

THE JOHNSON STREET BRIDGE & CYCLING

A report submitted to the City of Victoria

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INTRODUCTION

This report summarizes all available bicycle traffic survey data over the Johnson Street Bridge from 1998 to 2010, within a regional context and compared to other modes of transportation. Its primary purpose is to provide objective, quantitative measures of current and future growth in cycling as it pertains to the Johnson Street crossing of the Inner Harbour. Some interpretation of results, and identification of problems and suggestions for improvement are included.

ABOUT THE AUTHOR

Susanna Grimes has been a transportation cycling advocate, educator and promoter in the CRD since 1998. For several years she coordinated the region's Bike to Work Week and education programs for the Greater Victoria Bike to Work Society. A cycling instructor, she has also worked as a bicycle tour guide, bicycle mechanic and bicycle courier, as well as managed the Victoria Car Share Co-op. She was the initial coordinator of the Cycling Tourism Advisory Committee and the coordinator of Victoria's International Car Free Day events. For several years, she served on the board of the Greater Victoria Cycling Coalition and the City of Victoria's Cycling Advisory Committee.

Improving the Johnson Street Bridge for cyclists has been her #1 project since '98, for which she has organized Bridge awareness campaigns and numerous traffic counts.

A regional perspective

Cycling is a viable mobility choice for an increasing number of residents in the Capital Region; a welcome trend that deserves encouragement.

The CRD Origin and Destination surveys reveal a 7.4% annual increase in bicycle trips between 2001 and 2006, with a 6% growth in the number of commuter cyclists per year between the same time points reported by Census Canada (Table 3).

In fact, the growth in cycling outpaced that of all other transportation modes. Over the same five year span, auto trips grew only 1.6% per year, transit trips by 1.5%, while trips on foot fell 1.7%. Trips by 'other' modes grew 6% per year (e.g. school bus, taxi and ferry).

The CRD TravelChoices Strategy indicates that bicycles have the greatest potential to replace cars for the many short trips that residents make. The average length of all trips in the region was 6.7 km (2006), a distance that can be easily accomplished by a fair-weather cyclist within 30 minutes.

If bicycle trips continue to grow at the same rate (7.4% per year), they could constitute 10% of all trips in the region by 2026 (170,000 per day).

Bicycle and pedestrian traffic over the Johnson Street Bridge

Traffic counts conducted by the CRD and Greater Victoria Cycling Coalition (GVCC) over the Johnson Street Bridge (Bridge) also reflect the growing trend in bicycle use, showing a steady 6% increase in trips per year from 1998 to 2010 (Table 1).

The Bridge is an excellent location to monitor the 'pulse' of regional cycling traffic for a number of reasons: It funnels ~10% of all regional bicycle trips (during the high season). It is one of two bridges that connect Victoria West to downtown, where many people in the region work and play. Compared to the Bay Street Bridge, it is a more direct route to downtown; an important feature for cyclists who typically travel a few kilometres per trip. It is also directly connected to the busy Galloping Goose Regional Trail, a cross-town "bicycle highway" that draws cyclists from adjacent neighbourhoods and municipalities.

The midweek afternoon commute – the focus of traffic counts cited in this paper – is a standard traffic engineering measure, being stable and capturing the highest concentration of traffic over 24 hrs.

During the high season, there are nearly 4000 daily bicycle trips over the Bridge (Graph 1) and over the entire year, nearly one million trips. Pedestrian trips more than match the number of bicycle trips, to make a combined 8000+ trips per day and 2 million per year. Active transportation (cyclists and pedestrians) represents nearly 30% of all Bridge traffic (Graph 3).

By 2026 – the planning horizon of the CRD Regional Growth Strategy – there could be 8000 bicycle trips per day, 16,000 trips by active transportation, for a mode share approaching half of all traffic.

A spike in the demand for cycling and walking over the Bridge is also imminent. The E&N Rail Trail – when completed – could channel thousands more cyclists and pedestrians over the Bridge, along with additional numbers from the various residential developments, currently under construction in Vic West. The six percent growth observed to date could be well exceeded within a few years.

There is also latent demand from residents who will only cycle over the Bridge if it is made safer to use.

Problems with the Bridge

Despite the current heavy use of the Bridge by cyclists and pedestrians, it provides woefully inadequate service to both in terms of safety, convenience, and capacity, and is an obstacle to the expansion of active transportation into the downtown core.

From a cyclist's point of view, the shortcomings of the Bridge and 'Bridgehead' are numerous: intimidating streams of speeding vehicles in close quarters, suddenly narrowing and merging roadway lanes, convoluted and substandard access and egress routes, impractical and confusing regulations regarding dismounting, and slippery, uneven surfaces. It is not for the faint of heart.

Traffic counts done by the GVCC reveal that a substantial portion (~40%) of cyclists shun the bridge deck altogether, sacrificing convenience for safety by travelling on the pathway of the railway bridge; where they by and large peaceably coexist with pedestrians.

Eastbound cyclists in particular (~80%) prefer the pathway, even though it puts them in a troublesome situation after crossing the bridge: facing either a ride along a sidewalk followed by two sets of traffic lights, or a dash across three lanes of traffic to head south along Wharf Street. However, the alternatives are worse: a left-turn onto busy Esquimalt Road followed by a blind corner in a tunnel, or a convoluted detour and bunny-hop off a curb onto Esquimalt Road, followed by a white-knuckle uphill ride with vehicles squeezing by in a suddenly-narrowing lane, and finally over the bridge itself. Here, cyclists face a slippery latticework surface next to railings, where cars and trucks often speed, tend to follow too closely and have been known to pass over a double-yellow line into oncoming traffic.

Westbound cyclists access the train path from either the northbound sidewalk or by diverting from the roadway just prior to the bridge deck through a narrow break in the chain link fence.

In fact, one-quarter of all cyclists go through this gap in either direction. Congestion is common during rush hour at this point, with both southbound cyclists and pedestrians clustered around the narrow opening waiting for a break in traffic, and westbound cyclists manoeuvring through it to the train path. Westbound vehicles on the roadway must regularly brake and even stop at this

point to avoid collision with a cyclist, while some eastbound vehicles stop out of misguided courtesy, to encourage cyclists and pedestrians to cross the eastside lanes.

Hazardous situations abound in the Bridge/Bridgehead area, and will only become worse with the impending increase in active transportation.

Solutions

A bridge to the City's downtown core must encourage cyclists and pedestrians by being safe, convenient and inviting. The GVCC offers these recommendations for a bike-friendly Johnson Street Bridge/Bridgehead:

- Bike lanes on the roadway of 1.5 metre minimum width, ideally physically separated
- Multi-use path for pedestrians, cyclists and other non-motorized transport
- Separate pedestrian-only paths/sidewalks that accommodate wheelchairs/electric scooters
- Approaches to the bridge that are seamless, safe and easy to use.
- Clear and highly visible directional signage
- Road surfaces that are safe for bicycles

The GVCC would be happy to share information (including detailed traffic count data) and ideas with the City of Victoria, and conduct any requested additional Bridge counts that may be useful.

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Graph #1: Bicycle trips over the Johnson Street Bridge – 24 hrs, weekday, 1998-2026

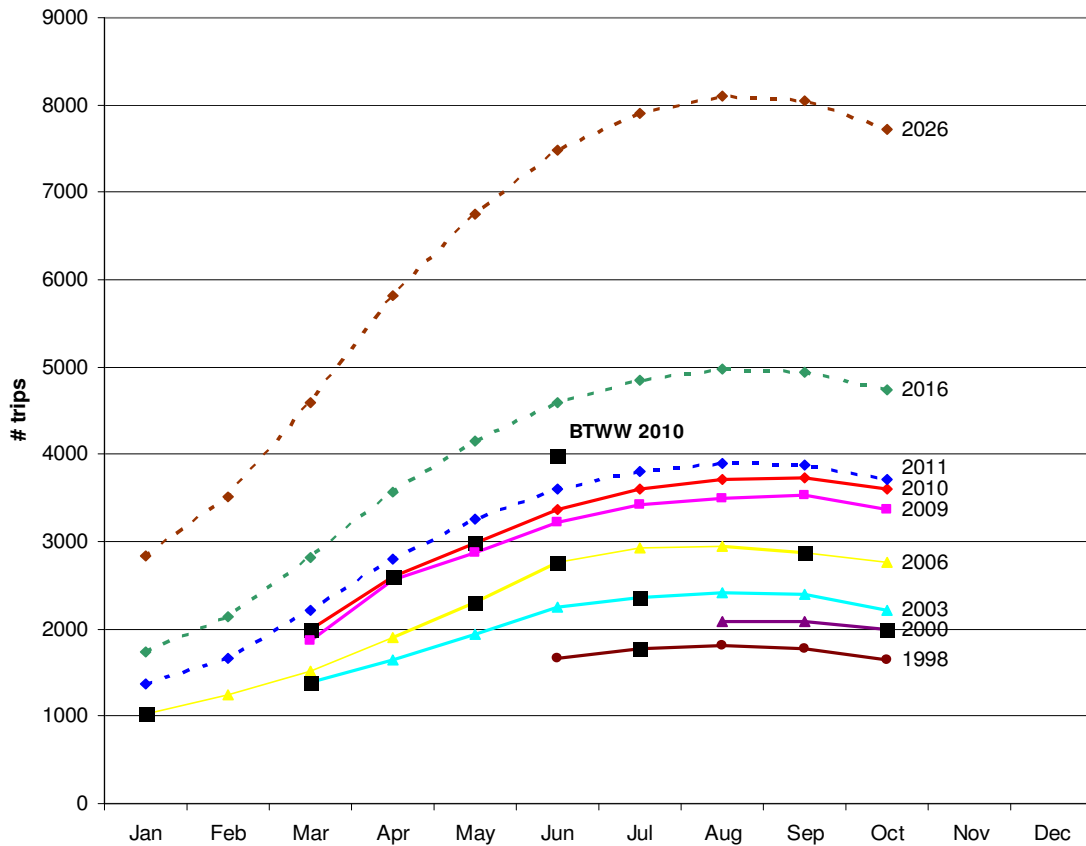
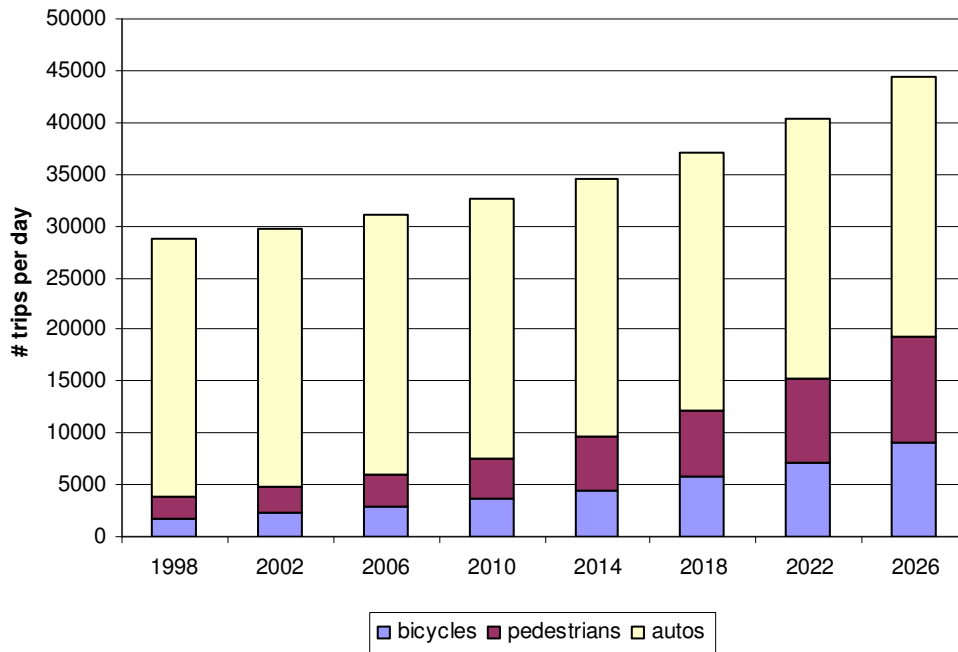


Table #1: Bicycle trips over the Johnson Street Bridge, 1998 - 2010

	time period			24 hrs projected*	done by	Notes	
	start end	3:00pm 6:00pm	4:00pm 6:00pm				4:15pm 5:30pm
Tues July 7, 1998		604	464	342	1775	CRD	
Oct, 2000		--	538	366	1995	CRD	
Thurs March 20, 2003		--	--	263	1385	GVCC	showers, windy in afternoon
Thurs July 17, 2003		--	--	449	2365	GVCC	
Tues Jan 10, 2006		--	276	207	1020	CRD	poor weather all day
Tues May 9, 2006		784	632	453	2305	CRD	
Wed June 28, 2006		--	746	517	2765	CRD	
Tues Sept 12, 2006		--	777	556	2880	CRD	
Tues April 28, 2009		--	--	485	2555	GVCC	
Thurs Mar 18, 2010		679	549	376	2000	GVCC	
Wed April 28, 2010		885	717	495	2605	GVCC	windy in afternoon
Wed May 12, 2010		--	795	568	2990	GVCC	
Thurs June 3rd, 2010			1075	750	3980	GVCC	Bike to Work Week

* The projected # of trips over 24 hrs is based on the 2006 CRD Origin & Destination study, which found that 34% of all weekday bike trips are made during 3:00 to 6:00pm.

Graph #2: Transportation mode share over the Johnson Street Bridge



Assumptions:

- Bicycle and pedestrian trips grow at 6% per year
- Auto trips are assumed to remain constant at 25,000 trips per day
- The # of pedestrian trips is ~13% higher than bicycle trips (2006, 2010 data)

Table #2: Transportation mode share over the Johnson Street Bridge, 4⁰⁰ to 6⁰⁰ pm

Date	bikes	peds	bikes+peds	vehicles	total
Tues Jan 10, 2006	276	376	652	4013	4665
	6%	8%	14%	86%	100%
Tues Sept 12, 2006	777	767	1544	3832	5376
	14%	14%	29%	71%	100%
Thurs Mar 18, 2010	549	689	1238	3754	4992
	11%	14%	25%	75%	100%
Wed April 28, 2010	717	790	1507	3866	5373
	13%	15%	28%	72%	100%

Table #3: Selected transportation regional data

	2001	2006	Increase per yr*	Source
Population	345,050	360,450	0.9%	1
# Trips per day, weekdays				
all modes	1,160,000	1,241,020	1.4%	1
bicycle	28,180	40,240	7.5%	1
other**	21,110	27,660	6.0%	1
automobile (driver or passenger)	897,340	969,790	1.6%	1
transit	73,260	79,090	1.5%	1
on foot	137,540	124,240	-1.7%	1
Commuting by bicycle				
% of all trips that are made by bicycle	2.4%	3.2%	6.0%	1
% commute trips made by bicycle	6.2%	7.7%	4.5%	1
# bicycle commute trips 3-6 ^{pm} , weekdays	5,530	7,740	7.0%	1
# who ride to work regularly	6745	9035	6.0%	2
% who ride to work regularly	4.8%	5.7%	3.5%	2
Trip length				
average length of bicycle trips	4.2 km	4.7 km		1
average length of all trips, all modes	6.6 km	6.7 km		1

* Compounded per year

** School bus, taxi, ferry, etc.

Sources: 1: CRD Origin and Destination surveys

2: Census Canada