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island health

June 19, 2015 Ref# 16809

Attention: Mr. Jim Handy, MCIP
The City of Victoria
Development Services
1 Centennial Square
Victoria BC V8W 1P6

Dear Mr. Handy:

Re: Royal Jubilee Hospital Master Campus Plan - Submission for Council

We are pleased to submit our Master Campus Plan (MCP) for the Royal Jubilee Hospital (RJH) for your review and submission to Council. The MCP provides a planning framework that offers clear and concise design guidelines for the physical and operational development and character of the campus including its buildings, landscape, circulation, public realm, and infrastructure for the next 20 years. It also provides approving authorities, surrounding communities and Island Health itself with as much certainty as possible in developing the character and form of the campus amidst uncertain economic and healthcare delivery challenges.

The MCP has evolved over the past few years based on feedback from the City, from the community, and from new information presented in updated studies, including the 2015 RJH Parking and Transportation Study. The outcomes of this study informed many of the revisions to the development density scenario and to the site plan layouts in the MCP to ensure that we are meeting the expected demand for parking on the campus. Island Health is appreciative of the guidance and support from the City in developing the methodology for the study.

This document represents the vision and objectives of Island Health, as well as our community partners who have contributed a significant amount of effort towards this plan over the past few years. We believe that the MCP provides the necessary level of detail for both Council and staff to review our approach and design guidelines for the Royal Jubilee Hospital. We feel this sufficiently meets the requirements of our Master Development Agreement.

We would be happy to meet with you during the next few weeks to go over the Plan and we look forward to presenting this document to Council for approval in the near future.

Yours truly,

Joe Murphy,
Vice President
Operations & Support Services

Attachment

Boulevard
a division of Watt Consulting Group

WATT
Consulting Group
Since 1983

Royal Jubilee Hospital
PARKING + TRANSPORTATION STUDY

Prepared for:	**Island Health**
Prepared by:	**Boulevard Transportation, a division of Watt Consulting Group**
Our File:	**1812**
Date:	**August 28 2015**

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CONTENTS

1.0 Overview

1.1 Introduction

Boulevard Transportation, a division of Watt Consulting Group, was retained by the Vancouver Island Health Authority ("Island Health") to complete the Royal Jubilee Hospital ("RJH") Parking + Transportation Study. This study considers on-site parking conditions, off-site traffic conditions, and transportation demand management ("TDM") practices.

Island Health is working toward completing a Master Campus Plan ("MCP") for the RJH site to both fulfill the terms of a Master Development Agreement ("MDA") between Island Health and the City of Victoria, and to provide approving authorities, neighbouring municipalities and Island Health with certainty regarding anticipated campus growth, future building sites and associated transportation and open space provisions. An important element of the MCP is ensuring appropriate parking supply associated with future campus growth, accounting for traffic impacts to the adjacent road network and continued pursuit of TDM. A transportation study was prepared in 2013, however the City requested that a new study is completed based on information gathered after the Patient Care Centre ("PCC") opened and demolition of the Central, East and South Block buildings.

Consistent with it's mandate to provide "excellent health and care for everyone, everywhere, every time", Island Health is seeking to influence travel choices to reduce traffic and parking demand while retaining access to health services. Implicit in this study and associated recommended actions is a focus on retaining reasonable patient/visitor and physician access, while targeting "non-essential" staff with strategies to reduce single-occupant vehicle ("SOV") trips.

1.2 Document Organization

This document is organized as follows:

Site Characteristics, *Section 2*
Description of the site context and transportation infrastructure, site floor area by building, day-to-day hospital population, and the proposed 2035 Master Campus Plan build-out.

Parking Assessment, *Section 3*
Overview of existing parking inventory, 2015 parking demand, parking demand rate (by floor area and user group), occupancy rates and average duration, and recommended parking supply rate for future site development.

Traffic Impact Assessment, *Section 4*
Review of traffic conditions for surrounding road network and analysis of future traffic conditions associated with the Master Campus Plan and parking redistribution.

Transportation Demand Management (TDM) Strategy, *Section 5*
Review of historic and current travel characteristics, existing TDM program, and recommended new TDM strategies.

Implementation Strategy, *Section 6*
Itemized parking, road network and TDM action items with recommended phasing according to proposed MCP build-out.

2.0 Site Characteristics

2.1 Location

The RJH site is divided between the City of Victoria and District of Saanich. The portion south of Bay Street, representing approximately two-thirds of the site, is in Victoria and the portion north of Bay Street is in Saanich. The City's eastern boundary is shared with the District of Oak Bay on Foul Bay Road approximately 150m east of RJH. See **Figure 1**.

The RJH site is bound by Fort Street to the south, Adanac Street to the north, Richmond Road to the west, and Trent Street to the east.

FIGURE 1. **ROYAL JUBILEE HOSPITAL LOCATION**

2.2 Transportation Context

2.2.1 Road Network

Fort Street is oriented east-west along the south of the site and is the primary link between the site and downtown Victoria. Richmond Road is oriented north-south along the west of the site. Both are classified as Arterials. Bay Street is an east-west Secondary Arterial that terminates at the site at its eastern end. Both Shelbourne Street (Secondary Arterial) and Foul Bay Road (Collector) are north-south routes within close proximity to the site.

The site is accessed at five locations - Trent Street, Lee Avenue, Coronation Avenue, Bay Street, Adanac Street.

2.2.2 Public Transit

BC Transit serves the area with multiple bus routes with service to main destinations including downtown, Victoria West, Victoria General Hospital, Camosun College and University of Victoria. These routes include no. 10, 14, 33, 11, 15. Route no.14 offers highest frequency service – 5-minute frequency during peak periods.

Route no.10 has a bus stop on campus adjacent the Patient Care Centre ("PCC") and Diagnostics & Treatment ("D&T") Building. All other bus stops are on Fort Street and Richmond Road.

Both Fort Street and Bay Street are identified by the City and BC Transit as corridors for future high frequency service[1].

2.2.3 Walking / Cycling

The majority of roads in the vicinity of the site are built to an urban standard and include sidewalks on both sides. Lee Avenue and Haultain Street are designated as "People Priority Greenways" in the Official Community Plan ("OCP"), suggesting vehicular traffic will be mitigated along these routes to enhance walking and cycling conditions.

Key cycling routes include Richmond Road (bike lanes), Fort Street (bike lanes) and Bay Street (bike lanes, incomplete). Further, an "All Ages and Abilities" network[2] was defined in the 2014 *Bicycle Master Plan* and will include Haultain Street, Lee Avenue and Coronation Avenue.

[1] BC Transit will be completing a corridor planning study for Fort Street in 2015
[2] All Ages and Abilities ("AAA") routes are designed to feel comfortable for a range of riders and offer a low-streets, high quality cycling experience. Depending on the route, AAA routes may include traffic calmed local streets, off-street pathways and separated bike lanes on major streets.

2.3 Floor Area

The site contains a total of 140,590 m² floor area, approximately 82% is located in the City of Victoria. See **Table 1**. The site's three largest buildings are located in Victoria – Patient Care Centre (27%), Diagnostics & Treatment (19%), Eric Martin Pavilion (10%).

TABLE 1. **SUMMARY OF BUILDING FLOOR AREA**[3]

	Building Name	Total Floor Area (m²)
SAANICH	A. Adanac Services	524.50
	B. Cancer Centre	10,273.00
	C. Diagnostics & Treatment ("D&T"), Saanich section	2,886.50
	D. Flammables Storage	99.00
	E. Memorial Pavilion	10,984.00
	F. Security Offices / Parkade	390.00
	Sub-Total, Saanich	**25,157.00**
VICTORIA	G. Begbie Hall	5,296.00
	H. Chapel	210.00
	I. Coronation Annex	3,164.00
	J. Diagnostics & Treatment ("D&T"), Victoria section	26,393.00
	K. Food Services	3,764.00
	L. Patient Care Centre ("PCC")	38,341.00
	M. Pemberton Theatre	87.00
	N. Power House	1,070.00
	O. Renal Building	2,303.00
	P. Richmond Pavilion	4,870.00
	Q. Rixford Services	1,596.00
	R. Royal Block + Annex	8,270.00
	S. West Block	5,222.00
	T. Wilson Block	847.00
	U. Eric Martin Pavilion (w/o basement)	14,000.00
	Sub-Total, Victoria	**115,433.00**
	Site Total	**140,590.00**

[3] Based on Master Campus Plan, 2015

2.4 Population

Site population is considered as average daily volumes by hospital user group and will be used to determine parking supply and demand rates for each hospital user group. See **Table 2**. A detailed breakdown of hospital users is included in **Appendix A**. Approximately 4,400 individuals visit RJH site on an average day. Patients (1,839, 41%) and staff (1,744, 39%) account for the majority of daily hospital users. Cancer Clinic staff, physicians and outpatients are external to Island Health and user volumes are considered separately, representing approximately 16% of site volume.

TABLE 2. **SUMMARY OF AVERAGE DAILY USER GROUP VOLUMES**[4]

User Group		Volume
Staff	General, Food services, Acciona, etc.	1,744 (39%)
Patients	Outpatient, Inpatient, Emergency department	1,839 (41%)
Physicians	General, Anaesthetists, Emergency department	61 (1%)
Students + Educators	Students, Post-grad residents, Technicians, Instructors	70 (2%)
Volunteers		30 (1%)
V.I. Cancer Centre	Staff, Physicians, Outpatients	690 (16%)
Total		**4,434**

2.5 Future Site Expansion

The Master Campus Plan ("MCP") provides a framework for site development to 2035, identifying possible future buildings and parking facilities. A net increase of approximately 17,000m^2 floor area is anticipated by 2035 through demolition, expansion and new buildings. Three new parking structures are proposed on existing lots, representing a net increase of approximately 251 parking spaces. A summary of the MCP proposed 2035 land use and parking supply is included in **Table 3**.

The MCP was draft at the time of this study and subject to change[5]. Since the completion of the Parking + Transportation Study; the MCP has been revised to a reduced density to reflect the findings of this study. The MCP development timeline represents a desired build-out scenario, but is dependent on public funding that cannot be guaranteed or planned in future.

TABLE 3. **SUMMARY OF PROPOSED MCP DEVELOPMENT SCENARIO**[6]

	Floor Area	Parking Supply
Existing (2013)	140,590.00 m^2	1,720
Future (2035)	157,191.00 m^2	1,971
Change	**+ 16,601.00 m^2** (+12%)	**+251** (+15%)

[4] Provided by Island Health, Planning + Community Engagement department staff, March 10 2015
[5] Draft Master Campus Plan, October 2013
[6] Based on revised Master Campus Plan

3.0 Parking Assessment

3.1 Existing Parking Supply

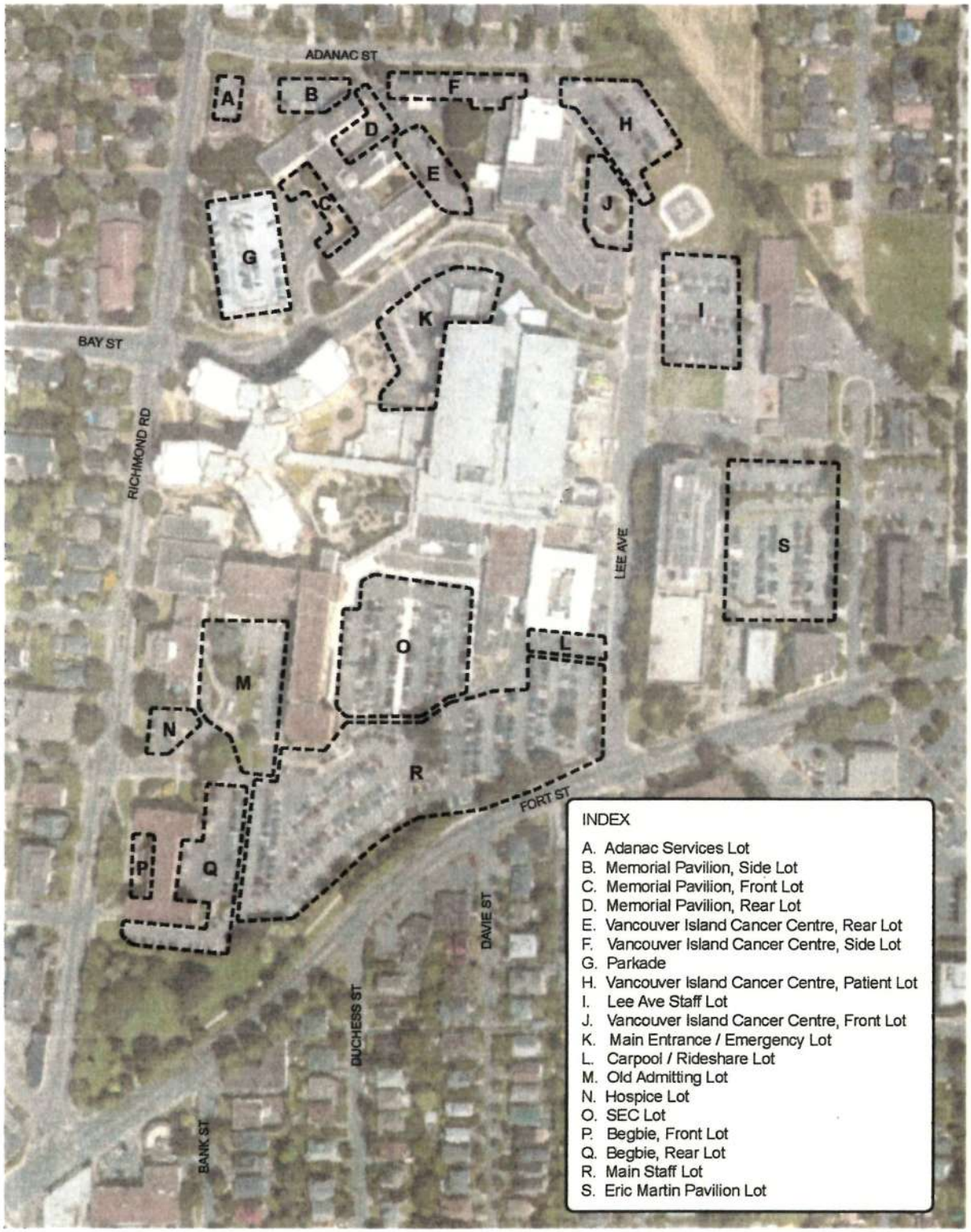
An inventory of parking supply at RJH was conducted on March 4, 2015. The RJH site consists of a total of 1,720 parking spaces[7] arranged in 19 different parking lots. See **Table 4**. Parking lot locations are identified in **Figure 2**.

TABLE 4. **SUMMARY OF PARKING SUPPLY, BY LOT**

Parking Lot	Parking Supply
A. Adanac Services Lot	15
B. Memorial Pavilion, Side Lot	30
C. Memorial Pavilion, Front Lot	8
D. Memorial Pavilion, Rear Lot	23
E. Vancouver Island Cancer Centre, Rear Lot	15
F. Vancouver Island Cancer Centre, Side Lot	38
G. Parkade	368
H. Vancouver Island Cancer Centre, Patient Lot	78
I. Lee Ave Staff Lot	93
J. Vancouver Island Cancer Centre, Front Lot	7
K. Main Entrance / Emergency Lot	48
L. Carpool / Rideshare Lot	17
M. Old Admitting Lot	51
N. Hospice Lot	20
O. SEC Lot	191
P. Begbie, Front Lot	7
Q. Begbie, Rear Lot	89
R. Main Staff Lot	443
S. Eric Martin Pavilion Lot	179
Total	**1,720**

[7] Excludes parking for bicycles, motorcycles, delivery, contractors and any temporary parking

FIGURE 2. **PARKING LOCATIONS**



Staff parking represents the largest portion of on-site parking, approximately 53%. Parking is also assigned for visitors (19%), patients (10%), physicians (7%), and a variety of reserved and miscellaneous user groups. See **Table 5**.

TABLE 5. **SUMMARY OF PARKING SUPPLY, BY SPACE TYPE**

Space Type	Quantity
Staff	918 (53%)
Physician	118 (7%)
Patient	164 (10%)
Visitor	322 (19%)
Reserved	129 (7%)
Carpool / Rideshare	19 (1%)
Miscellaneous (HC, taxi, shuttle, etc)	50 (3%)
Total	**1,720**

A total of 1,688 annual staff permits were issued in 2015, approximately 75% more permits than staff parking spaces (as of March 2015)[8]. Some staff also use the daily "scratch pass" system. A large number of permits are issued to volunteers, physicians, and specialty reserved vehicles. See **Table 6**.

TABLE 6. **SUMMARY OF RJH SITE PARKING PERMITS[9]**

Permit Type	Quantity
Staff General[9]	1,688
Physician[9]	460
Volunteer	549
Reserved[9]	134
Auxiliary	39
Carpool	10
Board	39
Renal	125
Pastoral Care[10]	344
Total	**3,388**

[8] Although there are 1,688 permits issues, it is unlikely all staff would be on site at one time
[9] Information provided by Vancouver Island Health Authority, Parking Services
[10] These parking permits allow for parking at Royal Jubilee Hospital and other sites

3.2 Existing Parking Conditions

Data collection and observations were undertaken to assess current parking conditions. For a summary of results see **Appendix B**. The results of the parking assessment are described in the following section. A similar data collection exercise was undertaken in October 2010 as part of the previous study and is referred to throughout this document.

3.2.1 Parking Demand, On-Site

Peak on-site parking demand was experienced at noon during the Thursday observation, when 1,635 of 1,720 parking spaces were observed occupied (95% occupancy). See **Table 7**. Occupancy was highest during the 10:00am and noon observations (both days), and 3-4% lower during the 2:00pm observations (both days).

TABLE 7. **SUMMARY OF PARKING OCCUPANCY, BY OBSERVATION PERIOD**

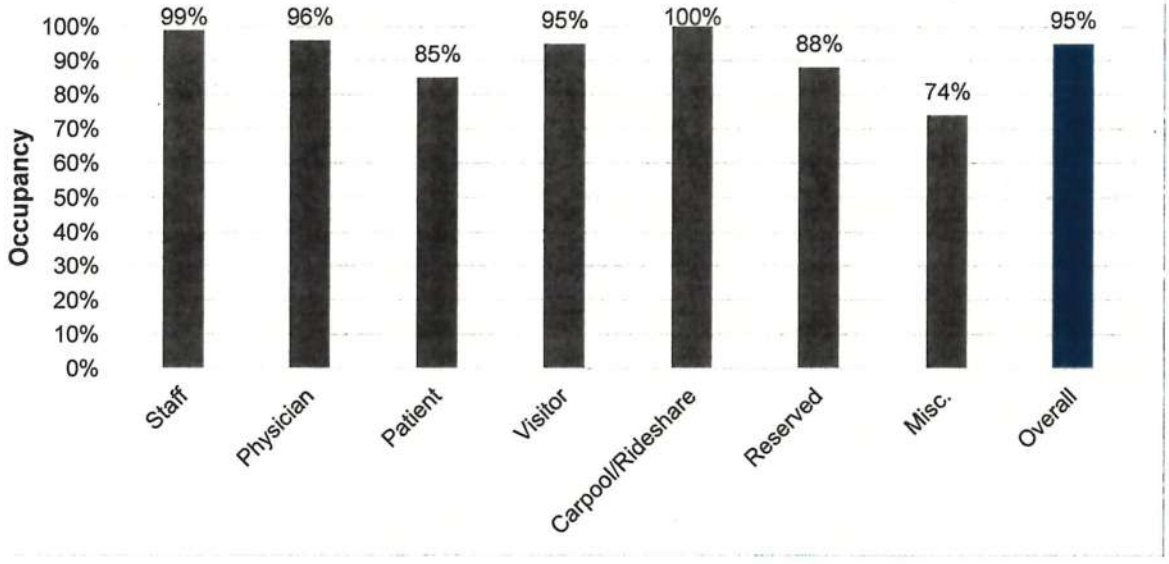
Observation Period	Supply	Vehicles Observed	Total Occupancy	Variation from Peak Period
Wednesday March 4th, 10:00am		1,624	94.4%	-0.67%
Wednesday March 4th, 2:00pm		1,561	90.7%	-4.53%
Thursday March 5th, 10:00am	1,720	1,628	94.7%	-0.57%
Thursday March 5th, 12:00pm		1,635	95.1%	-
Thursday March 5th, 2:00pm		1,584	92.1%	-3.12%

On-site parking occupancy is considered for each space type (i.e. staff, physician, visitor, etc.) to understand availability and demand generation associated with each user group. Results suggest that while the peak demand experienced at the site (as a whole) is 1,635 vehicles, the cumulative peaks of each user group is 1,673 vehicles. See **Table 8** and **Figure 3**.

TABLE 8. **SUMMARY OF PARKING OCCUPANCY, BY SPACE TYPE**

Space Type	Supply	Peak Period (Thursday, 12:00pm)		Cumulative Peak (Cumulative, by Space Type)	
		Vehicles	Occupancy	Vehicles	Occupancy
Staff	918	908	98.9%	910	99.1%
Physician	118	113	95.8%	121	102.5%
Patient	164	140	85.4%	149	90.9%
Visitor	322	305	94.7%	320	99.4%
Carpool / Rideshare[11]	19	19	100%	19	100%
Reserved	129	113	87.6%	113	87.6%
Miscellaneous	50	37	74.0%	41	82.0%
Total	**1,720**	**1,635**	**95.1%**	**1,673**	**97.3%**

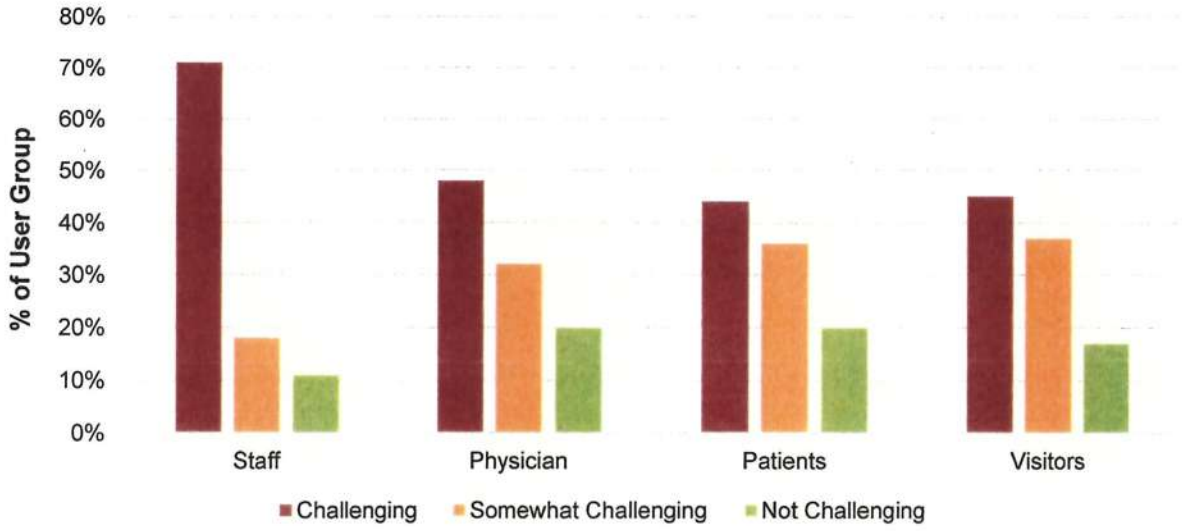
FIGURE 3. **SUMMARY OF PEAK PERIOD PARKING OCCUPANCY, BY SPACE TYPE**



Results from the travel survey suggest that staff have the most challenging experience finding available parking, as over 70% of staff indicated they find their experience to be "challenging". See **Figure 4**. Less than 50% of physicians, patients, and visitors suggested it was "challenging" finding available parking.

[11] Half Carpool / Rideshare spaces are assumed to be occupied by staff vehicles

FIGURE 4. **EXPERIENCE FINDING AVAILBLE PARKING, BY USER GROUP**[12]



3.2.2 Parking Demand Adjustments

A number of "adjustment factors" have been added to observed parking conditions so that they reflect the true parking demand associated with the site and each user group. Adjustment factors are summarized in **Table 9** and described in detail in the following sections.

TABLE 9. **SUMMARY OF PARKING DEAMND ADJUSTMENT FACTORS**

Condition		Demand Adjustments
1.	Staff parking in Carpool / Rideshare parking spaces	+11 Staff, -11 Rideshare/Carpool
2.	Staff parking as Visitors in the Parkade	+28 Staff, -28 Visitors
3.	Staff parking off-site in the neighbourhood	+90 Staff
4.	Visitors and Patients parking off-site	+15 Visitor, +7 Patient

[12] Based on results of Travel Survey, Question 6

Adjustment no.1:
Staff Parking in Carpool / Rideshare Spaces

Carpool and rideshare parking spaces were observed at 100% occupancy (19 of 19 spaces occupied); however vehicles with a staff permit are allowed to park in carpool / rideshare spaces after 10:00am suggesting observations included non-carpool vehicles. Subsequent observations were completed the following week[13] and determined that eight carpool or rideshare vehicles occupy these spaces and the remaining 11 spaces are occupied by staff vehicles.

Adjustment no.2:
Staff Parking as Visitors in the Parkade

Discussions with Island Health staff and results from the travel survey (see **Appendix E**) suggest that a certain number of staff with annual permits are unable to find available staff parking and instead pay the visitor parking rate to park in the Bay Street Parkade. Observations suggest that 28 staff vehicles will be in the Parkade having paid as visitors[14]. The overall parking demand (ie. site total) remains unchanged.

Adjustment no.3:
Staff Parking in the Neighbourhood

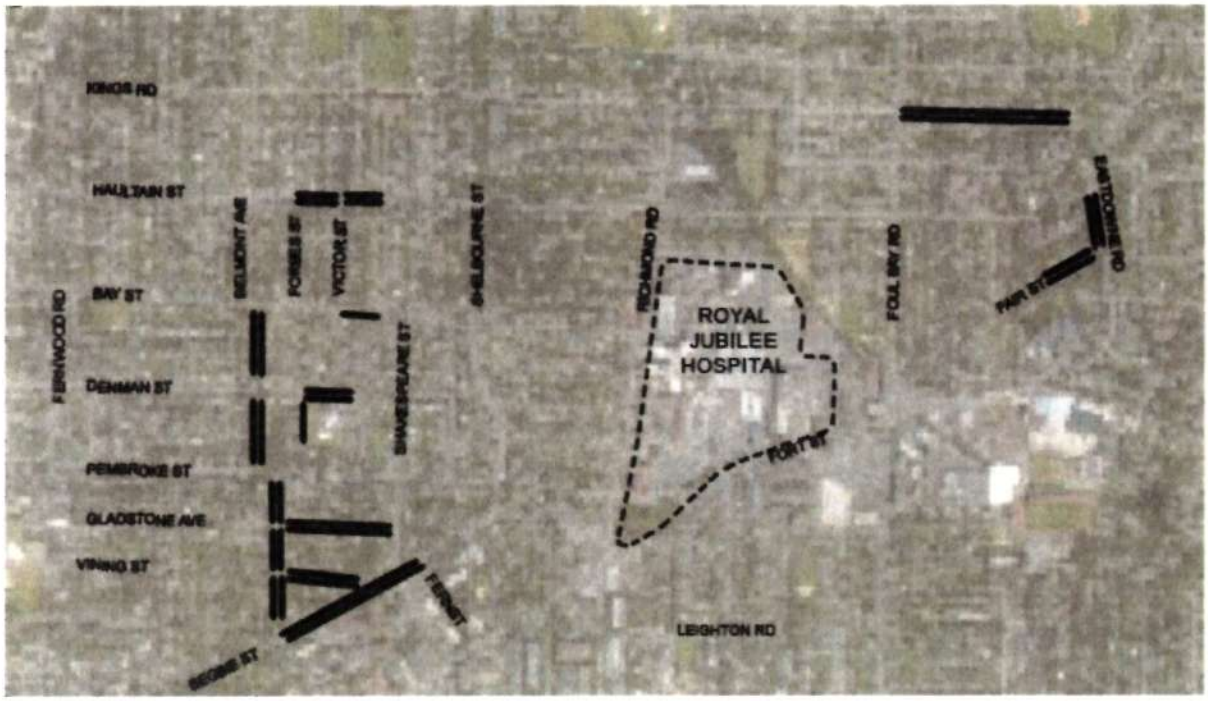
Observations were conducted of on-street parking areas closest to RJH that are unrestricted and may accommodate RJH staff vehicles (or others). Observations focused in the Fernwood / Haultain area west of RJH and a small number of streets in Oak Bay northeast of RJH. See **Figure 5**. All nearby roads in Saanich are restricted (time restricted or resident only) and were not observed. Vehicles observed during the 9:30-10:30am and 2:45-3:45pm observations but not observed at 6:30-7:30am or 4:45-5:45pm were assumed to be non-residents. All non-resident vehicles are assumed to be RJH staff for purposes of this study, although some may be associated with other employment on Fort Street or in the Fernwood neighbourhood.

A total of 63 vehicles assumed to be RJH staff were observed parked in the adjacent neighbourhoods. Results are summarized block-by-block in **Appendix C**.

[13] Observations occurred on Tuesday March 17 at 7:45am, 8:30am, and 9:30am

[14] Observations conducted by Robbins Parking - May 19 to May 26

FIGURE 5. **NEIGHBOURHOOD PARKING STUDY AREA**



The travel survey included questions to support neighbourhood observations. Over half of staff respondents indicated they have parked in neighbourhoods surrounding RJH either often (27%) or infrequently (30%). Of RJH staff who indicated they park in surrounding neighbourhoods often or infrequently, 70% suggested they most commonly utilize unrestricted parking areas (i.e. those streets that were observed). This suggests that the 63 observed vehicles represent 70% of all staff vehicles parked off-site and that a total of approximately 90 staff vehicles are parked in the neighbourhoods. The additional 27 vehicles are assumed to park in restricted areas, business parking lots, or on residential properties (i.e. family, friends). The single-occupant vehicle and multi-occupant vehicle mode shares applied to the average staff volumes (i.e. number of staff on site on an average day, per **Table 2**) suggest that staff parking demand is 1,029 vehicles. This figure is consistent with adjusted staff parking demand.

Further, anecdotal observations were conducted at the Bay Street / Richmond Road, Coronation Avenue / Richmond Road, and Lee Avenue / Fort Street intersections on a weekday[15] morning (7:45 - 8:15am) and afternoon (4:00 – 4:30pm) to estimate the magnitude of RJH staff walking to/from vehicles parked in surrounding neighbourhoods. A small number of pedestrians were observed travelling towards RJH, although most were assumed to be pedestrian trips originating from home or a nearby transit stop. Results do not reflect the magnitude of neighbourhood parking by staff and are not considered further.

[15] Observations conducted Tuesday, March 31 2015

Adjustment no.4:
Visitor + Patients Parking Off-Site

Results from the travel survey indicate that a certain number of visitors and patients are parking off-site. In the absence of a definitive measure, visitor and patient parking demand accommodated off-site during peak periods is estimated at 5% of on-site demand - a total of 22 vehicles[16].

Utilization data for the Bay Street Parkade (Lot G) indicated that visitor parking is at capacity from approximately 10:00am to 2:00pm on the busiest day of the week (Thursday). Other, smaller visitor parking locations (Lots B, N, S) are also at or near capacity. This suggests that a portion of visitor and patient parking demand is not met on-site during high demand periods.

City of Victoria parking violations were summarized in the restricted areas surrounding RJH for a six month period[17] to determine locations where visitor and patient parking concentrate[18]. A large number of violations were issued in Residential Permit Only ("RPO") areas on Bay Street and Emerson Street (and Haultain St and Carrick St to a lesser extent) immediately west of RJH, assumed to be RJH visitors and patients who cannot access available parking in the Bay Street Parkade (Lot G) and instead park on nearby streets. A detailed summary is included in **Appendix D**.

3.2.3 Summary of Parking Demand

Existing parking demand is estimated to be 1,747 vehicles, consisting of 1,635 vehicles observed on-site and an additional 112 vehicles estimated to park off-site. See **Table 10**.

This results in a parking demand rate of approximately one vehicle per 80m^2 floor area, per existing floor area figures presented in **Table 1**.

[16] Assumed to be two-thirds visitors and one-third patients consistent with the number of each user group vehicles observed on-site

[17] Violations summarized for July 1st to December 31st 2014

[18] Information provided by City of Victoria, Parking Services, by email March 19 2015

TABLE 10. **SUMMARY OF EXISTING PARKING DEMAND, BY USER GROUP**

	On-Site (Observed)	Adjustments	Total
Staff	908	+129	1,037
Physician	113	-	113
Patient	140	+7	147
Visitor	305	-13	292
Carpool / Rideshare	19	-11	8
Reserved	113	-	113
Miscellaneous	37	-	37
Total	**1,635**	**+112**	**1,747**

3.2.4 Average Duration

Average duration was determined for each major user group based on a "snap shot" of conditions in select parking areas over the course of one day[19]. See **Table 11**. Results suggest that patient and visitor parking average length of stay is approximately two hours, while staff and physician vehicles are parked for an average of six hours. Detailed results are presented in **Appendix B**.

TABLE 11. **SUMMARY OF AVERAGE DURATION, BY USER GROUP**

User Group	Total Vehicles	Total Hours	Average Duration (hours)
Staff	170	940	5.5
Physician	99	642.5	6.5
Patient	341	543.5	1.6
Visitor	131	507.5	2.5
Reserved	25	97.5	3.9
Total	**766**	**2,731**	**3.6**

[19] Average duration based on observations on Wednesday, March 04 2015 of Lots A, B, G, H, N, O, S

SURVEY FINDINGS

In addition to quantifying the neighbourhood parking spillover, the travel survey provided interesting conclusions relative to RJH site parking, as follows:

- A significantly larger number of staff indicated they park off-site as compared to physicians, patients, and visitors.
- Nearly half (47%) of staff that indicated they park off-site do so only when they cannot find available parking on-site.
- Approximately 20% of those that park off-site use nearby business parking lots or resident driveways.
- 71% of staff indicated their experience finding available parking "challenging", while less than 50% of physicians, patients, and staff indicated their experience to be "challenging".
- Numerous staff noted frustration over buying an annual parking pass but being unable to find available parking on-site.

3.3 Future Parking Supply

3.3.1 Parking Requirement

The City of Victoria's parking requirement is one space per four beds, plus one space per three staff, plus one space per doctor. The total requirement for the site was not calculated as the quantity of staff and physicians varies significantly from day-to-day and more accurate method of understanding parking demand is being developed through this study.

Required parking was reviewed for peer communities. See **Table 12**. Required supply rates vary from one space per 25m^2 to 100m^2 in municipalities where the requirement is based on floor area. The average rate is approximately one space per 71m^2 among municipalities surveyed. If applied to the floor area proposed in the MCP, the site requirement would be 2,214 parking spaces.

Communities with a composite requirement similar to the City of Victoria's (Burnaby, Courtenay, Langley, Saskatoon) are generally consistent or lower than the City's requirement.

TABLE 12. **SUMMARY OF PARKING REQUIREMENTS IN OTHER MUNICIPALITIES**

Municipality	Required Supply Rate
Burnaby	1 space / 2 doctors, plus 1 space / 4 staff, plus 1 space / 5 beds
Coquitlam	0.3 spaces / bed
Courtenay	1 space / 2 staff, plus 1 space / 5 beds
Edmonton	1 space / 91m^2
Kamloops	2 spaces / patient room, plus 0.2 spaces / 100m^2
Kelowna	4 spaces / 100m^2
Langley (City)	1 space / 4 beds, plus 1 space / doctor, plus 1 space / 3 staff
Nanaimo	1 space / 56m^2
New Westminster	1 space / 93m^2
Penticton	1 space / 4 beds
Prince George	1.1 spaces / 100m^2
Regina	1.1 spaces / 100m^2
Richmond	1 space / bed
Saanich	1 space / 50m^2
Saskatoon	1 space / 3 beds, plus 1 space / 4 staff
Surrey	1 space / 100 m^2
Vancouver	1 space / 93m^2
Vernon	5 spaces / 100m^2
Victoria	1 space / 4 beds, plus 1 space / 3 staff, plus 1 space / doctor

3.3.2 Expected Parking Demand

The existing parking demand rate (1 vehicle per 80m^2) provides a strong indication of future parking demand. Applied to the MCP land use scenario of 157,191 m^2 floor area by 2035[20], the expected parking demand is 1,965 vehicles. If parking is supplied to meet peak demand, but not exceed it, this represents an approximately 14% increase from existing parking supply and six less parking spaces than indicated in the final MCP.

[20] As indicated in the revised Master Campus Plan

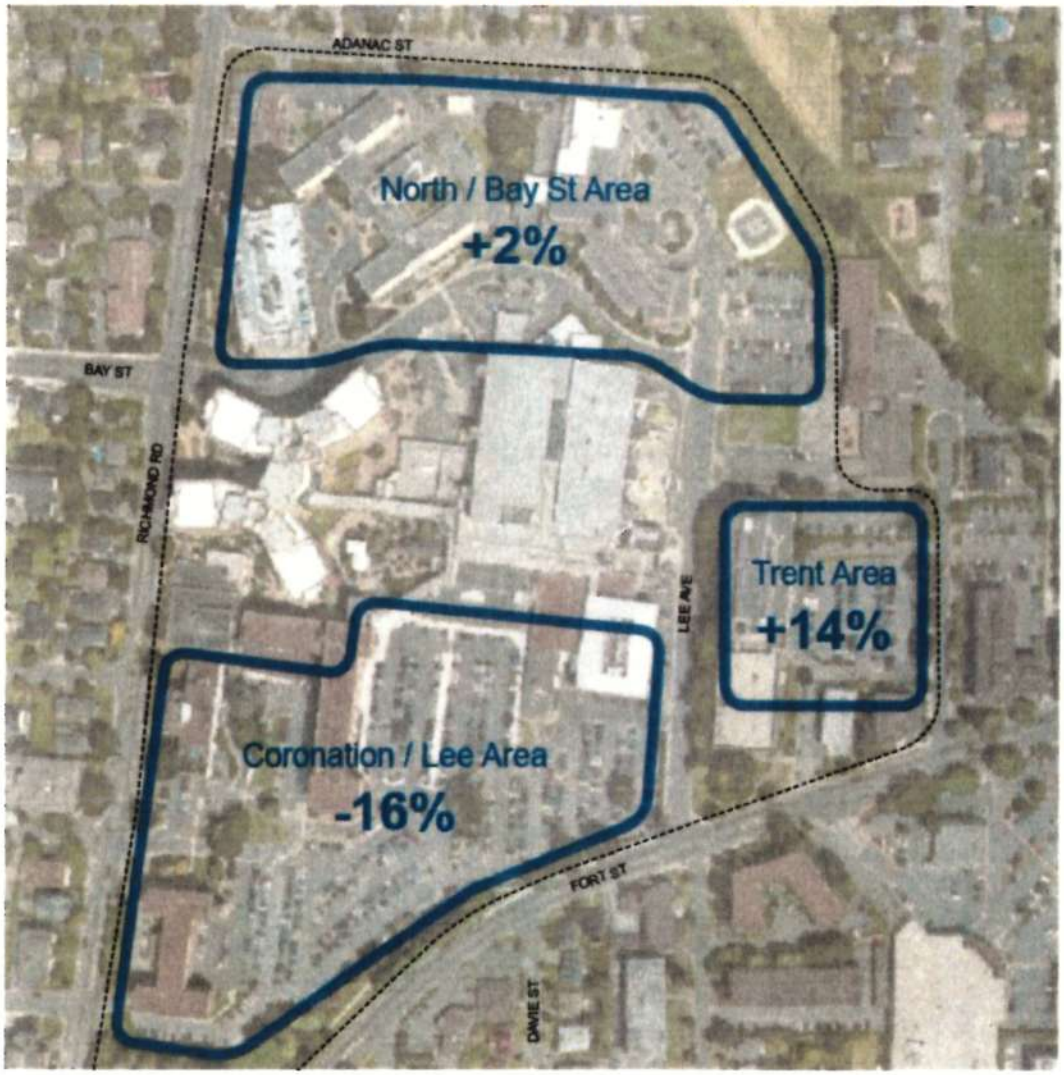
4.0 Traffic Assessment

4.1 Land Use Scenario

The traffic assessment is based on the land use and parking scenario presented in the draft MCP from October 2013. This includes an increase in floor area to 175,628 m^2 (25% increase) and 1,814 parking spaces (5% increase). Parking is proposed to be redistributed around the site altering trip distribution around the site. See **Figure 6**.

The draft MCP land use scenarios were used to conduct the traffic analysis, however; the land use scenarios have been revised in the MCP to a lower density. Therefore, the traffic analysis reflects a worst case scenario.

FIGURE 6. **SUMMARY OF PARKING REDISTRIBUTION, PER DRAFT MCP**



4.2 Study Area

The traffic assessment addresses the following intersections:

1. Richmond Road / Adanac Street
2. Richmond Road / Bay Street
3. Richmond Road / Coronation Avenue
4. Fort Street / Lee Avenue
5. Fort Street / Trent Street
6. Bay Street / Lee Avenue

4.3 Traffic Data

Traffic data information was gathered from the City of Victoria and Island Health. The City of Victoria data was provided in the form of a Synchro files for the AM, PM and off-peak periods and indicated a horizon year of 2014. Island Health provided 2012 traffic count data with three-hour AM and three-hour PM data collected over a two-day period.

The City's model was utilized as the base point for determining existing traffic volumes as the data is more current (2014) and provided in Synchro format, which was used for the analysis. The City's model was missing volumes for the Fort Street / Trent Street, Bay Street / Lee Avenue, and Richmond Road / Adanac Street intersection and Island Health data was used for these locations.

The City's Synchro model was also reviewed and updated for pedestrian volumes, bicycle volumes, heavy truck percentages, and peak hour factors based on the Island Health traffic counts (the City's model used typical heavy truck percentages of 2% and peak hour factors of 0.95 for all movements). Lane configuration was updated at the intersection of Richmond Road / Coronation Avenue to eliminate the eastbound left/through movements, westbound through, and northbound left turn movement that do not exist. The lane configuration on Fort Street was also modified to correctly reflect the sections with one lane and two lanes per direction.

4.4 Existing Traffic Conditions

4.4.1 AM Peak Hour

The AM peak around the RJH site occurs from 7:45am to 9:00am. **Table 13** provides a summary of traffic operations at each intersection based on the updates to the lane configurations and peak hour factors

TABLE 13. **EXISTING AM PEAK HOUR TRAFFIC CONDITIONS**

Intersection	Worst Movements
Richmond Road / Adanac Street	LOS C: Side Street – Eastbound / Westbound
Richmond Road / Bay Street	LOS C: Eastbound Through, Westbound, Southbound Through/Right
Richmond Road / Coronation Avenue	LOS C: Westbound Left
Fort Street / Lee Avenue	LOS C: Southbound Left/Through
Fort Street / Trent Street	LOS C: Side Street – Southbound
Bay Street / Lee Avenue	LOS B: Eastbound

All intersections providing access to the RJH site operate at an acceptable level of service in the AM peak hour.

4.4.2 PM Peak Hour

The PM peak hour surrounding the RJH site occurs at 3:30pm to 4:30pm. Operations at several intersections are different than the City's base Synchro model with the adjustments in peak hour factor and lane configuration. **Table 14** shows the existing PM peak hour traffic operations.

TABLE 14. **EXISTING PM PEAK HOUR TRAFFIC CONDITIONS**

Intersection	Worst Movements
Richmond Road / Adanac Street	LOS D: Westbound; LOS E: Eastbound
Richmond Road / Bay Street	LOS E: Eastbound Left; LOS F: Westbound Through/Right
Richmond Road / Coronation Avenue	LOS D: Westbound Left
Fort Street / Lee Avenue	LOS D: Southbound Left/Through
Fort Street / Trent Street	LOS D: Side Street – Southbound
Bay Street / Lee Avenue	LOS A

The intersections with movements at a LOS D are operating at borderline conditions, although acceptable during peak hours as increased delays are expected. Several movements at the Richmond Road / Bay Street intersection operate at a poor level of service, resulting from several high volume movements competing with each other for signal "green time".

4.5 Future Traffic Analysis

Future traffic conditions have been assessed based on the draft 2013 MCP land use and parking scenario. As noted above, the MCP land use has been revised to a reduced density. Therefore, this analysis represents a worst case scenario.

4.5.1 Trip Generation

Trip generation rates were reviewed using the Institute of Transportation Engineers *Trip Generation Manual* (9th Edition) and existing traffic entering / exiting the site. See **Table 15**. Existing entering / exiting trips and site floor area was used to develop a site-specific trip generation rate for the AM and PM peak hours.

TABLE 15. **EXISTING PEAK HOUR TRIPS ENTERING / EXITING RJH**

Peak Hour	Trips In	Trips Out	Total[21]
AM	916	275	1,191
PM	441	867	1,308

AM and PM trip generation rates have been developed that reflect the existing peak hour trips and total site floor area (1,511,530 sqft / 140,423 m²)[22]. See **Table 16**.

TABLE 16. **RJH SITE SPECIFIC TRIP GENERATION RATES**

Peak Hour	Trip Rate	% In	% Out
AM	0.79	77%	23%
PM	0.87	34%	66%

Table 17 and **Table 18** identify the number of additional trips that would be added to the site based on the MCP land use scenario.

TABLE 17. **TRIP GENERATION BASED ON ITE TRIP GENERATION RATE[23]**

Additional Floor Area	Trip Rate	Total	In	Out
35,204.50 m²	0.95 (AM)	360	227	133
	0.93 (PM)	352	134	218

[21] Existing trips include all entering/exiting trips on Trent Street
[22] Total floor area as identified in the draft MCP; this number has been revised in the MCP
[23] Based on ITE land use no.610

TABLE 18. **TRIP GENERATION BASED ON OBSERVED TRIP GENERATION RATE**

Additional Floor Area	Trip Rate	Total	In	Out
35,204.50 m²	0.79 (AM)	299	231	69
	0.87 (PM)	330	112	218

4.5.2 Trip Assignment

Future trips have been assigned to reflect the reallocation of parking around the site, as summarized in Figure 6 (see above).

AM Peak Hour:

In the AM peak hour, existing traffic enters and exits the RJH site relatively similar to the existing distribution of parking on-site. Therefore existing traffic was reassigned based on **Figure 6**. For example 16% of the existing traffic using Coronation Avenue and Lee Avenue entering the site was removed and 2% of the entering traffic was added to Bay Street and 14% was added to Trent Street.

The proposed development traffic, due to the 2013 MCP, was assigned based on the proposed allocation of parking on-site which is 44% in the Bay Area, 32% in the Coronation/Lee area, and 24% in the Trent area.

PM Peak Hour:

In the PM peak hour, existing traffic enters and exits the RJH site with a higher preference for the Bay area than the Coronation/Lee area relative to the existing distribution of parking on-site. It was assumed that future traffic will continue to maintain the preference for the Bay area in the PM even with the change in the parking areas. The preference for the Bay area in PM peak hour is assumed to be due to higher visitor and non-staff use during this time of day. Since the existing preference for parking will be maintained the existing traffic was still adjusted based on the change in parking allocation from existing to future. The future trips were assigned based on the proposed parking allocation.

4.5.3 Future Traffic Conditions

AM Peak Hour:

Table 19 outlines the AM peak hour traffic conditions with traffic from the draft MCP.

TABLE 19. **POST DEVELOPMENT AM PEAK HOUR TRAFFIC CONDITIONS**

Intersection	Worst Movements
Richmond Road / Adanac Street	LOS D: Side Street – Eastbound
Richmond Road / Bay Street	LOS C: Eastbound Through, Westbound, Northbound Left, Southbound Through/Right
Richmond Road / Coronation Avenue	LOS C: Westbound Left
Fort Street / Lee Avenue	LOS C: Northbound, Southbound Left/Through
Fort Street / Trent Street	LOS C: Side Street – Southbound
Bay Street / Lee Avenue	LOS B: Eastbound

All movements remain at good condition with the exception of the low volume eastbound movement at Richmond Road / Adanac Street, which drops to LOS D. The LOS D is an acceptable conditions during the peak hour; especially since the volume of traffic is below 25 vehicles per hour.

PM Peak Hour:

Table 20 outlines the PM Peak hour traffic conditions with the traffic from the 2013 MCP.

TABLE 20. **EXISTING PM PEAK HOUR TRAFFIC CONDITIONS**

Intersection	Worst Movements
Richmond Road / Adanac Street	LOS E: Westbound; LOS F: Eastbound
Richmond Road / Bay Street	LOS D: Eastbound Through; LOS E: Eastbound Left; LOS F: Westbound Through/Right
Richmond Road / Coronation Avenue	LOS D: Westbound Left
Fort Street / Lee Avenue	LOS D: Southbound Left/Through
Fort Street / Trent Street	LOS F: Side Street – Southbound
Bay Street / Lee Avenue	LOS A

The Richmond Road / Adanac Street intersection is operating at a failing condition for the side streets with the development traffic; however, the volume of left turning traffic from the side street is relatively low (less than 35 vph total) and a traffic signal at this intersection is not recommended.

The Richmond Road / Bay Street intersection will continue to operate with the same poor movements as existing conditions; however, delays will increase slightly consistent with the small increase in traffic expected.

The Richmond Road / Coronation Avenue and Fort Street / Lee Avenue intersections remain at the same LOS as existing conditions; however, have slightly reduced delays due to the reduced traffic entering / exiting RJH from these access points.

The Fort Street / Trent Street intersection will operate at a failing LOS with the addition of the parkade on the Eric Martin Pavilion ("EMP") site. A signal is not recommended due to its close proximity to Foul Bay Road and Lee Avenue (both signalized) and the offset nature of the driveway on the opposing side of Fort Street. Rather, it is recommended that an exit from the proposed parkade onto Lee Avenue is provided as the new facility is constructed to allow exiting vehicles to access the signal at Fort Street / Lee Avenue (or even the signal at Richmond Road / Bay Street). See **Figure 7**. This will serve to better balance exiting vehicles to make use of available intersection capacity and cause the intersection of Fort Street / Trent Street to improve to a LOS D and the intersection of Fort Street / Lee Avenue to remain at a LOS D or better.

FIGURE 7. **RECOMMENDED PARKADE CONNECTION**

5.0 Transportation Demand Management

Transportation demand management ("TDM") refers to policies, programs and services that influence whether, why, when, where and how people travel[24]. TDM initiatives typically aim to reduce single-occupant vehicle ("SOV") trips and encourage alternative travel options such as walking, cycling, public transit and shared rides. Successful TDM results in reduced parking demand and fewer vehicle trips – the two primary objectives at RJH - and associated benefits of decreased greenhouse gas ("GHG") emissions, improved personal health and well-being, reduced traffic congestion and lower infrastructure costs.

Since 1999, Island Health has pursued TDM initiatives at RJH with the goal of reducing parking demand and SOV trips to/from the site. The 2007 Master Development Agreement ("MDA") set out a discrete target to reduce 2007 SOV trips by 10% by 2010 and, although that target was not met, Island Health has realized progress in reducing SOV travel. The MDA states:

> *"VIHA covenants and agrees to develop and implement a Transportation Demand Management Program, so that by the end of the year 2010, the total daily SOV trips of all full-time, part-time and casual Royal Jubilee Hospital employees are reduced to no more than 2,413 trips (a reduction of at least 10% of the Baseline) and therefore do not increase."*

As of 2014[25], daily SOV trips have been reduced by approximately 6% from 2007 rates despite an increase in floor area and patients at RJH. The proportion of RJH staff travelling in SOVs has also decreased by 15%, as demonstrated in *Section 5.1*. Further, Island Health has prepared reports to the City of Victoria in 2010, 2012 and 2014 identifying progress toward mode split objectives and uptake / utilization of the various TDM initiatives, which has provided an opportunity to monitor progress and intervene with "course corrections" where warranted (this study presents another opportunity for course correction). The challenge with the MDA commitment is that it is based on a baseline of total SOV trips (rather than a proportion of total trips), which fails to acknowledge growth of the site and the need to constantly expand to meet the growing demand for health care in the Capital Region.

[24] Definition based on Transport Canada, TDM for Canadian Communities, March 2011

[25] Vancouver Island Health Authority, 2014 Annual TDM Summary, August 19 2014

5.1 Travel Characteristics

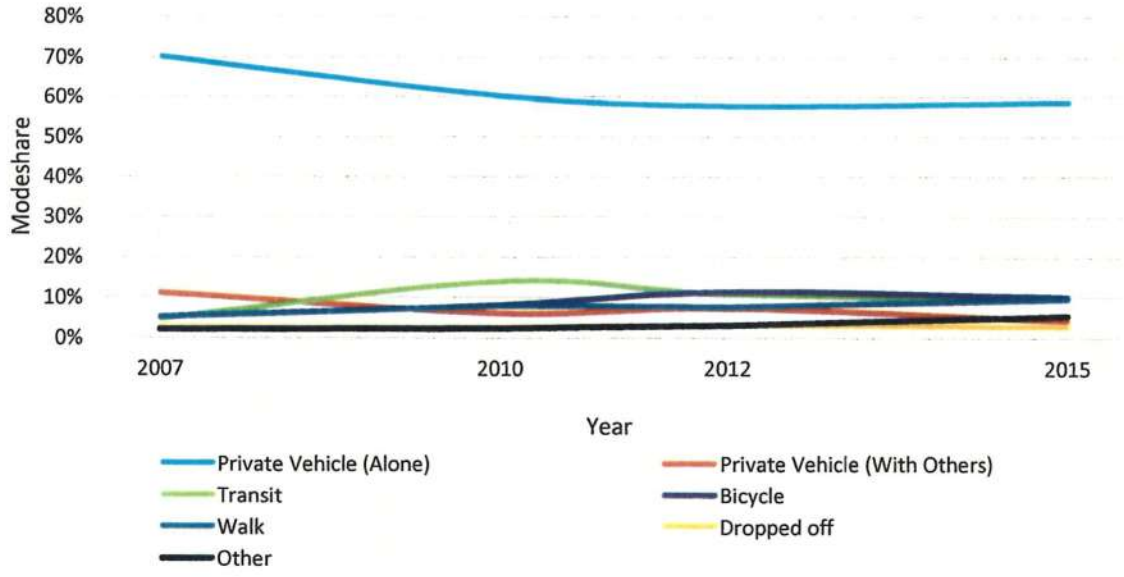
A travel survey was conducted to update the RJH mode split for 2015 and to assess progress relative to measures in 2007, 2010, and 2012. The mode share accounts for all individuals who travel to the site three days or more, consistent with previous surveys.

Most notable trends from 2015 mode split include a significant decrease in shared rides / carpool, increase in walking, and an increase in "other" trips. See **Table 21** and **Figure 8**.

TABLE 21. **SUMMARY OF MODE SPLIT, 2007 - 2015**[26]

Mode	2007	2010	2012	2015
Private Car (Alone)	70.0%	60.0%	57.5%	58.5%
Private Car (With Others)	11.0%	6.0%	7.2%	4.3%
Transit	4.5%	13.7%	10.6%	9.5%
Bicycle	5.0%	7.9%	11.2%	10.0%
Walk	5.0%	7.7%	7.5%	9.5%
Drop Off	2.5%	2.5%	2.9%	2.7%
Other	2.0%	2.3%	3.1%	5.4%

FIGURE 8. **SUMMARY OF MODE SPLIT, 2007 - 2015**[27]

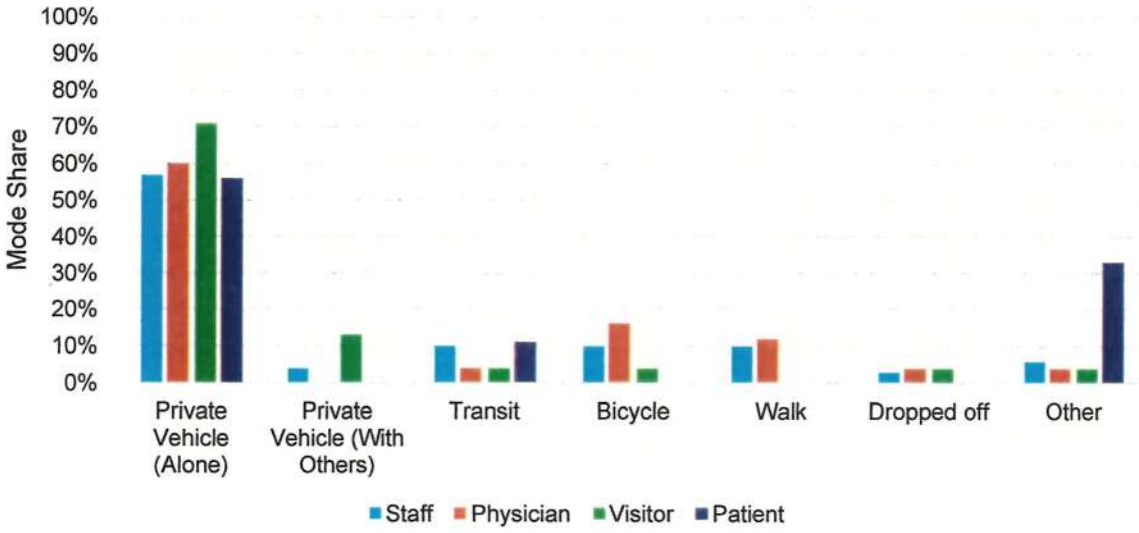


[26] Mode split for individuals travelling to RJH three days per week or more, all user groups

[27] Ibid.

Staff exhibit a relatively low SOV mode share (57%) and high transit (10%), walking (10%), and cycling (10%) mode shares relative to the other site user groups. See **Figure 9**. Visitors have the highest rate of SOV travel (71%), while patients exhibit low SOV rates and high transit and "other" usage (assumed to be ambulance, shuttle and other supported services). Physicians exhibit the highest rates of walking and cycling, but low shared ride and transit usage.

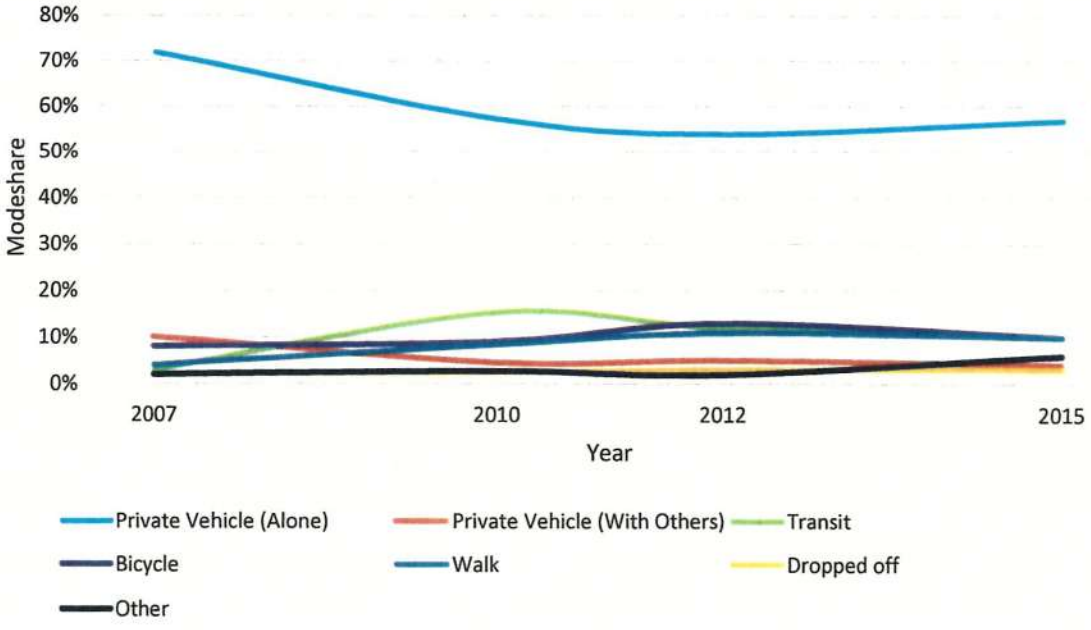
FIGURE 9. **SUMMARY OF RJH MODE SPLIT, BY USER GROUP**[28]



Staff mode split between 2007 and 2015 has generally reflected the desired shift away from SOV trips, which is indicative of the site as a whole. See **Figure 10**. Staff SOV mode share has decreased from 72% in 2007 to 57% in 2015, although increased slightly between 2012 and 2015. Staff walking and cycling mode shares have both increased since 2007 to 10%. Transit mode share has increased from 4.5% in 2007 to 10% in 2015, but has decreased from its peak 15% share in 2010 (resulting from significant investment in ProPASS). Ridesharing has decreased over time, from 10% in 2007 to 4% in 2015. Staff represent one of the largest site user groups (39%, per *Table 2)* and the group most effectively targeted with TDM.

[28] Ibid.

FIGURE 10. **SUMMARY OF STAFF MODE SHARE, BY YEAR**



Survey respondents were asked to indicate the barriers to travel via walking, cycling, public transit, or other SOV alternatives. The following barriers were identified:

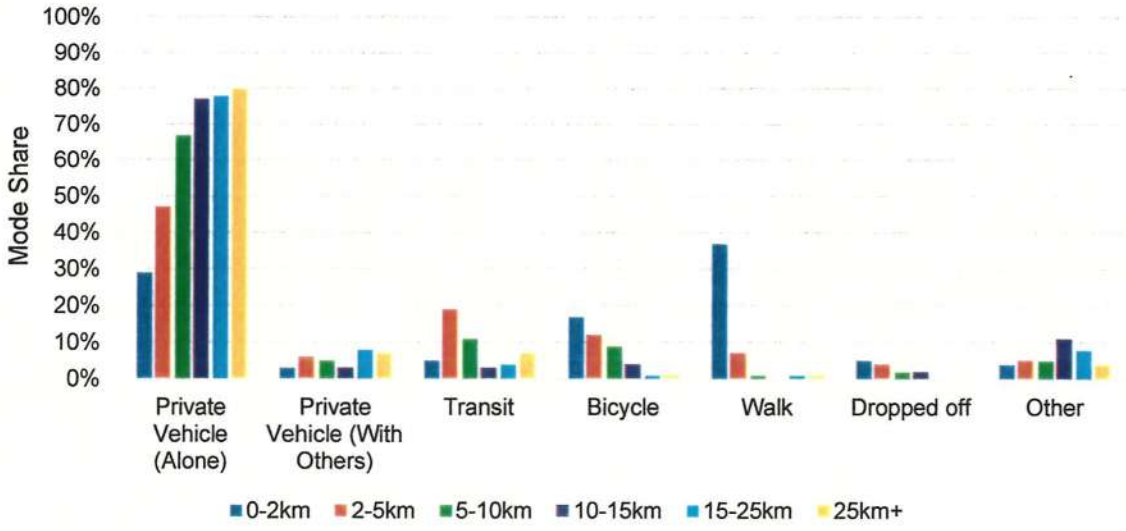
- Inconvenience (various reasons stated)
- It takes more time to travel
- Family responsibilities (school, daycare pickup) that require a vehicle
- Home is too far away to take transit, bike or walk
- Pre- or post-work responsibilities require a vehicles

Understanding these barriers is important when considering potential new TDM initiatives aimed at shifting travel choice, particularly among staff.

5.1.1 Travel Distance

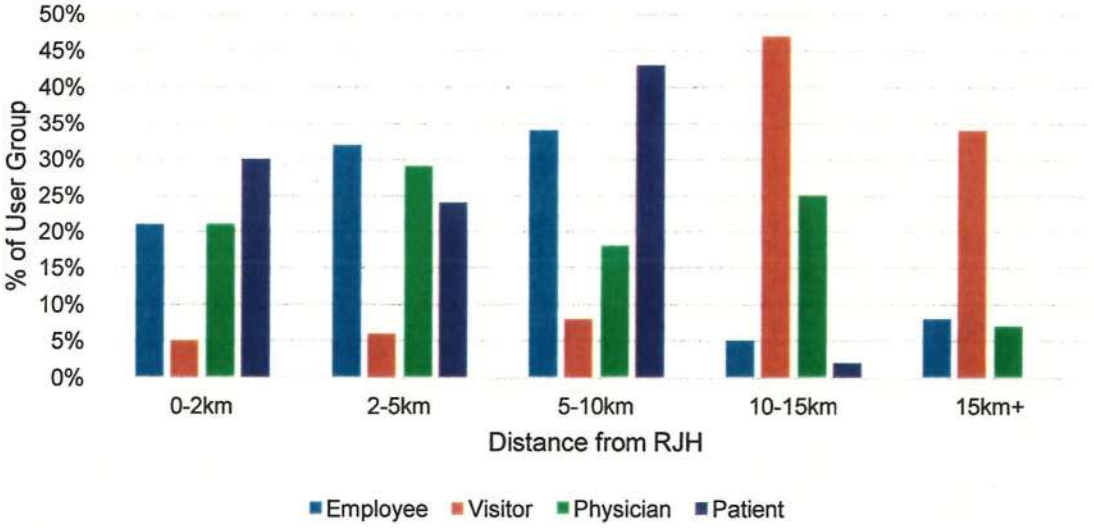
The survey concluded, as expected, that SOV mode share increases as trip distance increases. See **Figure 11**. Walking has a higher mode share (37%) than SOVs (29%) for trips 2-km or less. The transit mode share is highest (19%) for trips 2 to 5-km.

FIGURE 11. **SUMMARY OF MODE SHARE, BY COMMUTE DISTANCE**



Staff and physician travel distance varies. See **Figure 12**. Patients generally travel 10-km or less to RJH, while a large proportion of visitors travel 10-km or further. Average travel distance among staff is 11-kilometres.

FIGURE 12. **SUMMARY OF TRAVEL DISTANCE TO RJH, BY USER GROUP**



5.2 Existing TDM Program

Existing TDM initiatives are described in the following section to understand programs currently available and level of uptake / utilization. The existing TDM program and mode split information (see *Section 5.1*) are used to consider new, recommended TDM approaches (see *Section 5.3*).

Additional information on existing TDM Programs is provided in **Appendix F**.

5.2.1 Parking Management

Staff

The primary staff parking option is an annual permit that allows parking in designated staff parking spaces. The permit cost is $702.00 per year and is automatically charged via payroll deduction ($27 per pay period). See **Table 22**. There are currently 1,688 general staff permits issued[29].

TABLE 22. **SUMMARY OF STAFF PARKING PERMIT COSTS, 2007-2015**

Year	Daily[30] ($)	Pay Period ($)	Monthly ($)	Annual ($)
2007	1.88	18.78	37.56	488.28
2008	1.94	19.35	38.70	503.10
2009	2.03	20.32	40.64	528.26
2010	2.70	27.00	54.00	702.00
2011	2.70	27.00	54.00	702.00
2012	2.70	27.00	54.00	702.00
2013	2.70	27.00	54.00	702.00
2014	2.70	27.00	54.00	702.00
2015	2.70	27.00	54.00	702.00

Staff also have the option to purchase booklets of five scratch passes. Each scratch pass allows parking in general staff parking spaces for up to 12 hours on the day indicated on the pass. Scratch pass booklets cost $21.00 ($4.20 per day). The scratch passes generally appeal to part-time staff and full-time staff that do not regularly drive.

[29] Vancouver Island Health Authority, RJH Permit Count, February 12, 2015
[30] Daily cost based on 260 working days per year.

Carpool permits are available to staff travelling with at least one other person in their vehicle 80% of the time and originating from a different address. Carpool permits cost $455.00 per year, 54% less than an annual staff permit, and allow vehicles to park in designated carpool spaces. There are currently six carpool parking permits issued.

Rideshare parking spaces are located on site on Lot L. This is an informal program used by staff who purchase a yearly parking permit, but drive with others.

Visitor

The primary visitor parking supply is in the Bay Street Parkade. Visitor rates are $2.25 for the first hour and $1.25 for each additional hour, to a maximum daily cost of $16.00. Smaller visitor parking supplies are also provided throughout the site at rates of $0.25 for ten minutes and $2.75 for two hours. Parking for the Vancouver Island Cancer Centre (VICC) is $1.50 per hour.

Patient

Patient parking costs vary throughout the site. Parking at the VICC is $1.50 per hour. Renal dialysis patients are not charged for parking. All other parking is the same as visitor parking.

Consistent with Island Health's vision and mandate, they will continue to accommodate and prioritize patient parking to enhance access to health care.

Physician

Physicians have access to a physician parking permit for $1,024.08 annually. Physicians park in the dedicated physician parking only parking spaces (parkade and surface parking).

5.2.2 Transit

Transit Passes

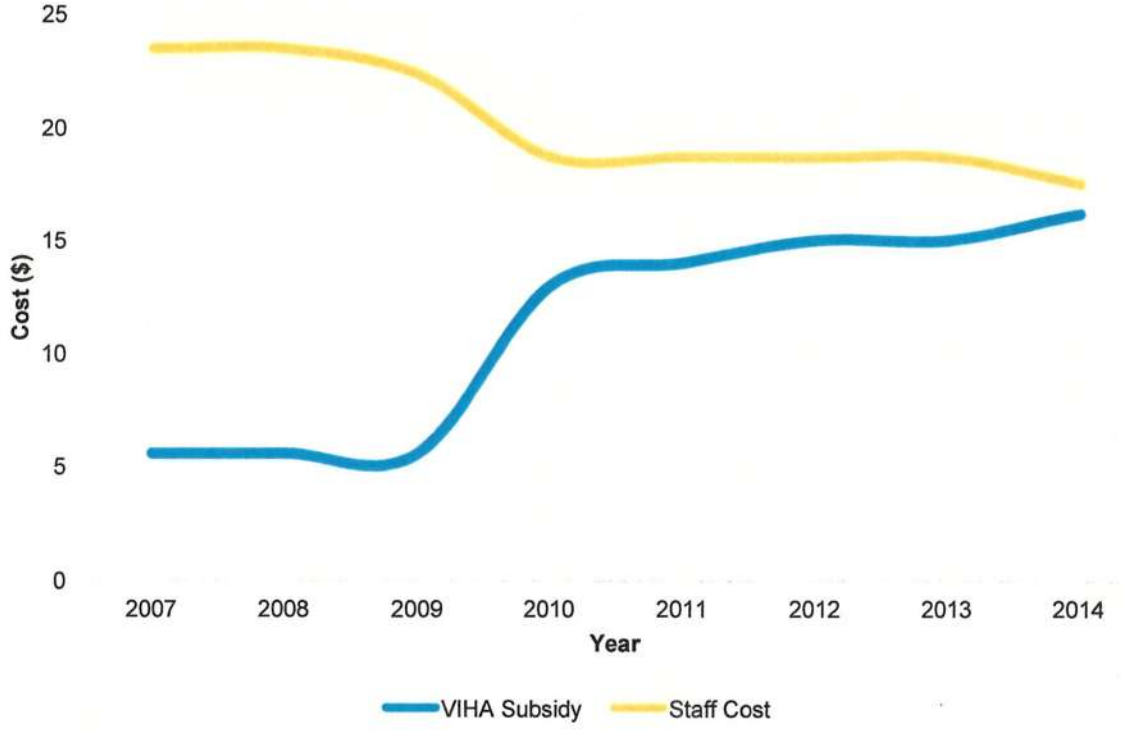
Permanent Island Health staff are eligible for a subsidized transit pass ("ProPASS") at a cost of $17.50 per pay period. The monthly cost of the ProPASS is $38.00, which is less than half the cost of an adult monthly pass ($85). The ProPASS works out to be $455 per year, approximately 54% less than the cost of an annual staff parking permit. 354 staff were enrolled in the ProPASS program as of August 19, 2014[31]. BC Transit's bi-weekly cost for the program has increased marginally from 2007, while Island Health has increased its subsidy from $5.54 in 2007 to $16.17 in 2014. See **Table 23**. The result has been a decrease in the bi-weekly cost to staff from $23.48 in 2007 to $17.50 in 2014 and a 250% increase in enrollment. See **Figure 13**.

[31] Vancouver Island Health Authority, 2014 Annual TDM Summary, August 19 2014

TABLE 23. **SUMMARY OF PROPASS PROGRAM, 2007-2014**

	Enrollment	Cost ($)	VIHA Subsidy ($)	Cost to Staff ($, per pay period)
2007	132	29.02	5.54	23.48
2008	148	29.02	5.54	23.48
2009	210	29.02	5.54	22.36
2010	215	31.69	13.00	18.69
2011	221	32.68	14.00	18.68
2012	257	33.67	15.00	18.67
2013	305	33.67	15.00	18.67
2014	354	33.67	16.17	17.50

FIGURE 13. **PROPASS COST TO STAFF + SUBSIDY RATE, 2007 – 2014**



The Government of Canada offers an income tax credit for monthly transit pass holders[32]. Staff are encouraged to submit their ProPASS when filing their income tax return.

[32] More information available at: www.cra-arc.gc.ca/transitpass

Service Improvements

The no.10 – Royal Jubilee / Songhees bus route was added in 2009 to improve service to RJH, with direct service between RJH and Vic West along Bay Street.

5.2.3 Shuttle Bus

A free shuttle service is available to staff between RJH and Victoria General Hospital ("VGH"). The service operates 20 trips per day between 6:30am and 8:15pm, with capacity for up to ten passengers per trip. Ridership is high during peak morning and afternoon periods, and lower during the middle of the day. Average ridership is 22.4 participants daily[33].

5.2.4 Carpool / Rideshare

Observations occurred on Tuesday March 17 at Lot L at 7:45 am, 8:30am, and 9:30 am. Occupancy ranged from 24%-47% (in total) with at least 9 spaces still available. Carpool parking spaces had a higher occupancy than rideshare parking spaces (averaged approximately 71% vs 30%), although it is unclear whether any ineligible vehicles were observed (i.e. general staff without carpool permits). Occupancy increased to 100% at 10:00am when the spaces become available to general staff.

Rideshare parking spaces are for those staff who purchase an annual staff parking permit but carpool with others (essentially sharing the cost of the permit). This is an informal program and Island Health is essentially "trusting" staff to only use these spaces when driving with others. This accommodates those staff who are unable to carpool 80% of the time (a requirement to obtain a carpool parking permit).

5.2.5 Cycling

Bike Parking

The RJH site includes a total of 712 bicycle parking spaces (616 bike racks and 96 bike lockers). Bicycle storage has increased by 85% since 2003[34]. See **Figure 14**.

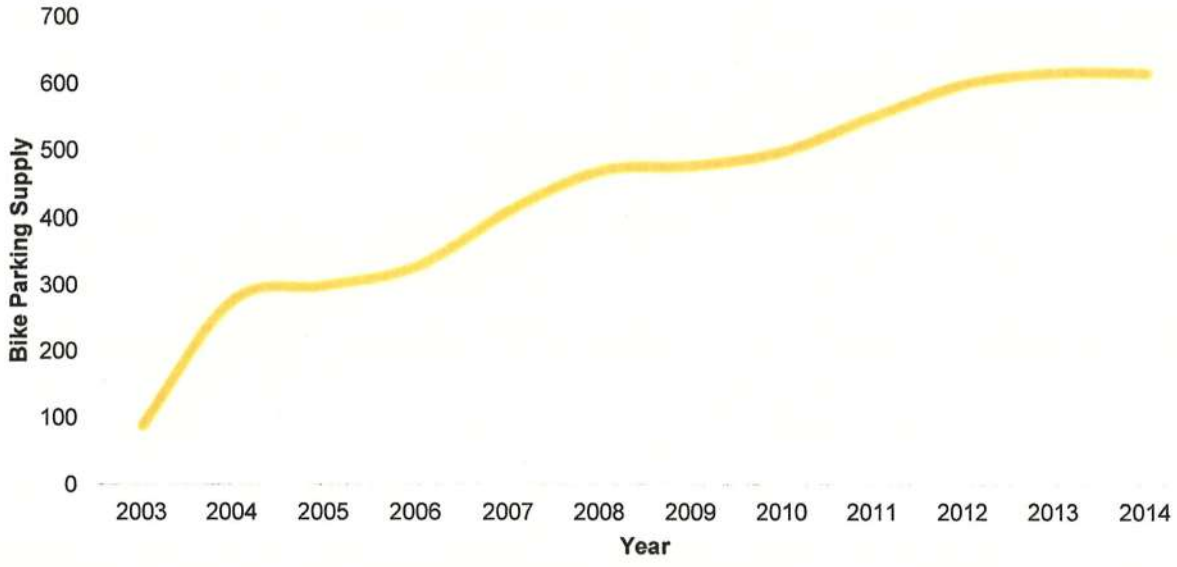
- Approximately 616 bike rack spaces are located at building entrances. Island Health has been active in adding shelters to protect racks from weather.
- There are a total of 96 bicycle lockers on the site. Lockers are rented at a cost of $2.15 every two weeks or $55.90 annually. There are currently 10 staff[35] on the waitlist to obtain access to a bike locker.

[33] Information received from Island Health
[34] Vancouver Island Health Authority, 2014 Annual TDM Summary, August 19 2014
[35] Email correspondence with parking services, May 4, 2015

Further, "bicycle compounds" are provided at the bottom of the Diagnostics & Treatment Building and underneath the Foods Building, each accessed from Lee Avenue. The compounds have capacity for approximately 134 bicycles (Diagnostics and Treatment has 57 spaces and the Foods Building has 77 spaces) and is only accessible to staff. Both compounds are in convenient locations to provide easy access to showers/change facilities.

Bicycle parking occupancy was observed for selected visible bike parking (i.e. bike racks) on Wednesday, March 04 2015. Occupancy was observed at approximately 27% overall. It should be noted this does not represent all bike parking and does not account for heightened bicycle ridership in summer months.

FIGURE 14. **RJH BIKE RACK CAPACITY, 2003 – 2014**



The bicycle compound beneath the D & T Building

5.2.6 Bike to Work Week

Island Health is an active participant in Bike to Work Week (BTWW) in late-May each year. Island Health supports a community partnership with the Greater Victoria Bike to Work Society and annually increases its sponsorship level from the Bronze minimum level to an official silver level sponsor. This includes a $2,000 payment in exchange for extensive branded marketing, logos and messaging to promote BTWW to Island Health employees. Messaging includes a valuable profile (at the Gold Level) of an Island Health employee on a countdown poster distributed to all city team leaders and social media. Further, Island Health has a profile at a celebration station at RJH to support and promote cycling activity along the local community bike corridor. Island Health further supports the BTWW event by purchasing t-shirts provided free of charge to all registered Island Health employees. These t-shirts promote Island Health cycling participation and increased awareness as the shirts can be seen throughout the campus. RJH staff participation in Bike to Work Week has increased by approximately 60% since 2007[36].

5.2.7 Staff Orientation

At orientation, new Island Health staff and resident physicians are given TDM information including parking options, public transit, preferred cycling routes and bike parking at RJH. This information is distributed at approximately 18 sessions per year and has been offered since 2008.

[36] Vancouver Island Health Authority, 2014 Annual TDM Summary, August 19 2014

5.3 Recommended TDM Strategy

Island Health's organizational vision is to provide "excellent health and care for everyone, everywhere, every time". Implicit in this vision is efficient patient access to health care and maintaining reasonable access for patient support - health care providers (physicians, staff), and visitors. Island Health is seeking to create a TDM program for RJH to decrease SOV trips by focusing on those user groups with the greatest potential for shift in travel behavior without negatively impacting patient care.

The recommended TDM program is identified in the following section that introduces new approaches to make effective use of resources committed to TDM.

5.3.1 Parking

Strategy 1.1
Increase Cost of Staff Annual Parking Permit

Annual staff parking permit costs increased approximately 45% between 2007 and 2010 (from $488.28 to $702.00). The increased parking rates is one of the factors that coincided with a reduction in the staff SOV mode share from 72% in 2007 to 57% in 2010. Since 2010, annual staff permit costs have remained at $702.00 due to restrictions to Collective Bargaining Agreements (HEU) that limit rate increases. The staff SOV mode share has increased slightly, from 54% in 2012 to 57% in 2015.

Staff parking costs were reviewed for nine representative hospitals in BC. See **Table 24**. Results suggest that Royal Jubilee Hospital's staff parking costs are considerably higher than other sites. It should also be noted that annual parking permits are not available at approximately half the hospitals that were reviewed.

TABLE 24. **STAFF PARKING PERMIT COSTS AT REPRESENTATIVE HOSPITALS**

Hospital	Cost	Relative Costs			
		Daily ($)	Weekly ($)	Monthly ($)	Annual ($)
Abbotsford Regional Hospital + Cancer Centre	$20.32 monthly	1.02	5.08	20.32	264.16
Burnaby Hospital	$26.03 bi-weekly	2.40	13.02	52.06	676.78
Chilliwack General Hospital	$5.00 bi-weekly	0.50	2.50	10.00	130.00
Kelowna General Hospital	$15.10 per pay period $392.64 annually	1.51	7.55	30.20	392.60
Langley Memorial Hospital	$11.57 bi-weekly	1.16	5.79	23.14	300.82
Penticton Regional Hospital	$13.11 per pay period $340.84 annually	1.31	6.56	26.22	340.86
Royal Inland Hospital	$18.39 per pay period $478.22 annually	1.84	9.20	36.78	478.14
Royal Jubilee Hospital	$27.00 bi-weekly	2.70	13.50	58.50	702.00
Surrey Memorial Hospital	$22.03 bi-weekly	2.20	11.02	44.06	572.78
Vernon Jubilee Hospital	$13.11 per pay period $340.84 annually	1.31	6.56	26.22	340.86
Average[37]		**1.47**	**7.48**	**29.89**	**388.56**

Parking costs were also reviewed relative to daily parking costs in other locations in the Capital Region with pay parking. See **Table 25**. Results suggest that costs at RJH are approximately 70% more than the average from other sites.

TABLE 25. **DAILY STAFF PARKING COSTS AT OTHER SITES IN THE CAPITAL REGION**

Site	Daily Parking Cost
Camosun College	Free
Royal Jubilee Hospital – annual permit (daily cost)	$2.70
Royal Roads University	$0.47
University of Victoria (General)	$3.11
Average	**$1.57**

Studies of parking "elasticity" suggest that a 10% increase in parking cost will decrease vehicle trips by 1-3% and a 50% increase in cost will reduce trips by 5-15%.[38] Island Health may consider increasing annual staff parking permit costs by 50% by 2035 to approximately $1,050 to achieve a 5% reduction in staff parking demand (approximately 45 vehicles). In order to achieve this increase, costs may be incrementally increased each year to be 25% higher in

[37] Average excludes RJH
[38] Todd Litman, Transportation Elasticity's, VTPI, May 2010, available at http://vtpi.org/tdm/tdm11.htm#_Toc161022578

2025 (approximately $880) and 35% higher in 2030 (approximately $960); the major horizon years.

Two significant challenges are currently presented to increasing staff permit rates that will ultimately need to be addressed before significant progress is made, as follows:

1. The current provincially negotiated Collective Agreement will need to change in order to increase parking rates above actual costs of employee parking spaces. Island Health should increase the rates for employees who are not bound by the collective agreement, and investigate ways to increase all employee rates once the collective agreements are re-negotiated at the Provincial level; and

2. The current Island Health funding/budget structure allocates a portion of parking revenues to general funds, and not necessarily used to fund parking- or transportation-related expenditures. Part of the rationale behind increasing staff rates is to generate revenue to fund TDM initiatives that support alternative travel modes. Island Health should explore options to commit a portion of new parking revenues to fund ProPASS subsidy, new parking management systems, or other TDM initiatives to reduce SOV trips.

Strategy 1.2:
Phase-Out Annual Parking Permit + Staff Scratch Parking Passes

Island Health should explore putting a permit cap on the annual parking permit and scratch passes with the long-term plan to eliminate altogether. This may only be conducted once the majority of staff parking spaces are located in parkades, as indicated in the MCP.

Strategy 1.3:
Develop an Integrated Parking System

Phasing out the annual staff parking permit in favor of a pay-by-day approach (see previous section) requires moving away from scratch passes toward an automated system. There are a variety of systems / technologies that may be pursued, with further consideration given by Island Health at a later date. See **Table 26** for a summary of options.

TABLE 26. **PARKING TECHNOLOGY OPTIONS**

Name	Description
Pay-and-Display	Customer pays at a pay station in advance and places their receipt on their vehicle. The customer selects the amount of time and makes a payment. Enforcement officers audit by looking in vehicles for receipts.
Pay-by-Phone	Enables a customer to pay using a cell phone or mobile application. The service provider charges the parking fees and reimburses the parking operator. Enforcement officers audit by checking online databases for valid plates.
Pay-by-Plate	Customer pays at a pay station in advance. The customer enters license plate number and makes payment. Enforcement officers audit by checking the pay station or going online to view a list of license plates marked as paid
Pay-by-Space	Customer pays at a pay station in advance. The customer selects parking space locations (usually numbered) and makes payment. Enforcement officers audit by checking the pay station for a list of paid-for spaces.
Pay-on-Entry	Customer pays for parking when enters. Can be used as customers paying a deposit and receive some portion of that money back on exit, if there is more than one rate in effect at a given time.
Pay-on-Foot	Customer pays for parking at a pay station before exiting the facility. Customers insert their ticket into a machine and make payment, and the machine returns their ticket. Customers return to their vehicle and insert their ticket into the exit station.
Pay-on-Exit	Customer pays in-lane while exiting a facility. Payment may be made to a cashier or use credit card payment in the exit lane.

Moving to the automated parking management system will afford a range of options to enhance parking service provision, better manage parking demand, and implement new TDM programs.

The following options may be pursued as part of or subsequent to implementing automated parking systems.

Alert System

An "alert system" may be implemented to provide real-time travel information communicated via website and/or mobile application. This may include the following:

- Real-time mapping indicating where parking is available on-site
- Real-time payment updates to alert parkers when time is up, offering the option for remote payment via online payment and/or mobile payment machines
- Day-by-day travel tracking providing individuals with information on their travel characteristics (total distance, calories burned, etc) and Island Health with travel data for future planning purposes

Smart Card

Moving to an automated system also presents the opportunity to implement a transportation (or broader) SmartCard system that allows staff pre-pay for transportation and parking services, track progress, and integrate with other administrative and security access. The specific transportation functions of the SmartCard are as follows:

- Parking: Used to gain access and make payment to parking facilities through controlled access locations or centralized metres (which will occur through MCP buildout).

- Cycling: Used to gain access to secured bike parking facilities (bike centre, compound, bike lockers), as well as tracking staff cycling.

- Shuttle: Used to board the shuttle and would track staff shuttle use

- Transit: Used to verify enrollment in the ProPASS or make payment from a pre-paid transit fund (possibly with subsidization), as well as to track staff transit rides.

Strategy 1.4:
Vary Visitor Parking Costs by Time of Day

Peak visitor (and site-wide) parking demand is from 10:00am-2:00pm, and drops significantly outside of those times. To better distribute parking demand throughout the day, Island Health should explore varying parking rates by time-of-day with rates higher in peak periods than in off-peak periods. Variable rates will be more easily managed once visitor parking is managed via an automated system in new parkades.

CITY OF SEATTLE

Seattle has recently installed new smart parking stations which automatically change the price of parking depending on the time of day. From 8:00am-11:00am the cost is $3.00/hour and from 11:00am to 6:00pm the cost is $4.00/hour.

Public parking (visitor) at representative hospitals were reviewed. See **Table 27**. Results suggest that RJH hourly visitor parking prices are average compared to representative hospitals.

TABLE 27. **VISITOR PARKING COSTS AT REPRESENTATIVE HOSPITALS**

Hospital	Hourly Cost ($)
Abbotsford Regional Hospital + Cancer Centre	2.50
Burnaby Hospital	4.25
Chilliwack General Hospital	1.75
Kelowna General Hospital	1.50
Langley Memorial Hospital	3.50
Lions Gate Hospital (North Vancouver)	1.75
Nanaimo Regional General Hospital	2.25
Penticton Regional Hospital	1.00
Richmond Hospital	3.00
Royal Inland Hospital (Kamloops)	1.50
Royal Jubilee Hospital	2.25[39]
St. Joseph's General Hospital (Comox)	1.50
St. Paul's Hospital (Vancouver)	n/a
Surrey Memorial Hospital	3.88
Vancouver General Hospital	6.00
Vernon Jubilee Hospital	1.00
Victoria General Hospital	1.38
Average	**2.29**

[39] For purposes of this comparison, the price for the first hour in the Bay Street Parkade was used

5.3.2 Transit

Strategy 2.1:
Increase ProPASS Subsidy

Island Health has increased the ProPASS subsidy by nearly triple since 2009, from $5.54 per pay period in 2009 to $16.17 in 2014. The subsidy contribution was an estimated $170,000 over the past two fiscal years (2013-2014, 2014-2015). ProPASS enrollment has increased each year since the program was introduced, with an average of 32 new participants each year. Coordination with Fraser Health Authority and Interior Health was conducted to determine their transit pass program. It was indicated that neither health authority provides a subsidized transit pass to staff, suggesting that Island Health is a leader in the province.

The University of Victoria is the only other campus-based employer in Greater Victoria offering a further subsidy on the ProPASS. The monthly cost is similar to the cost to RJH staff.
Other campus-based employers are enrolled in the ProPASS program but do not provide a further subsidy. See **Table 28**.

TABLE 28. **COST OF STAFF TRANSIT PASS AT CAMPUS-BASED EMPLOYERS IN VICTORIA**

Site	Monthly Transit Cost ($)
Royal Jubilee Hospital	35.56
University of Victoria	38.50
Camosun College	73.00
Royal Roads University	73.00
Average	**55.02**

Island Health should continue increasing the ProPASS subsidy to reduce the cost to staff and encourage more staff to enroll. A target reduction to staff of 20% per pay period by 2035 (approximately $14.50 per pay period) should be considered to bring the annual cost of the ProPASS to approximately 35% the cost of annual staff parking, providing a significant financial incentive to use transit. In order to achieve this decrease, the cost may be decreased incrementally each year to be a 10% decrease in 2025 (approximately $15.50 per pay period) and a 15% decrease in 2030 (approximately $15.00). The cost to staff will largely be dependent on the actual cost of the ProPASS and the amount of subsidy Island Health provides.

Strategy 2.2:
Provide ProPASS for Casual Staff

The staff ProPASS is currently offered to permanent Island Health staff only. Island Health should consider coordinating with BC Transit to alter criteria to accommodate casual staff. The cost of the ProPASS would be the same from BC Transit, however, Island Health could provide a subsidy that is 50% of the subsidy offered to permanent staff, as casual staff could be using the transit pass for more trips that are not related to their commute to RJH. A monthly pass from BC Transit currently costs $85; suggesting casual staff will be saving approximately $20 per month if the program starts in 2015. The existing limitation to implementation of this program is related to the accounting system.

Strategy 2.3:
Accommodate Proposed Frequent Transit Network

Fort Street is identified in BC Transit's *Transit Future Plan* as part of the "Frequent Transit Network", suggesting that service frequency will be 15 minutes or better between 7:00am and 10:00pm and that enhanced bus stops will be provided at select locations to include level door boarding, off-board fare payment, real time customer information and bike storage[40]. RJH is a significant generator of transit trips and planning by Island Health and the City of Victoria should ensure that bus stops on Fort Street are appropriately integrated with the site, as follows:

- Work with the City of Victoria and BC Transit to select bus stop locations that minimize walking distance to the site (see **Figure 15**)
- Ensure the MCP provides for direct pedestrian routes from bus stops to key buildings / destinations on site
- Ensure convenient, safe crossing of Fort Street from the south side bus stop

Further, Island Health may give consideration to implement real-time bus schedule / arrival information in key locations on-site (i.e. PCC courtyard, D+T entrance). Such systems would become operational if the BC Transit real-time information system is established.

[40] Available online at: http://bctransit.com/servlet/documents/1403641054473

FIGURE 15. **PREFERRED FORT STREET BUS STOP LOCATIONS**

5.3.3 Shuttle Service

Strategy 3.1:
Modify Shuttle Schedule

Many people indicated through the travel survey that the shuttle bus frequency needs to increase to make the service more attractive, particularly during AM and PM peak periods. The majority of shifts at the site are from 7:00am-7:00pm and 8:00am-4:00pm (plus or minus 30 minutes).

A modified shuttle schedule is proposed to better accommodate peak periods with three added trips and the existing shuttle vehicles (i.e. no new vehicles needed). See **Table 29**. The following summarized key changes:

- The regular shuttle bus should begin earlier and leave RJH at 6:20am so staff can arrive at VGH for their 7:00am shift;
- The enhanced shuttle bus in the morning should begin 10 minutes earlier in order to get staff to their designated sites 15 minutes before shift change;
- The afternoon schedule is deemed appropriate for shifts ending around 4:00pm;
- Shuttles should be added to accommodate those shifts ending at 7:00pm. A shuttle should leave RJH at 7:10pm and arrive at VGH at 7:35 and drive back to RJH;
- The shuttle bus in the evening should leave 5 minutes later to give staff more time to get organized.

TABLE 29. **PROPOSED SHUTTLE BUS SCHEDULE**

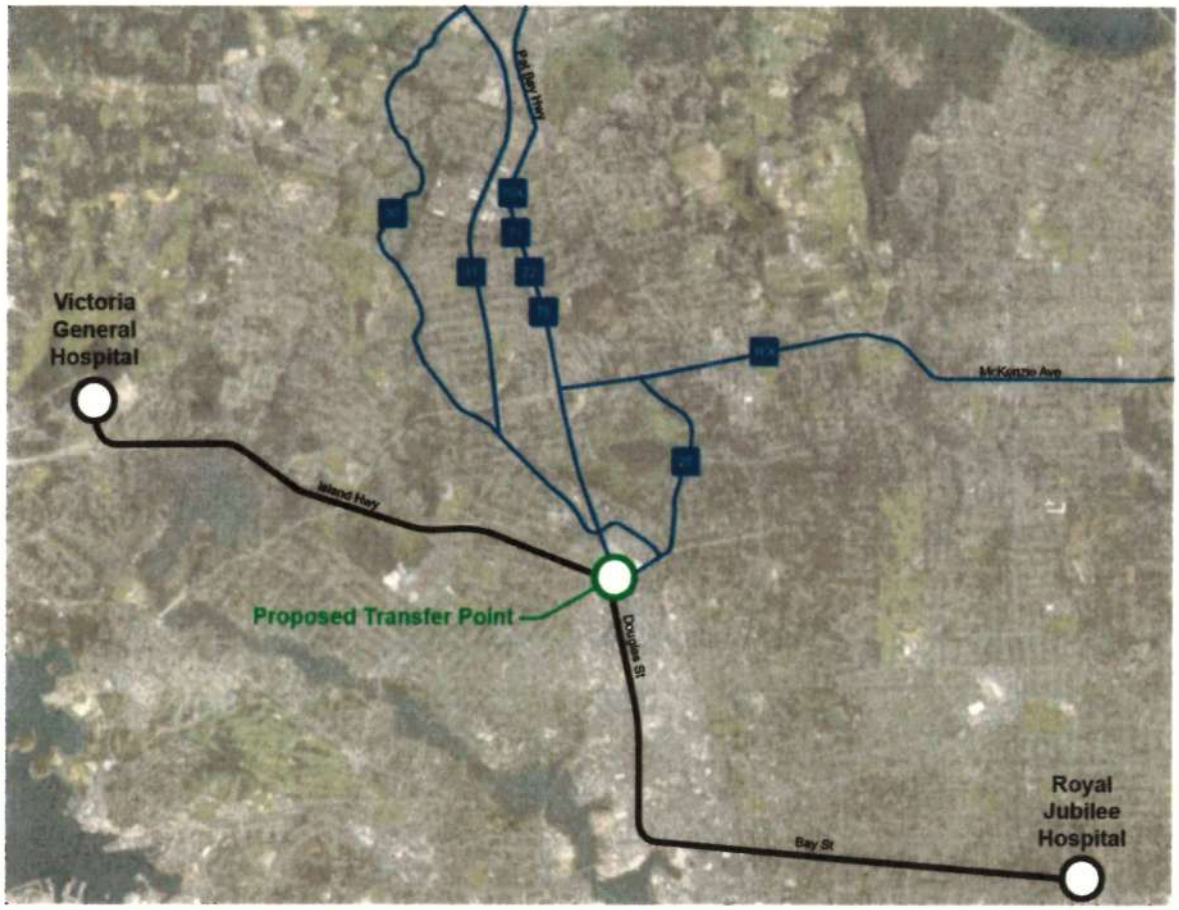
EXISTING				PROPOSED			
Eastbound		Westbound		Eastbound		Westbound	
Depart VGH	Arrive RJH	Depart RJH	Arrive VGH	Depart VGH	Arrive RJH	Depart RJH	Arrive VGH
6:30am	6:55am	7:00am	7:25am	6:20am	6:45am	6:20am	6:45am
7:30am	8:00am	7:50am	8:20am	6:50am	7:15am	6:50am	7:15am
8:40am	9:20am	9:55am	10:25am	7:20am	7:45am	7:20am	7:45am
10:45am	11:10am	12:00pm	12:30pm	8:40am	9:20am	7:50am	8:20am
12:50pm	1:15pm	1:50pm	2:20pm	10:45am	11:10am	9:55am	10:25am
2:40pm	3:10pm	3:15pm	3:45pm	12:50pm	1:15pm	12:00pm	12:30pm
3:50pm	4:15pm	3:30pm	4:10pm	2:40pm	3:10pm	1:50pm	2:20pm
4:25pm	4:50pm	4:20pm	5:00pm	3:50pm	4:15pm	3:15pm	3:45pm
5:55pm	6:20pm	5:10pm	5:40pm	4:25pm	4:50pm	3:30pm	4:10pm
7:50pm	8:15pm	7:05pm	7:30pm	5:55pm	6:20pm	4:20pm	5:00pm
				7:40pm	8:15pm	5:10pm	5:40pm
						7:10pm	7:35pm

Strategy 3.2:
Create Shuttle Transfer Point

The shuttle operates on a direct route between VGH and RJH. The current routing accommodates trips between hospital sites, as well as VGH staff living nearby RJH and RJH staff living nearby VGH.

To better accommodate staff living elsewhere, consideration should be given to adding transfer points along the route. A transfer in the vicinity of the Uptown Mall / Saanich Road area would facilitate transfer between the shuttle and numerous bus routes nearby (16x, 26, 30, 31, 50, 70, 71, 72, 75). See **Figure 16**. Further, cyclists could access the transfer point via the Lochside Regional Trail or Galloping Goose Regional Trail and use shuttle bike racks (see following section) and/or park their bike at the transfer point. Consideration should be given to a location that has existing bike parking or where new facilities could be provided.

FIGURE 16. **PROPOSED SHUTTLE TRANSFER POINT**



The following may also be considered in the future:

1. Add additional transfer points at locations along the shuttle route (potentially at Tillicum Rd, Hillside Ave/Gorge Rd, Bay St/Douglas St);
2. Add a new route(s) with transfer points along them to appeal to staff residing elsewhere in the Capital Region (Gordon Head/UVic, Royal Oak/Saanich Penninsula); and
3. Establish Uptown transfer point as future BC Transit service along Douglas Street increases and planned exchange is developed immediately west of Uptown.

SURREY MEMORIAL HOSPITAL, SURREY BC

A shuttle service is offered between Surrey Memorial Hospital and the King George Skytrain station with monthly ridership of 3,400 passengers.

Strategy 3.3:
Install Bike Racks on Shuttle Vehicles

Staff indicated a desire in the travel survey for shuttle vehicles to accommodate bicycles so they may use the shuttle for the morning or afternoon portion of their commute and bicycle for the other, or accommodate staff seeking to bicycle to/from VGH and shuttle to RJH (particularly applicable for staff residing in View Royal and the Western Communities). Island Health should install bike racks on existing shuttle vehicles. Bike racks can be placed on the rear hitch of the vehicle and may have the ability to accommodate four bicycles at one time with having the ability to access the trunk. The rack will cost approximately $1,000 depending on the model selected. Further research may be required to determine the exact bike rack and mounting system required.

5.3.4 Carpool

Strategy 4.1:
Relocate Carpool Parking Spaces

The primary carpool and rideshare parking supply is located adjacent the Food Services Building on Lee Avenue. This is not a central location and remote from key staff destinations (PCC, D+T, Royal Block). It is recommended that the carpool / rideshare spaces are relocated to a more convenient location with improved pedestrian access to key staff building entrances to make them more desirable to potential carpoolers.

5.3.5 Cycling

Strategy 5.1:
Create a Bicycle Centre

The existing bicycle parking compounds under the Diagnostics + Treatment Building and the Foods Services building provides secure bicycle parking and bicycle lockers. Consideration should be given to expand these facilities as cycling demand increases.

Further, a long-term plan should be established to create an on-site "Bicycle Centre" that provides a variety of bicycle parking options (racks, lockers, cages), bicycle repair tools and/or

service, personal lockers, lighting and surveillance, and charge facilities for electric bicycles. Consideration should be given in future buildings as to where this facility will be accommodated, ensuring the location is easily accessed by bicycle and centrally located near key end-points.

With the installation of the bike centre, continual increases in bike parking supply (bike racks) should occur in order to accommodate future demand.

UVIC CAMPUS BIKE CENTRE

The University of Victoria's "Campus Bike Centre" should be used as a model for a similar facility at RJH. The UVic Centre includes bike racks, bike lockers, tire pumps, repair tools, personal lockers, surveillance camers and the office for the "SPOKES" program that provides a part-time bike mechanic and bicycle loan service to students/staff requiring assistance.

Table 30 provides a summary of cycling and electric vehicle resources at representative hospitals in the Fraser Health Authority. Results indicate that all hospitals provide short-term bike parking and shower/change facilities. All but on hospital provides long-term bike parking, and only select hospitals provide cycling workshops and electric vehicle charging stations.

TABLE 30. **SUMMARY OF CYCLING/EV RESOURCES AT REPRESENTATIVE SITES**

Hospital	Short-term Bike Parking	Long-term Bike Parking	Shower/ Change Facilities	Cycling Workshops	EV Charging Station
Royal Jubilee Hospital	✓	✓	✓	✓	
Abbotsford Regional Hospital and Cancer Centre	✓	✓	✓		✓
Burnaby Hospital	✓	✓	✓	✓	✓
Chilliwack General Hospital	✓	✓	✓		
Delta Hospital	✓		✓		
Langley Memorial Hospital	✓	✓	✓		
Surrey Memorial Hospital	✓	✓	✓	✓	✓

Strategy 5.2:
Install Personal Lockers in New Buildings

Personal lockers should be installed in each new building to accommodate staff seeking a shower and change facility after cycling (or other active mode) to the site.

Strategy 5.3:
Ensure Adequate Bike Route Signage

The Capital Regional District (CRD) has developed Interim Cycling Destination Wayfinding Guidelines[41] to create uniform cycling wayfinding signs through the Capital Region. With funding support from CRD, member municipalities have begun installing cycling wayfinding signs. Island Health should coordinate with the City of Victoria, District of Saanich, and District of Oak Bay to ensure that RJH is included as a destination on bicycle wayfinding signs.

Further, consideration should be given to installing on-site bicycle wayfinding signs to guide cyclists from adjacent cycling routes to the future Bicycle Centre (see above). On-site signs should be consistent with the CRD guidelines.

[41] Interim Cycling Destination Wayfinding Guidelines available at: www.crd.bc.ca/project/pedestrian-cycling-master-plan

5.3.6 Alternative Schedules

Strategy 6.1:
Modify Clinic Service Hours to Off-Peak Periods

Currently, it is understood that the majority of clinic and outpatient medical services are offered during typical weekday business hours, and concentrated mid-week from 10:00am to 2:00pm (parking observations reflect this assumption). Parking capacity is created to address conditions during peak periods, but is then under-utilized during off-peak periods. Island Health could modify clinic service hours to offer treatments outside peak periods to shift parking demand (and traffic) away from peak periods to make use of available parking during off-peak times.

Of all potential TDM approaches, modifying clinic hours could have the largest impact on reducing peak period parking demand. This would represent a significant change in philosophy from Island Health and may take time to be supported by administration. This may not be feasible for certain clinics / service providers.

Strategy 6.2:
Stagger Staff Shifts

Staggering staff shifts involves altering shift schedules so that not all staff arrive at the site at once, reducing intersection capacity needed to provide acceptable conditions for vehicles entering/exiting the site at that time. This will also require support from Island Health administration and may take some time before realized, and may not be appropriate for certain staff positions.

FRASER HEALTH AUTHORITY
The Fraser Health Authority provides the option for staff to participate in alternative schedules including teleworking, video/teleconferencing, working from home and flex time.

5.3.7 Promo

Strategy 7.1:
Allocate Hours to Create a Transportation Promo Program

A promotional program should be created on site to further increase cycling, transit, walking and rideshare usage on site. It is imperative a program is created, as if staff are not told about their travel options, they would not know to take them. An existing position at Island Health should be modified to include the promo program as a key dute. A certain number of their hours shall be

allocated out of their regular role and given to implementing this program. The programs that will be implemented are up to the discretion of this dedicated staff member. However, it should include promotional materials and events throughout the year. An annual budget of $10,000 should be used for promo programs.

5.3.8 Miscellaneous

Strategy 8.1:
Provide a Chaperone

Protection Services are currently available on-site during the evening to chaperone staff to and from bus stops, cycling facilities or parking facilities far from building entrances. Further promotion should occur to increase uptake and awareness of this program.

Strategy 8.2:
Retain Pedestrian Access on Site

Retaining pedestrian access and routes throughout the site is important to encourage walking and to ensure connectivity between the different roads surrounding the site. The MCP outlines existing and future pedestrian routes surrounding the site.

TDM Options for Future Consideration

1. Consider modifying transit routes to accommodate those locations which are currently not served by transit.

2. Consider modifying transit schedules to accommodate major shift changes

3. Advocate for more cycling routes that connect major destination in the area with RJH. For example, staff who live in the western communities travel via the Gallooping Goose Trail but then there is a missing link from the trail to the site.

4. Develop a Guaranteed Ride Home program that provides a limited supply of taxi vouchers for staff who walk, bicycle or take transit and require an emergency ride.

5.4 Summary of Recommended TDM Strategies

Table 31 provides a summary of all recommended TDM Strategies as outlined in Section 5.0.

TABLE 31. **SUMMARY OF RECOMMENDED TDM STRATEGIES**

Section	Recommended Strategy
Parking	1.1 Increase Cost of Staff Annual Parking Permit 1.2 Phase-Out Annual Parking Permit and Scratch Staff Parking Passes 1.3 Develop an Integrated Parking System 1.4 Vary Visitor Parking Costs by Time of Day
Transit	2.1 Increase ProPASS Subsidy 2.2 Provide ProPASS for Casual Staff 2.3 Accommodate Proposed Frequent Transit Network
Shuttle Service	3.1 Modify Shuttle Schedule 3.2 Create Shuttle Transfer Point 3.3 Install Bike Racks on Shuttle Vehicles
Carpool	4.1 Relocate Carpool Parking Spaces
Cycling	5.1 Create a Bicycle Centre 5.2 Install Personal Lockers in New Buildings 5.3 Ensure Adequate Bike Route Signage
Alternative Schedules	6.1 Modify Clinic Service Hours to Off-Peak Periods 6.2 Stagger Staff Shifts
Promotional	8.1 Allocate Hours to Create a Transportation Promo Program
Miscellaneous	9.1 Provide a Chaperone 9.3 Retain Pedestrian Access on Site