery	3,000 sf
Lavones	2477 Main	stationery	1,000 sf
Pampered Pets	2441 Main	pet supplies	2,000 sf
Outbound Cycle	2417 Main	bikes	2,000 sf
Good Guys	2409 Main	entertainment systems	3,000 sf
City Lites	2424 Main	restaurant	2,000 sf
BC Liquor Store	Westbank Centre	liquor store	8,000 sf
Video Update	Westbank Centre	video rentals	6,000 sf
Budget Brake & Muffler	2406 Dobbin	auto accessories	2,000 sf
Quality Greens	3717 Old Highway	fruits & vegetables	4,000 sf
M&M Meats	3715 Old Highway	meat	1,000 sf
MT Muggs	2405 Main	pub	4,000 sf

1) Development Consulting Group based on a survey conducted in April of 2003.

Responses to the first three of these questions are summarized as follows:

- Location On A One Way Street

Good	1 (6%)
Bad	9 (56%)
Not Important	6 (38%)

- Impact On Pedestrian Traffic

Positive	0 (0%)
Negative	1 (6%)
No Impact	15 (94%)

- Accessibility For People Arriving By Car

Easier	0 (0%)
Harder	6 (38%)
No Impact	10 (62%)

A majority of respondents felt that being on a one way street was bad because it reduced the amount of traffic driving by their business by half. Impact on pedestrian traffic was a non issue for the simple reason that there is virtually no pedestrian traffic along either couplet at the present time.

As in Gastown, just over one third of the respondents in Westbank felt that a one way street made it more difficult for people driving a car to get to their business. As in Gastown, the majority of respondents in Westbank felt that this was not an

important issue since the extra driving time was minimal (only a few minutes) once people became familiar with the one way couplet.

Unlike Gastown, Westbank has plenty of on street parking on both of the one way couplets. As a result, concerns about on street parking (or the lack thereof) are much less of an issue in Westbank than in Gastown. Nevertheless, several businesses surveyed in Westbank expressed concern about the amount of on street parking taken up by bus transit stops located near their premises. Once again, this suggests that the City of Kelowna should make every effort to minimize the loss of on street parking along the Water Street portion of the proposed southbound couplet.

6.4.3 Economic Impact Assessment: Downtown Kelowna

As previously noted, the study area encompasses all of downtown Kelowna. For all intents and purposes, this central business district extends from Richter in the east to Lake Okanagan in the west and from Clement in the north to Harvey in the south. These boundaries are similar to those of the Downtown Kelowna Association.

This downtown core includes virtually all of the retail, service commercial and office space in the study area. If the proposed couplets and the associated improvements to Harvey Avenue end up making it more difficult for customers to get into downtown Kelowna, then it is reasonable to conclude that many of the businesses located in this area would be negatively impacted.

At the present time, major vehicle movements into the downtown core occur via the following routes:

- Westbound along Harvey Avenue and then north into downtown via Richter, Bertram, Ellis, Water and Abbott;
- Westbound along Bernard Avenue and the north or south via Richter, Bertram, Ellis, Pandosy, Water and Abbott;
- Westbound along Clement Avenue and then south via Richter, St. Paul, Ellis and Water;
- Eastbound off the Lake Okanagan Bridge along Harvey Avenue and the north into downtown via Abbott, Water, Ellis, Bertram and Richter;
- Northbound along Richter, Ellis, Pandosy, Water and Abbott.

In our opinion, the proposed changes to the north/south intersections along Harvey Avenue together with the conversion of Richter and Pandosy/Water into northbound and southbound couplets respectively will have no significant impact on the overall accessibility of the downtown core to local area residents driving into this area from the east, west or south.

For people driving in from the west (i.e. from Westbank), widening the Lake Okanagan Bridge will significantly reduce peak hour congestion and make it a lot easier to get into downtown Kelowna during the morning and afternoon rush hours as well as on busy summer weekends and holidays. The provision of two left turn lanes at Abbott and one left turn lane at both Ellis and Richter will also make it easier to turn north into the downtown core for eastbound traffic on Harvey and should more than offset the loss of northbound access via Water.

For people driving in from the east along Clement or Bernard, the conversion of Richter into a one way northbound couplet should not have any significant impact on either travel times or on ease of access into the downtown core. For westbound

traffic on Bernard, it should actually become easier to cross Richter Street and drive into the downtown core. Traffic flowing eastbound on Leon should also find it easier to cross Richter.

For people driving in from the east along Harvey, new right hand turn lanes at Richter and Ellis will make it easier to access downtown via these two main streets. Access via Bertram and Pandosy will essentially remain as is. The loss of access at Water Street should not be significant for the downtown area as a whole although it does have significant implications for businesses located on Water Street itself. (as discussed in this report).

For people driving in from the south, the proposed one way couplets will force a significant realignment of commuting patterns. According to the traffic studies completed by Ward Consulting Group, northbound traffic will shift primarily onto Richter and secondarily onto Ellis; southbound traffic will shift primarily onto Water/Pandosy and secondarily onto Abbott.

According to the Ward Consulting study, the total volume of traffic crossing an imaginary east/west screen line north of Harvey Avenue is expected to be similar under the existing road network and the proposed one way couplet system. In other words, the proposed one way couplet system should not have any significant impact on the number of persons coming into downtown Kelowna from the residential neighbourhoods to the south of Harvey Avenue. Once again, this suggests that the proposed one way couplets will not have any significant impact on the downtown area as a whole although they may have varying implications for businesses located on Richter, Water and Pandosy Streets (as discussed in the following sections).

For tourists who will obviously not be as familiar with the local road network as local area residents, the proposed one way couplets could have a very minor negative impact on a few downtown businesses as some people miss the permitted turning intersections on Harvey Avenue and then decide to continue driving east or west on Highway 97. In our opinion, installation of proper highway signage for major attractions including Skyreach Place, the Grand Hotel, the Lakeside Casino and the Bernard Avenue shopping area should mitigate this negative impact to the point of insignificance.

In June of 2000, the Maclean Marketing Group undertook a telephone survey of Kelowna area residents to determine their opinion of the downtown area. In response to a question about means of transportation used to get downtown, 86% indicated that they drove a vehicle, as compared to 7% who walked, 5% who took public transit and only 1% who rode a bike.

Some of the people who walk into the downtown area come from the residential neighbourhoods just east of Richter. The proposed conversion of Richter into a one way northbound couplet should actually make it safer for pedestrians crossing this street on their way to/from the downtown core.

For people living south of the downtown core, the issue is not so much the proposed one way couplets but rather the changes to the pedestrian crossings on Harvey Avenue itself. Pedestrian crossings at Abbott, Water, Ellis and Richter are expected to remain essentially unchanged as part of the proposed network changes. Pedestrian access at Pandosy, however which will be blocked by the construction of a new raised median to separate eastbound and westbound traffic on Harvey Avenue at this intersection.

Once again, our opinion is that the proposed one way couplets and the intersection improvements on Harvey Avenue will not have any significant impact on pedestrian access to downtown Kelowna as a whole. Clearly, however, the construction of a median along Harvey Avenue at the Pandosy intersection will have a negative impact on pedestrian traffic volumes on Pandosy north of Harvey Avenue.

The proposed widening of the Lake Okanagan Bridge and improvements to the street intersections along Harvey Avenue should reduce bus travel times to/from downtown Kelowna from the east and west. According to the operator of the local transit system, the proposed one way couplets are not expected to have any significant impact on round on-board trip travel times but may somewhat increase the time it takes passengers to get to and from transit stops when travelling between the downtown core and the residential neighbourhoods south of Harvey Avenue. As a result, there is no reason to believe that the number of transit users will be negatively impacted by the proposed one way couplets.

For the proportion of downtown visitors who use a bike, the proposed one way couplets should not be an issue for the neighbourhoods to the north and east of the central business district. For people living south of Harvey Avenue, the loss of crossing privileges at Pandosy due to the construction of a raised median will be an inconvenience for some.

Of greater concern in the long run, as traffic volumes on Harvey Avenue make it more and more difficult to cross at any street intersection, for both pedestrian movements and vehicular movements is the link between the bike paths in these neighbourhoods and the underpass that runs below the approach to the Lake Okanagan Bridge just west of Abbott Street. The importance of this link for both pedestrians and bike riders will be discussed in the final section of this report.

The vast majority of commercial space located above the street level in downtown Kelowna is occupied by office type tenants. Because of the nature of their business, they will not be affected to any significant extent by the proposed one way couplets.

For street level businesses, on the other hand, the volume of drive by vehicle traffic and/or walk by pedestrian traffic may be very important. Accordingly, the next three headings deal in turn with street level businesses located on Richter, Water and Pandosy Streets.

6.5 Economic Impact Assessment: One Way Couplets

6.5.1 Economic Impact Analysis: Richter Couplet

Commercial land uses fronting onto the Richter couplet currently extend from the intersection of Harvey Avenue in the south to the intersection of Bernard Avenue in the north. The first column of Table 8 that follows lists all of the ground floor commercial tenants on this portion of Richter. The third column of Table 8 identifies the type of business.

TABLE 8 BUSINESS INVENTORY ON RICHTER STREET(1)			
Business Name & Location	Street Address	Business Type	Sales Impact
<u>Clement To Cadder (east side)</u>			
Petrocanada	715 Harvey	gas station & convenience store	low
Great Canadian Oil Change	1735 Richter	auto repairs & car wash	low
<u>Clement To Cadder (west side)</u>			
Interior Savings	678 Bernard	credit union	none
Safeway	697 Bernard	supermarket	low
Dollar Stores	1626 Richter	office	none
Equinox Financial	1626 Richter	office	none
Sprott College	1626 Richter	education	none
DND Recruitment Centre	649 Leon	office	none
Berkshire Group	1664 Richter	office	none
BC Employment Standards	1664 Richter	office	none
Shell	634 Harvey	gas station & convenience store	low
Quizno	653 Harvey	fast food	low
Liberty Tax Service	653 Harvey	office	none
1) Development Consulting Group & Typlan Consulting based on a field survey conducted in March, 2003. The inventory does not include office tenants located above the ground floor, institutional uses or home based businesses.			

A total of thirteen businesses are listed in Table 8. Of this total, eight are not expected to notice any negative impact on the level of business subsequent to the conversion of Richter from a two way street to a one way northbound couplet.

These non impacted businesses include the Interior Savings Credit Union, the head office of Dollar Stores, Sprott College, the Department of National Defence Recruiting Centre and the BC Government Employment Standards Branch office. All of these businesses either face little or no competition in the Kelowna market or are major destinations that customers will drive/walk to regardless of the configuration of the local road network.

Five commercial businesses along this portion of Richter Street may be impacted to a low level by the proposed one way couplet. These five low impact businesses are:

- The Safeway supermarket at the corner of Richter and Bernard;
- The Quizno fast food outlet at the southwest corner of Richter and Harvey;
- The Petro Canada gas station at the southeast corner of Richter and Harvey;
- The Shell gas station at the northwest corner of Richter and Harvey;
- The Great Canadian Oil Change outlet next to the Petro Canada gas station.

These five businesses have a combined floor area of approximately 31,000 square feet; the Safeway supermarket accounts for about 80% of this total floor area.

None of these five businesses responded to the survey of DKA members described above. The owner of the building in which Quizno is a tenant did answer the survey and cited concerns about access to the property subsequent to the upgrading of the Harvey Avenue/Richter Street intersection. An assistant manager of the Safeway Supermarket was interviewed in the store by the consultant.

Preliminary plans provided to the consultant by the City of Kelowna Engineering Department indicate that vehicle access will be maintained to the Quizno parking lot for both eastbound traffic on Harvey and northbound traffic on Richter. Northbound traffic on Richter will also have safer access to the Safeway parking lot since it will no longer have to cross in front of southbound traffic.

According to traffic studies completed by Ward Consulting Group, conversion of Richter from a two way to a one way street will increase the afternoon peak hour traffic volume in a northbound direction from 570 to 750 vehicles per hour. This increase will be more than offset, however, by the elimination of all southbound traffic (currently 1,110 vehicles per hour). The net result is therefore expected to be a reduction in the afternoon peak hour traffic volume from 1,680 to 750 vehicles per hour.

Unfortunately, the Ward Consulting Group traffic studies do not indicate average daily traffic volumes on Richter either before or after conversion to a one way northbound street. Based on a telephone conversation with Trevor Ward, the principal of the firm, it has been assumed that the significant reduction in afternoon peak hour traffic volume on Richter cited above will be largely offset by an increase in morning peak hour. This being the case, average daily traffic volumes on Richter is not expected to change significantly. Even so, some businesses may be impacted if they depend more heavily on either morning or afternoon drive by traffic volume.

In any event, the five impacted businesses listed above are not entirely reliant on drive by traffic that currently goes north and south on Richter Street because of their high profile corner locations. A significant portion of the business for the two gas stations, for example, comes from traffic driving east/west along Harvey Avenue. Similarly, the Safeway supermarket attracts a significant number of shoppers from the residential neighbourhoods east of Richter.

Loss of on street parking can have a significant negative impact on nearby businesses. At the present time, there is no on street parking along Richter between Harvey and Bernard and no change is planned as part of the couplet design.

With this background assessment in mind, the impact of the Richter Street couplet on the five businesses listed above is expected to be low. The loss of sales resulting from existing customers taking their business elsewhere (e.g. to a supermarket in the Mission area or further east on Harvey Avenue) is expected to range between 5-10%. Based on this percentage and the inventory of commercial space undertaken by the consultant, projected sales losses for all of the businesses located on Richter Street are estimated at between \$735,000-\$1,470,000 as shown on the first line of Table 11.

6.5.2 Economic Impact Analysis: Water/Pandosy Couplet

Commercial land uses fronting onto the Water/Pandosy couplet currently extend from the intersection of Harvey Avenue in the south to the intersection of Clement Avenue in the north. The first column of Table 9 that follows lists all of the ground floor commercial tenants on this portion of Water/Pandosy as well as several restaurants located on the second floor of a building (e.g. The Keg and Coyotes). The third column of Table 9 identifies the type of business.

Note that this inventory does not include a number of large institutional type land uses located on Water Street between Harvey and Clement. Land uses in this category include City Hall, the Law Courts, the Kelowna Yacht Club, the Kelowna Community Theatre, the Kelowna Art Gallery and Skyreach Place. Given the one of

a kind destination nature of these land uses, they should not be impacted to any significant extent by the proposed Water/Pandosy couplet.

TABLE 9 BUSINESS INVENTORY ON WATER STREET(1)			
Business Name & Location	Street Address	Business Type	Sales Impact
<u>Clement To Cadder (east side)</u>			
BC Tree Fruits	1473 Water	office	none
Sturgeon Hall	1481 Water	restaurant	low
CIBC	328 Bernard	bank	none
Business Development Bank	313 Bernard	bank	none
Water Street Dental Centre	1687 Water	dentist	none
Interiors By Shannon	1691 Water	interior decorating	none
Chicago Grill	311 Harvey	restaurant	positive
<u>Clement To Cadder (west side)</u>			
Malibu Marine	1302 Water	boat sales	low
Grand Creations	1306 Water	florist	low
Grand Bay Café	1310 Water	restaurant	low
Sherry Grand Apparel	1310 Water	ladies wear	low
Grand Fitness Spa	1310 Water	health club	low
Sven Sandberg	1310 Water	jewellery	low
Grand Gallery	1310 Water	art gallery	low
Ten Grand Gifts	1310 Water	gifts	low
Vines	1310 Water	restaurant	low
Colour Room	1320 Water	beauty salon	low
Air Hart Float Plane Tours	1326 Water	plane tours	none
Thompson Okanagan Tourism	1332 Water	office	none
DJ	1346 Water	restaurant	low
Lake City Casino	1300 Water	casino	none
Roses	1352 Water	pub	low
Coyotes	1352 Water	restaurant	low
Runnals Denby	1470 Water	office	none
Tafco	1476 Water	realtor	none
Bank Of Montreal	294 Bernard	bank	none
Fusion Clothing	299 Bernard	ladies wear	low
Mon Thuong	1530 Water	restaurant	low
Fresco	1560 Water	restaurant	low
Keg	1580 Water	restaurant	low
no name	??? Water	auto detailing	low
Event Dynamics	1690 Water	office	none
McDonalds	1746 Water	restaurant	positive
1) Development Consulting Group & Typlan Consulting based on a field survey conducted in March, 2003. The inventory does not include office tenants located above the ground floor, institutional uses or home based businesses.			

A total of thirty three businesses are listed in Table 9. Of this total, fourteen are not expected to notice any negative impact on the level of business subsequent to the conversion of Water from a two way street to a one way southbound couplet.

These non impacted businesses include the CIBC, the Business Development Bank, and the Bank of Montreal, the Thompson Okanagan Tourism office, the Lake City casino, the Tafco real estate office and the Water Street dental centre. Once again, all of these businesses either face little or no competition in the Kelowna market or are major destinations that customers will drive/walk to regardless of the configuration of the local road network.

Two restaurants are located at the southeast and southwest corners of Harvey Avenue and Water Street (McDonalds and Chicago Grill respectively). These two restaurants have a combined floor area of approximately 9,000 square feet.

At the present time, traffic volumes on Water Street south of Harvey are minimal. Subsequent to the completion of the Water to Pandosy connector south of Harvey Avenue and the construction of a median along Harvey Avenue through the Pandosy intersection, traffic volumes on Water Street south of Harvey are expected to increase dramatically. This should have a positive impact on the sales volume of both McDonalds and Chicago Grill. To a minor extent, the positive impacts for these two restaurants will offset the negative impacts for businesses located north of Harvey Avenue.

Fourteen commercial businesses along this portion of Water Street may be impacted to a low level by the proposed one way couplet. These fourteen low impact businesses as shown in Table 9 have a combined floor area of approximately 32,000 square feet. The downstairs Roses pub and upstairs Coyotes restaurant located next to the Grand Hotel together account for almost one third of this total floor area.

Several of these fourteen businesses responded to the survey of DKA members described above. Some of these respondents felt that converting Water into a one way street would hinder access for customers which would in turn have a negative impact on their business. The Keg, the largest single restaurant on Water Street, is worried about less exposure to drive by traffic and the negative experience in other (unnamed) cities. A&B Sound, one of the largest retailers in downtown Kelowna along with Safeway, expressed similar concerns even though the A&B store is located on Leon a half block off Water Street

With regards to these two major chains, it should be noted that The Keg recently opened a new restaurant on Thurlow Street in downtown Vancouver. In this particular block, Thurlow is a one way street southbound street with two lanes of traffic and parallel parking on both sides during non rush hour times. During the rush hour (3-6PM), parking is prohibited and Thurlow becomes a four lane arterial. According to the restaurant manager, being located on this one way street was not a negative factor for their customers.

It should also be noted that the flagship store for A&B Sound in downtown Vancouver is located on Seymour Street. In this particular block, Seymour is a one way northbound street with two lanes of traffic and parallel parking on both sides during non rush hour times. During the rush hour (7-930 AM), parking is prohibited and Seymour becomes a four lane arterial.

A&B Sound has operated from this location for over twenty years. It is reasonable to assume that if a one way street were a major negative factor affecting sales, the company would have relocated this store to a location on a two way street somewhere else in the downtown core.

According to traffic studies completed by Ward Consulting Group, conversion of Water from a two way to a one way street will increase the afternoon peak hour traffic volume in a southbound direction from 290 to 1,360 vehicles per hour. This huge increase more than compensates for the elimination of all northbound traffic (currently 260 vehicles per hour). The net result is therefore expected to be an increase in the afternoon peak hour traffic volume from 550 to 1,360 vehicles per hour.

Once again, however, the Ward Consulting Group traffic studies do not indicate average daily traffic volumes on Water either before or after conversion to a one way southbound street. Based on a telephone conversation with Trevor Ward, the principal of the firm, it has been assumed that the significant increase in afternoon peak hour traffic volume on Water cited above will be largely offset by a decrease in morning peak hour traffic volume. This being the case, average daily traffic volumes on Water Street is not expected to change significantly.

Loss of on street parking can have a significant negative impact on nearby businesses. According to the City of Kelowna Engineering Department, the conversion of Water to a one way southbound couplet will result in the loss of all on street parking between Leon and Harvey (approximately 15 stalls). Fortunately, none of the negatively impacted businesses identified above are located on this block of Water Street.

With this background assessment in mind, the impact of the Water Street couplet on all of the businesses listed above is expected to be low. The loss of sales resulting from existing customers taking their business elsewhere (e.g. to a competing restaurant or retail outlet elsewhere in downtown) is expected to range between 5-10%. For the two positively impacted restaurants on the south side of Harvey Avenue, sales gains of a similar magnitude are expected. Based on this percentage and the inventory of commercial space undertaken by the consultant, projected net sales losses (i.e. total losses less total gains) for all of the businesses located on Water Street are estimated at between \$645,000-\$1,290,000 as shown on the second line 2 of Table 11.

6.5.3 Economic Impact Analysis: Pandosy Street

At the present time, Pandosy Street north of Harvey Avenue carries both northbound and southbound traffic to/from the downtown core. Although no changes in this regard are planned in conjunction with the one way couplets themselves, related improvements include construction of a median down the middle of Harvey Avenue through the existing Pandosy Street intersection.

The effect of this median will be to preclude north/south traffic and pedestrian movements through the intersection of Pandosy Street and Harvey Avenue. Furthermore, southbound traffic on Pandosy will have to turn westbound on Harvey while eastbound traffic on Harvey will not be permitted to turn north onto Pandosy. Only northbound turns onto Pandosy for westbound traffic on Harvey will remain as is. In our opinion, the net result of this proposed intersection redesign will be to significantly reduce average daily traffic volumes on Pandosy between Harvey and Bernard.

Data from the Ward Consulting Group traffic studies appears to substantiate this opinion. Subsequent to the conversion of Richter and Water into one way northbound and southbound couplets respectively and the modification of the Harvey/Pandosy intersection as described above, afternoon peak hour traffic volumes on Pandosy are projected to drop from 350 to 170 vehicles per hour northbound and from 620 to 110 vehicles per hour southbound. Total two way afternoon peak hour traffic volume on Pandosy is therefore expected to drop from 970 to 280 vehicles per hour.

Once again, the reader is cautioned that the Ward Consulting Group traffic studies do not indicate average daily traffic volumes on Pandosy either before or after completion of the proposed one way couplets and intersection modifications. Unlike

Richter Street, however, there is no reason to believe that the dramatic drop in afternoon peak hour traffic volumes noted above will be offset by an increase in traffic volumes during the rest of the day.

On the contrary, the interruption of north/south traffic movements across Harvey Avenue and the elimination of left hand turns for eastbound traffic on Harvey are expected to cause traffic volumes on Pandosy to drop regardless of the time of day. This reduction in exposure to drive by traffic is expected to have a significant negative impact on commercial businesses located on Pandosy between Harvey and Bernard.

The first column of Table 10 that follows lists all of the ground floor commercial tenants on this portion of Pandosy. The third column of Table 10 identifies the type of business.

TABLE 10			
BUSINESS INVENTORY ON PANDOSY STREET¹			
Business Name & Location	Street Address	Business Type	Sales Impact
<u>Bernard To Harvey (east side)</u>			
Mosaic	411 Bernard	books	low
Canadian Jewellery Exchange	1545 Pandosy	jewellery	medium
Cop Out Records	1561 Pandosy	records	medium
Urban Oasis	1567 Pandosy	coffee shop	medium
Posh Gallery	1579 Pandosy	jewellery	medium
Enigma	1585 Pandosy	home furnishings	medium
Dry Dock	1603 Pandosy	ladies wear	medium
Amore Bridal	1607 Pandosy	bridal salon	medium
Folks Golf & Curling	1615 Pandosy	sports	medium
Kelowna Orthodontic	1619 Pandosy	dental	none
Daffodil Café	1623 Pandosy	restaurant	medium
Burnaby College	1631 Pandosy	educational facility	none
Canadian Cancer Society	1633 Pandosy	office	none
My Travel	1649 Pandosy	travel agent	medium
Lotowski & Company	1675 Pandosy	accountant	none
Love Shop	1687 Pandosy	other retail	medium
Pantry	430 Harvey	restaurant	low
<u>Bernard To Harvey (west side)</u>			
Starbucks	387 Bernard	coffee shop	low
Hemplogic	1546 Pandosy	other retail	medium
Reid Gallery	1560 Pandosy	art gallery	medium
Memories	1562 Pandosy	cd	medium
Scruples Hair Design	1566 Pandosy	beauty salon	medium
Uniglobe	1568 Pandosy	travel	medium
Silk FM	1598 Pandosy	radio station	none
Verve	??? Pandosy	coffee shop	medium
Bloomers Floral Design	1650 Pandosy	florist	medium
Christian Life Fellowship	1678 Pandosy	social service agency	none
Husky	380 Harvey	gas station and garage	low
Chevron	375 Harvey	gas station	low
1) Development Consulting Group & Typlan Consulting based on a field survey conducted in March, 2003. The inventory does not include office tenants located above the ground floor, institutional uses or home based businesses. Sales impacts assume that The City of Kelowna will undertake an extensive streetscape beautification along Pandosy from Harvey to Bernard.			

A total of twenty nine businesses are listed in Table 10. Of this total, only six are not expected to notice any negative impact on the level of business subsequent to the restriction of turning movements at the Harvey Avenue/Pandosy Street intersection.

These non impacted businesses include the Burnaby College, the Canadian Cancer Society, and the Silk FM radio station, the Christian Life Fellowship, an orthodontist and an accountant. Once again, all of these businesses either face little or no competition in the Kelowna market or are major destinations that customers will drive/walk to regardless of the configuration of the local road network.

Mosaic Books and a Starbucks coffee shop occupy the southeast and southwest corners of Bernard Avenue and Pandosy Street. The Pantry restaurant, a Husky gas station and a Chevron gas station are located at the northeast, northwest and southwest corners of Harvey Avenue and Pandosy Street respectively.

These five businesses have a combined floor area of approximately 7,000 square feet. Because they all have relatively high profile corner sites, they should be less affected by the anticipated drop in vehicle and pedestrian traffic along Pandosy Street than the other businesses listed in Table 10 that are located between Harvey and Bernard.

The other eighteen commercial businesses along this portion of Pandosy Street are expected to be negatively impacted to a greater extent by the drop in drive by traffic. These eighteen medium impact businesses as shown in Table 10 have a combined floor area of approximately 28,000 square feet. Major retailers in this group include Bloomers (a florist), Amore (a bridal shop), Enigma (home furnishings), Dry Dock and Lee (ladies wear) and Posh Gallery (jewellery).

With this background assessment in mind, the impact of the loss of traffic along Pandosy Street on all of the businesses listed above is expected to range between low and moderate. For the five corner stores, the loss of sales resulting from existing customers taking their business elsewhere is expected to range between 5-10%. For the other eighteen commercial businesses, the loss of sales is expected to range between 10-20%.

Based on these percentages and the inventory of commercial space undertaken by the consultant, total projected sales losses for all of the businesses located on Pandosy Street are estimated at between \$705,000-\$1,410,000 as shown on the third line of Table 11.

6.5.4 Economic Impact Analysis: Summary

The fourth line of Table 11 provides an estimate of the total impacts of the proposed one way couplets on businesses located on Richter, Water and Pandosy Streets. For all three streets, the proposed one way couplets are expected to have a low negative impact on 96,000 square feet of space, a medium negative impact on another 28,000 square feet of space (all on Pandosy) and a low positive impact on 9,000 square feet of space (all on Water). Total net sales losses for all affected businesses located on these three streets are projected to range between \$2,085,000-\$4,170,000.

Based on field work undertaken by the consultant several years ago in conjunction with a study of the Westbank town centre, the amount of retail, restaurant and service commercial space in downtown Kelowna (the area from Harvey Avenue north to Clement Avenue and from Richter Street west to Abbott Street) is currently estimated at approximately 400,000 square feet. Note that this figure does not include vacant space certain non sales producing service businesses such as financial institutions most office tenants or any institutional land uses such as the Kelowna Art Gallery, the library and the provincial courthouse.

Using an average productivity range of between \$250-\$300 per square foot of store area (a reasonable figure in our opinion given the size of the Kelowna market, the tenant mix in the downtown core, the strength of the suburban shopping centres and so on), the total sales volume of all retail, restaurant and service commercial businesses located in downtown Kelowna is currently estimated at between \$100-\$120 million. Based on this estimate, the projected loss of sales for businesses on Richter, Water and Pandosy Streets as noted above amounts to between 2-4% of current revenues for downtown Kelowna as a whole.

The reader should note that this minimal impact (in percentage terms at least) has been determined based on the assumption that downtown Kelowna currently contains approximately 400,000 square feet of retail, restaurant and service commercial space. If this figure turns out to be low, then the percentage impact of the one way couplets will be even less than the 2-4% calculated above.

In our opinion, most of these lost sales (80%-100%) will simply be transferred to competing businesses located elsewhere in downtown Kelowna. Sales lost to competing businesses located outside the downtown core (e.g. along Highway 97 either east or west of downtown) are expected to be minimal (no more than 10-20%). No loss of sales is expected to businesses located outside of the Metro Kelowna area as a whole.

By way of a concluding note to this section of the report, it should be pointed out that this estimate of total net sales losses is based on the assumption that the City of Kelowna will not make any significant effort to mitigate the negative impacts associated with the proposed one way couplets. In our opinion, there are a number of things that the City could (and should) do to at least partially offset these negative impacts.

Accordingly, the final section of this report provides a brief outline of some of these mitigation measures. The final section of this report also identifies the extent to which the projected sales losses identified above could be reduced as a result of these mitigation measures.

TABLE 11					
<u>BUSINESS IMPACT ASSESSMENT(1)</u>					
<u>Business Type & Location</u>	<u>Amount Of Commercial Space Impacted</u>			<u>Low</u>	<u>Projected Net Sales Los</u>
	<u>Negative</u> (minus 5-10%)	<u>Negative</u> (minus 10-20%)	<u>Negative</u> (minus 20-30%)	<u>Positive</u> (plus 5-10%)	
Richter Street Couplet(2)	31,000 sf	0	0		\$735,000-\$1,470,000
Water Street Couplet(3)	58,000 sf	0	0	9,000 sf	\$645,000-\$1,290,000
Pandosy Street(4)	7,000 sf	28,000 sf	0	0	\$705,000-\$1,410,000
Total All Streets	96,000 sf	28,000 sf	0	9,000 sf	\$2,085,000-\$4,170,000

1) Development Consulting Group and Typlan Consulting estimates.
 2) Richter Street from Harvey to Bernard.
 3) Water Street from Clement to Harvey.
 4) Pandosy Street from Harvey to Bernard.
 5) Projected net sales loss equals total negative impacts less total positive impacts (if any).

6.6 Other Economic Impacts

6.6.1 Tourist Choices of shopping Areas

The one way couplet actually improves access to Downtown as a result of intersection improvements. What is needed to resolve any impacts related to the tourist choices of shopping areas is a significant signage program that provides directions and details regarding the downtown activities and services.

There is one significant interchange that impacts tourist choice. Pandosy, traditionally the key arterial providing access to and from downtown from south of Harvey will now be limited to right in right out turns significantly reducing access to the downtown along this street. Again from a tourist perspective this is not as significant as most tourists travel along Harvey, however it will impact local access. Again through signage this negative impact can be significantly reduced.

6.6.2 Local Area Residents Choice of Shopping Areas

For the downtown area as a whole, the proposed one way couplets are not expected to have any significant impact on the choice of shopping areas by local residents. In particular, no noticeable transfer of sales from the downtown core to the suburban shopping areas is anticipated.

6.6.3 Impact on Commercial Lease Decisions

For the downtown area as a whole, the proposed one way couplets are not expected to have any significant impact on commercial leasing decisions. On Pandosy between Harvey and Bernard, some change in the tenant mix is expected over time as high traffic retailers slowly give way to lower traffic service commercial and storefront office tenants. Increased pedestrian and/or bike traffic along this portion of Pandosy will not affect the expected loss of vehicular traffic.

6.6.4 Impact on Commercial Property Values

In theory, a drop in retail sales should cause retail rents to fall which in turn should cause property values to decline by a corresponding amount. In practice, so many other forces are affecting the market that it is very difficult to quantify this sequence of events except in rather extreme cases.

As noted above, the proposed one way couplets are expected to reduce sales for some businesses located along Richter and Water by between 5-10% and increase sales for some businesses located along Water by a similar amount. Given the many other factors affecting the commercial property market in downtown Kelowna at the same time (inflation, changing levels of competition in various segments of the retail market, the outlook for the regional economy, tourism trends, etc. etc.), an increase or decrease of sales in the 5-10% range due to the proposed one way couplets is not expected to have any noticeable impact (either positive or negative) on the value of commercial property values located along the affected portions of Richter and Water Streets.

Along Pandosy Street, on the other hand, where negative impacts of between 10-20% are projected for many businesses located between Harvey and Bernard, some reduction in property values due to rent reductions for existing tenants and/or conversions of some existing retail space into lower rent paying service commercial or storefront office tenants should be expected.

The most affected stretch of Pandosy is expected to be the 1500 and 1600 blocks of the street. According to data provided by the City of Kelowna, the total assessed value of properties on these two blocks is approximately \$2.7 million for land and approximately \$3.7 million for improvements (buildings) for a combined total of about \$6.4 million.

As noted in this report, some businesses in these two blocks (e.g. Silk FM, Canadian Cancer Society, Christian Life Fellowship) should not be affected by the proposed one way couplets and should therefore continue to pay rent at current levels. With these unaffected businesses in mind, property values in the 1500 and 1600 blocks of

Pandosy Street are projected to drop by between 5-10%. Based on these percentages and the assessments noted above, the overall impact of the proposed one way couplets could be a reduction of between \$320,000-\$640,000 in aggregate assessed value for property owners along Pandosy Street.

Once again, it should be pointed out that this estimate of total property value losses is based on the assumption that the City of Kelowna will not make any significant effort to mitigate the negative impacts associated with the proposed one way couplets. The final section of this report provides a brief outline of some mitigation measures and also identifies the extent to which the projected property value losses identified above could be reduced as a result of these mitigation measures.

6.6.5 Rental Rates and Vacancies

The proposed one way couplets are not expected to have any significant impact on rental rates and vacancy rates for commercial property in the downtown core as a whole. As noted above, a decline in rental rates of between 10%-20% may occur along Pandosy between Harvey and Bernard. The vacancy rate for ground floor commercial space may also increase along this portion of Pandosy as its focus shifts away from retail to service commercial and storefront office uses.

6.6.6 Impact on Leon/Lawrence

Leon Avenue is currently a one way street for eastbound traffic between Abbott and Richter. One block to the north, Lawrence Avenue carries traffic westbound between Abbott and Richter. Leon and Lawrence both have two lanes of traffic with angle parking on one side of the street and parallel parking on the other.

Local residents in general and members of the DKA in particular have expressed concerns about the urban environment on Leon and Lawrence. These concerns relate primarily to the nature of the land uses on the street, the lack of retail activity and the low levels of pedestrian traffic in this portion of the downtown core.

A number of people believe that this current situation on Leon and Lawrence is attributable primarily to the one way flow of traffic on these two streets. As a result, concerns have been expressed that converting Richter and Water/Pandosy into one way couplets may cause the urban environment to deteriorate even further on Leon and Lawrence.

In our opinion, these concerns are unfounded. More specifically, we believe that the current state of affairs on Leon and Lawrence is largely unrelated to the one way flows of traffic on these two streets.

On Lawrence Avenue, the low levels of pedestrian traffic and the lack of a shopper friendly environment can be attributed in large part to the lack of storefront development. On the north side of Lawrence between Richter and Bertram, for example, virtually the entire block is taken up by the back side of the Safeway supermarket. On the next block west (from Bertram to Ellis), the principal land uses are a number of surface parking lots and the back end of the Town Centre Mall. Ironically, this unattractive mix of land uses along Lawrence Avenue can be explained in large part by the pedestrian friendly nature of development along Bernard Avenue. As previously noted, the typical built form along this main shopping street is a one or two storey building with retail and service commercial uses at grade and office space above. Parking for these buildings is provided at the back of the lot which usually extends south to Lawrence Avenue.

Unfortunately, rental rates for ground floor retail space in downtown Kelowna are too low at the present time to justify the provision of underground parking for small buildings fronting onto Bernard Avenue. Until rental rates increase to the point that underground parking becomes financially feasible, surface parking lots will remain an important land use along Lawrence Avenue.

The combination of surface parking lots and back of building facades makes it virtually impossible to develop a pedestrian friendly environment on Lawrence Avenue. Converting Lawrence Avenue from a one way street back to two way traffic as has been suggested by some will do little, in our opinion, to improve this situation. Surface parking lots are also a major land use along Leon Avenue as are storefront offices (the law firm of Doak Shirreff, the Central Okanagan Brain Injury Society and CHBC TV are typical examples). Of greater concern in terms of their impact on the urban environment are a number of businesses clustered along that portion of Leon between Abbott and Ellis. These businesses include a number of nightclubs (Illusions, Cheetahs, Gotcha, Splash), several social service agencies (Kelowna Community Resources, Kelowna Gospel Mission, Christian Life Fellowship, Kelowna Metis Family Services, Kelowna Friendship Society) and a number of ancillary land uses including the Helping Hand second hand store and the Gospel Mission hostel.

The concentration of this type of land use makes it virtually impossible to develop a pedestrian friendly environment on Leon Avenue. This concentration of what many shoppers consider to be undesirable land uses has presumably developed over a period of many years. Once again, converting Leon Avenue from a one way street back to two way traffic as has been suggested by some will do little, in our opinion, to improve this situation. In addition other factors must be taken into consideration prior to making a decision to convert the one way system, such as turning movements, parking impacts and overall transportation needs along these network streets.

Having said all that, the generally accepted view in the development industry and the planning community alike is that two way streets are more conducive to a successful retail environment than one way couplets. For all of the reasons cited above, however, we would not expect the conversion of Leon and Lawrence back to two way traffic to have any significant impact on the level of retail activity in this portion of downtown Kelowna.

6.6.7 Kelowna One Way Couplet Study: Summary of Public Open House Comments

A public open house was held at the Kelowna Library on May 1st, 2003, from 4pm to 8pm to discuss the proposed one way couplets along Richter Street and Water Street in Kelowna.

In total, twenty eight (28) individuals signed in, however, it was estimated that approximately 100-130 people attended the open house.

The consultant received 41 responses to questionnaires regarding the couplet study. This section provides an abbreviated summary of those responses and represents the consultants' summary of the pertinent issues that were stated at the open house. Actual responses are provided in Appendix B of the main document.

Question 1: What do you think are the positive attributes of the Couplets?

The following general summary is provided:

- 12 respondents indicated that there were no positive attributes associated with the couplets;
- 12 respondents indicated that it will improve traffic flow and circulation and move cars more quickly from place to place such as from Sky Reach etc. However these benefits were at a cost to pedestrians; and,
- The closing of Abbott Street to left turns onto the bridge for northbound traffic was a good thing.

Comment: Although it was recognized that the transportation improvements did resolve some traffic issues, concerns associated with the continued liveability of downtown were identified.

Question 2: What do you think are the negative attributes of the Couplets?

Overall, respondents identified more negative impacts than positive impacts of the couplets on Kelowna. These negative impacts can be categorized into the following major topic headings:

- 13 respondents were concerned about additional traffic and the impact of this traffic on the community;
- 9 respondents were concerned about the impact of the couplets on neighborhoods;
- 9 respondents were concerned about the loss of business in downtown;
- 8 respondents were concerned about the “liveability” impacts on the downtown, such as pedestrian access, ambiance, and access to downtown.

Comment: The key thrust of the negative impacts involved the social and economic impacts related to the neighborhoods and the business activity. An underlying theme was the lack of planning for other modes of transportation downtown such as pedestrian and cyclist paths and access to downtown.

Question 3 Do you have any other comments regarding the proposed couplet?

This question resulted in three common themes including:

- 9 respondents did not support the proposed couplets;
- 7 respondents wanted other options to be investigated, such as a longer term plan for transportation, or a review of using Gordon to facilitate north/south traffic movements; and,
- 4 respondents were concerned about the lack of planning for other modes of transportation.

Comment: Overall, of those that responded to the questionnaire, there was limited support for the couplets. However a limited understanding of the technical issues and the related social and economic impacts and preliminary mitigation opportunities was also evident through discussions with the public open house participants.

7. Conclusions

7.1 Conclusions

In terms of impacts on Kelowna's downtown, it is our opinion, that based on the literature reviewed it is unlikely that this area will experience a significant decline in retail sales as a result of this project.

However, the literature does suggest that specific businesses along the couplets themselves will be impacted. Those impacts will be specific to businesses that rely on through traffic such as gas stations and related convenience stores, motels, restaurants and cafes.

A number of people believe that the current situation related to land uses on Leon and Lawrence is attributable primarily to the one way flow of traffic on these two streets. In our opinion, these concerns are unfounded. More specifically, we believe that the current state of affairs on Leon and Lawrence is largely unrelated to the one way flows of traffic on these two streets.

This section of the report provides a summary of the impacts anticipated as a result of the one way couplets. The summary of impacts is presented as follows:

- **Impact Assessment: Specific Responses to the Terms of Reference**
- **Impact Assessment: Positive Impacts**
- **Impact Assessment : Negative Impacts**
- **Impact Assessment: Mitigation Considerations**

7.1.1 Impact Assessment: Specific Issues Summary

As outlined in the terms of reference a number of specific impact questions were posed. Based on our assessment Table 12 provides a summary of such impacts:

Table 12 Summary of Potential Impacts by Impact Category

Impact Category	No Impact	Minimal Impact	Significant Impact	Comment
Impact on the smart growth objectives of the City	No Impact			
Impacts on diversity or retail and service commercial uses		Minimal Impact		Some conversion of ground floor space on Pandosy from retail to service commercial and store front office
Potential for high density residential development		Minimal Impact		Possible densification of residential use along and abutting Richter and Water Street.
Access to properties and		Minimal Impact		Loss of street parking on Water Street as well as on Richter Street.

availability of street parking				
Impact on residential		Minimal Impact		Faster turnover of residential tenants due to increased traffic and nuisance impacts along couplet
Impact on emergency response times		Minimal Impact		Although an increase in response times was identified by RCMP, fire and ambulance, mitigation can be used to minimize impacts
Impact on neighborhood demographic mix		Minimal Impact		Potential conversion of single family residences to multi family along Richter means the potential for an increase in the number of 1 to 2 person households, fewer children and more seniors
Impact on social interaction within neighborhoods		Minimal Impact		Neighborhood at Water Pandosy south of Harvey will be impacted due to new arterial road located adjacent to residences and increased nuisance impacts
Impact on crime rates	No Impact			No impact as crime is a function of population rather than transportation improvements
Impact on tourist choices or shopping areas	No Impact			Through driving adjustments and proper signage tourist choices will not be impacted
Impact on local area residents choice of shopping areas	No Impact			Resident choices will not be impacted
Impact on commercial space leasing decisions		Minimal Impact		Impacts dependent upon location. Less traffic volumes may result in decreased leasing associated with specific streets
Impact on sales volume of business		Minimal Impact		Impacts will be focused on the couplets Water Street and Richter Street. In addition Pandosy Street will be impacted due to limited vehicular access the project would provide
Impact on rental rates and vacancy rates for multi-family buildings and hotels	No Impact			Impacts specific to market conditions
Impact on residential and commercial land values	No Impact for residential	Minimal Impact for Commercial		Residential property values will not be impacted by changes. Commercial property values on specific streets such as Pandosy may be impacted due to loss of vehicular traffic

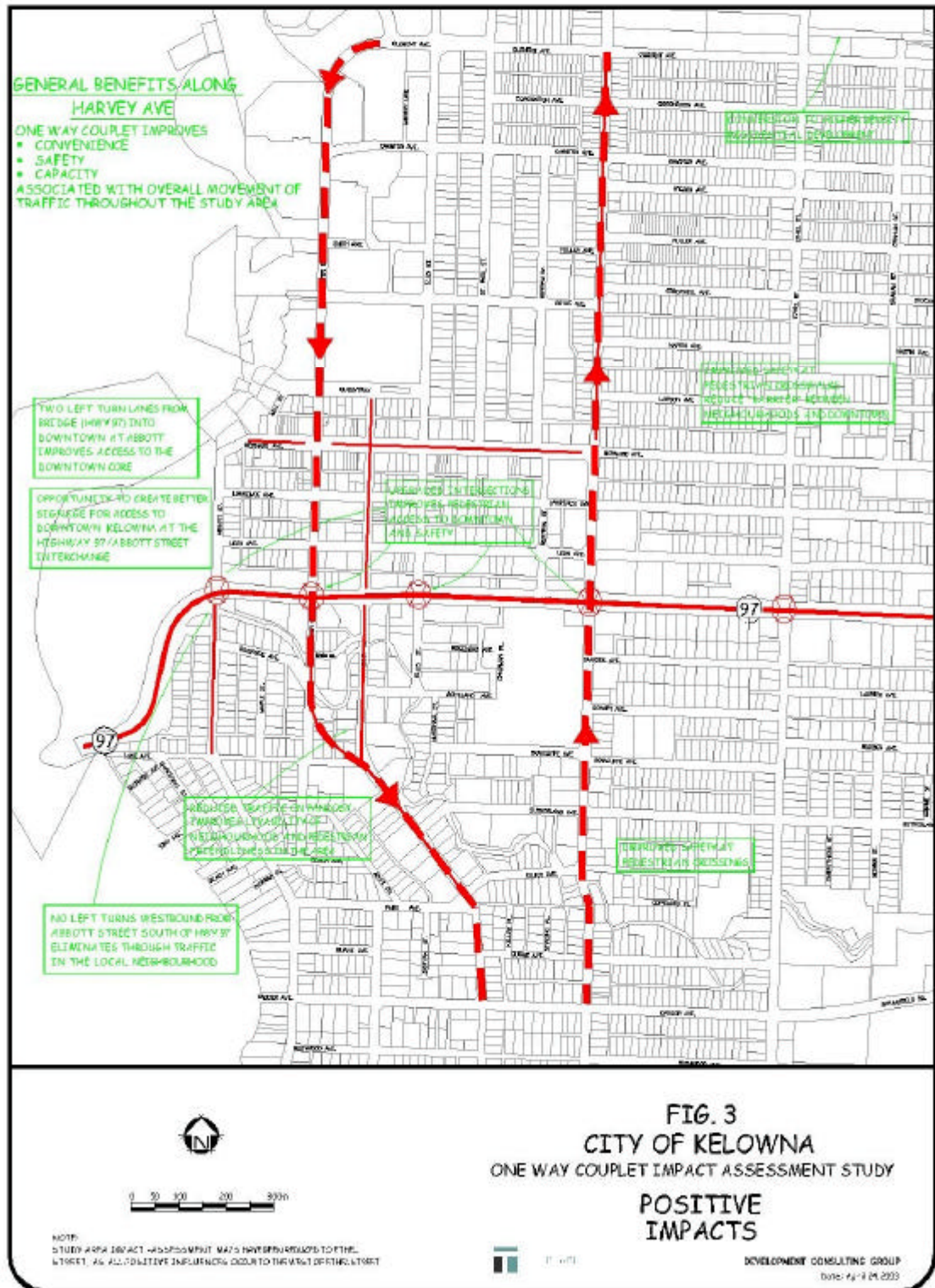
Note: Refer to report for details on impacts

7.1.2 Impact Assessment: Positive Impacts

Figure 3 illustrates the positive impacts the proposed one way couplet will provide the residents of the Kelowna region. The major positive influences of the couplet include:

- The general benefits of the one way couplets include improved convenience, safety and capacity associated with the overall movement of traffic throughout the downtown;
- Improved access to downtown from Abbott Street due to the introduction of two left turn lanes into downtown;
- Left turns from Abbott Street onto Harvey Street from the south and through traffic on Abbott crossing Harvey have been eliminated, preventing traffic to intrude into the FRACAS neighborhood;
- Pedestrian crossings will be improved at Abbott, Ellis, and Richter improving pedestrian safety between the downtown and residential areas to the south;

Refer to Figure 3 for a detailed summary of positive impacts.

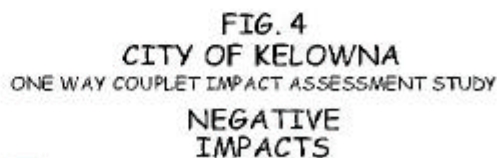


7.1.3 Impact Assessment: Negative Impacts

Figure 4 illustrates the general negative influences of the proposed couplet. The major negative impacts associated with the couplets include:

- Potential loss of revenue for certain businesses located along the one way couplets (i.e. Richter, Water) due to changes in the traffic volumes and circulation patterns;
- Potential loss of revenue for certain businesses located along Pandosy Street due to significant volume changes and circulation patterns being disrupted;
- The one way couplet connecting Water Street to Pandosy Street will cause the displacement of both single family residences and a medium density apartment building; and,
- Increase in traffic volumes through residential neighborhoods as a result of vehicles trying to cut across the either couplet.

Refer to figure 4 for a detailed summary of negative impacts.



7.1.4 Impact Assessment: Mitigation Techniques to be Considered

This impact assessment has identified both positive and negative impacts, including an assessment of potential revenue sale losses and reductions in commercial property values associated with the one way couplets.

The most important follow up activity is to mitigate the impacts identified above. In many cases through the identification of proper mitigation techniques those negative impacts, can be minimized. The implementation of such mitigative techniques and the continued downtown improvements can significantly reduce the potential revenue losses identified in this report.

7.2 Mitigation

As in all urban transportation infrastructure projects positive benefits are generally attributed to the community at a regional level, whereas negative impacts are usually specific to localized areas. The following mitigative measures discuss specific actions that can be undertaken to minimize these impacts.

Mitigation # 1: Improved Signage

Improve signage to downtown from Highway 97 Harvey at all intersections accommodating access into the downtown. In addition, create themed signage for access to downtown as well as provide signage to major land uses (e.g. Skyreach Place, Grand hotel and Lakeside Casino, etc) and directional signage to City parkades.

Mitigation # 2 Use of City Parkades

Encourage the use of City parkades to provide parking for both locals and tourists during the summer. Signage program outlining direction will also help promote the parkades.

Mitigation # 3 Maintain Existing Pedestrian and Bicycle Access Across Highway 97/Harvey

Negotiate with the MoT improvements associated with the key pedestrian and bicycle accesses from downtown to the south neighborhoods. This should include widening the existing tunnel and the provision of better lighting, painting and signage. A no net loss of access policy should be applied

Mitigation # 4 Take Actions to Promote Livability

In those areas impacted by the couplets, such as the neighborhood immediately south of Harvey to the east of the Water Street / Pandosy Street connection, propose options to promote liveability. These liveability issues include connectivity, neighbourhood circulation and traffic calming measures.

Mitigation # 5 Traffic Calming and Transit Measures

Review opportunities for traffic calming measures to those areas in which the couplets will impact circulation patterns and impact on the intrusion of automobiles in neighborhoods. An example would be the potential increase in cross traffic through residential streets to get to the couplets.

In order to overcome any negative impacts arising from increased walking distances to/from transit stops, consideration of an additional bus loop to maintain the current level of accessibility to transit serving the downtown should be addressed in light of the changes to the road network. This should be discussed with BC Transit and the City of Kelowna.

Mitigation # 6 Pedestrian Oriented Design in the Downtown Core

Identify those downtown streets that should take on a more pedestrian street focus to enhance downtown as a pedestrian friendly area. In support also identify those streets whose primary focus will be to provide for the transportation needs of downtown.

Mitigation # 7 Prepare a pedestrian and bicycle master plan for Downtown

Prepare a specific pedestrian and bicycle master plan for the downtown area that incorporates transportation planning, downtown beautification and circulation patterns. The bicycle master plan should consider whether a cycling counter flow lane could be added on Richter/Pandosy.

Mitigation # 8 Focus Urban Design and Streetscape Improvements on Pandosy Street

Refocus Pandosy as the main north-south pedestrian roadway to connect with Bernard Avenue, the main east –west pedestrian roadway. Promote the Bernard Avenue and Pandosy Street intersection as a key landmark and meeting place highlighting downtown activities.

Mitigation # 9 Promote the downtown as a Residential and Office Focal Point

Identify and support higher density residential development in and around the downtown core. Promote the downtown as the centre of office space in Kelowna through planning policy, and limit any additional multi-storey office development outside the downtown core.

The successful implementation of the above noted mitigation measures will, among other things, reduce the extent of the sales losses for businesses located on Richter, Water and Pandosy Streets. This reduction could be between 1/3 and 1/2 of these lost sales. Based on these percentages, the projected loss of sales for businesses on Richter, Water and Pandosy Streets could be reduced to as little as 1%-2% of current revenues for downtown Kelowna as a whole.

Finally, as identified in this review, the successful implementation of urban design improvements, streetscape improvements and planning policy supporting higher density residential development, continued focus on office development, and an improved transportation network will further enhance the attractiveness of downtown for retail, office and residential living over the longer term.

As previously identified any approach to revitalization must balance the urban design and planning initiatives to downtown renewal with that of transportation needs within the community.

Appendix A: DKA Member and Gastown/Westbank Surveys

DKA Member Survey

ONE WAY COUPLET IMPACT STUDY SURVEY FORM

The Ministry of Transportation and Highways and the City of Kelowna are proposing the following changes to the existing road network in the downtown area:

- widening the Lake Okanagan bridge from 3 lanes to 5;
- upgrading the intersections on Harvey Avenue (Highway 97) at Abbott, Water, Pandosy, Ellis, Richter and Gordon;
- converting Richter into a one way northbound couplet from Cadder north to Clement;
- converting Water-Pandosy into a one way southbound couplet from Clement south to Cadder.

Do you think that these proposed changes will have a positive impact, a negative impact or no significant impact on your property or business ?

Please check one _____ Positive Impact
_____ Negative Impact
_____ No Significant Impact

Please indicate the reason or reasons why you believe this to be the case.

To help us tabulate the responses to this survey, please tell us a bit about yourself.

Please check one or both as appropriate _____ Property Owner
_____ Business Owner

Name of property or business _____

Address of property or business _____

Type of business _____

Please fax your completed survey form back to the attention of Clint McKenzie at the DKA office (fax number is 250 862 5204) by Friday, April 11th.

Thank you for your help.

GASTOWN/WESTBANK ONE WAY COUPLET SURVEY FORM (SAMPLE)

Name of Business _____

Address of Business _____

Type of Business _____

Store Area _____ square feet

Your business is located on a one way street (part of highway 97 through Westbank). Is a location on a one way street good, bad or not important?

Good	1
Bad	2
Not Important	3

Why is that? _____

In your opinion, does a one way street have a positive impact, a negative impact or no impact on pedestrian traffic?

Positive	1
Negative	2
No Impact	3

Why is that ? _____

In your opinion, does a one way street make it easier, harder or have no impact on accessibility of your business for people arriving by car?

Easier	1
Harder	2
No Impact	3

Why is that? _____

Do you have any other comments regarding the one way street system in Westbank?

Contact Name _____

Contact Telephone Number _____

Appendix B: Open House Response Summary (individual responses enclosed)

Kelowna One Way Couplet Study: Summary of Public Open House Comments

A public open house was held at the Kelowna Library on May 1st, 2003, from 4pm to 8pm to discuss the proposed one way couplets along Richter Street and Water Street in Kelowna.

In total, twenty eight (28) individuals signed in, however, it was estimated that approximately 100-130 people attended the open house.

The consultant received 41 responses to questionnaires regarding the couplet study. This section provides an abbreviated summary of those responses and represents the consultants' summary of the pertinent issues that were stated at the open house. Actual responses are provided in Appendix B of the main document.

Question 1: What do you think are the positive attributes of the Couplets?

The following general summary is provided:

- 12 respondents indicated that there were no positive attributes associated with the couplets;
- 12 respondents indicated that it will improve traffic flow and circulation and move cars more quickly from place to place such as from Sky Reach etc. However these benefits were at a cost to pedestrians; and,
- The closing of Abbott Street to left turns onto the bridge for northbound traffic was a good thing.

Comment: Although it was recognized that the transportation improvements did resolve some traffic issues, concerns associated with the continued liveability of downtown was identified.

Question 2: What do you think are the negative attributes of the Couplets?

Overall, respondents identified more negative impacts than positive impacts of the couplets on Kelowna. These negative impacts can be categorized into the following major topic headings:

- 13 respondents were concerned about additional traffic and the impact of this traffic on the community;
- 9 respondents were concerned about the impact of the couplets on neighborhoods;
- 9 respondents were concerned about the loss of business in downtown;
- 8 respondents were concerned about the "liveability" impacts on the downtown, such as pedestrian access, ambiance, and access to downtown.

Comment: The key thrust of the negative impacts involved the social and economic impacts related to the neighborhoods and the business activity. An underlying theme was the lack of planning for other modes of transportation downtown such as pedestrian and cyclist paths and access to downtown.

Question 3 Do you have any other comments regarding the proposed couplet?

This question resulted in three common themes including:

- 9 respondents did not support the proposed couplets;
- 7 respondents wanted other options to be investigated, such as a longer term plan for transportation, or a review of using Gordon to facilitate north/south traffic movements; and,
- 4 respondents were concerned about the lack of planning for other modes of transportation.

Comment: Overall, of those that responded to the questionnaire, there was limited support for the couplets. However a limited understanding of the technical issues and the related social and economic impacts and preliminary mitigation opportunities was also evident through discussions with the public open house participants

Appendix C: Neighborhood Survey, City of Kelowna

Neighbourhood Survey* (n = 369, representing 26% return rate)

Question: Current City Transportation plans call for Richter St. and Pandosy/Water Streets to eventually become 2 to 3 lane one-way streets with widening at key intersections (Richter would be one-way northbound, and Pandosy one-way southbound). This is proposed in order to add road network capacity without the need to add an overpass at Richter St. (and Highway 97) and without the need to make Richter as wide as the portion of Gordon Drive south of Harvey Ave. Converting to one-way streets is expected to cost approximately \$20 to \$30 million less than alternative network expansions. What do you think about this?

Question 4 – Code Meanings

		Responses	Number	Percentage
1	Support	176	48	%
2	Don't Support	90	24	%
3	No Opinion	98	27	%
4	Multiple Answers	5	1	%
	Total	369	100	%

Question 4 Reasons – Code Meanings

(Support - options)

1	Cost	37	10	%
2	Improve traffic flow	65	18	%
3	Safety and/or noise	19	5	%
4	Good solution	26	7	%
5	No elaboration	16	4	%
6	Misc	13	4	%
	Total	76	48%	

(Don't Support - options)

	Heavier traffic on side streets	26	7	%
	(Widening) Increase in speed driven	7	2	%
7	Inconvenient	21	6	%
8	Don't see need	13	4	%
9	Safety and/or noise	5	1	%
10	Not enough information	1	(Less than 1)	0 %
11	No elaboration	5	1	%
12	Misc	16	4	%
	Total	94	25	%

(No Opinion - options)

13	Not enough information	4	1	%
14	Do not drive	5	1	%
15	Concern for traffic	1	(Less than 1) 0	%
16	No elaboration	77	21	%
17	Misc	<u>12</u>	<u>3</u>	%
Total		99	27	%
Grand Total		369	100	%

*The Neighbourhood Survey was sent to residents generally residing between Pandosy St. and Ethel St., and between Highway 97 and Springfield/Cadder Avenue. The focus of the survey was not on transportation issues, but given that the survey timing coincided with the Couplet Study, the above question was tagged on to obtain an indication of the opinions of *some* of the residents who will be directly affected by the couplet.