

**ART GALLERY OF GREATER VICTORIA  
RENEWAL PROJECT**

**Transportation Review  
TRANSPORTATION DEMAND  
MANAGEMENT (TDM) STRATEGY**

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## CONTENTS

<b>1.0</b>	<b>Introduction .....</b>	<b>1</b>
1.1	What is Transportation Demand Management (TDM)? .....	1
1.2	Travel Options .....	1
1.3	Existing Travel Patterns .....	4
<b>2.0</b>	<b>Permanent TDM Facilities .....</b>	<b>5</b>
2.1	Bike Racks .....	5
2.2	Long-term Bike Parking .....	5
2.3	Cycling Trip-End Facilities .....	7
2.4	Passenger Drop-Off .....	7
<b>3.0</b>	<b>Scheduled Programs .....</b>	<b>8</b>
3.1	Parking Management .....	8
3.2	Transit Tickets .....	9
3.3	Bike Parking / Valet .....	9
3.4	Chaperone .....	10
3.5	Information .....	10
3.6	Summary .....	10
<b>4.0</b>	<b>Supplementary Programs .....</b>	<b>12</b>
4.1	Employee Transit Passes .....	12
4.2	Guaranteed Ride Home .....	12
4.3	Bike Share .....	12
4.4	Other Programs .....	13
4.5	Summary .....	15
<b>5.0</b>	<b>Summary .....</b>	<b>16</b>
5.1	Recommendations .....	17
<b>Appendix A</b>	<b>Summary of Employee Survey .....</b>	<b>18</b>
<b>Appendix B</b>	<b>Summary of Scheduled Programs .....</b>	<b>19</b>

## 1.0 Introduction

Boulevard Transportation, a division of Watt Consulting Group, was retained by CitySpaces Consulting to conduct a comprehensive transportation review of the Art Gallery of Greater Victoria (AGGV) Renewal Project. The review consists of three studies each under separate cover, as follows:

1. Parking Study;
2. Traffic Impact Assessment; and
3. Transportation Demand Management (TDM) Strategy.

The following is the AGGV TDM Strategy. The purpose of the study is to identify a transportation demand management (TDM) strategy for the Art Gallery to reduce parking demand, mitigate neighbourhood parking challenges, and encourage sustainable travel. TDM is considered for employees, guests, and to address challenges during scheduled programs. The Strategy is intended for the City in reviewing the site TDM provisions and for the Art Gallery to understand how to implement TDM among staff and during scheduled programs.

### 1.1 What is Transportation Demand Management (TDM)?

Transportation demand management (TDM) refers to policies, programs, and services that influence whether, why, when, where, and how people travel<sup>1</sup>. TDM programs typically encourage people to use travel modes other than SOV (single-occupancy vehicle) including walking, cycling, public transit, and carpools.

### 1.2 Travel Options

The Art Gallery is in a central location with strong walking, cycling, and public transit options. See *Map 1*.

#### 1.2.1 Walking

Walking is supported surrounding the site by having good sidewalk coverage on both sides of the majority of roads. The site has a WalkScore of 84 points which suggests all errands can be done on foot. It takes approximately 20 minutes to walk to downtown, 13 minutes to walk to Fernwood and 15 minutes to walk to Fairfield.

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<sup>1</sup> Definition based on Transport Canada, TDM for Canadian Communities, March 2011

### 1.2.2 Cycling

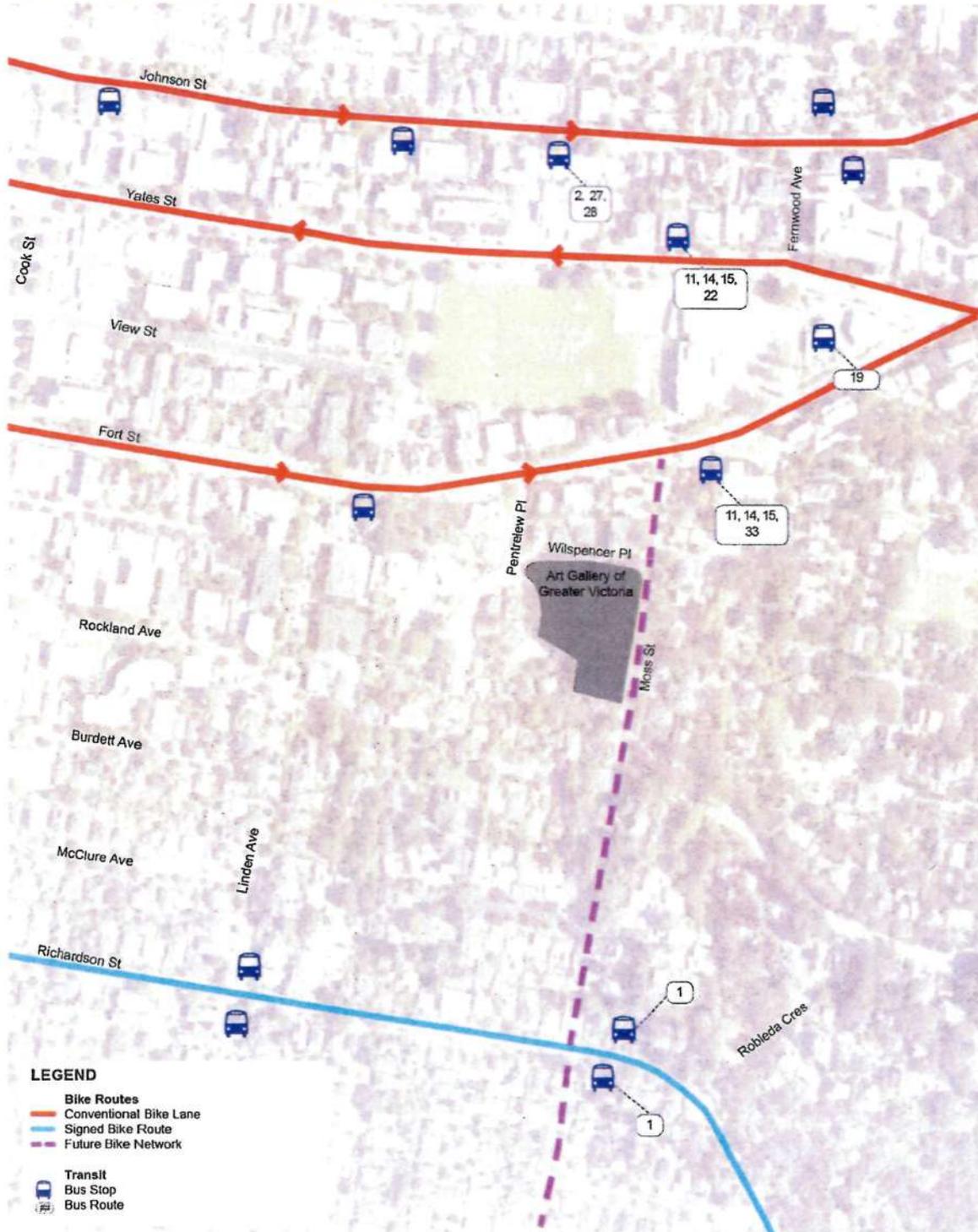
There are conventional bike lanes nearby on Fort Street, Yates Street and Johnson Street that provide connectivity between the Art Gallery and Oak Bay, downtown Victoria, and the Saanich Peninsula and Western Communities via the Galloping Goose Regional Trail. Richardson Street is identified as a signed bike route with connectivity within the Fairfield neighborhood and to downtown Victoria. Moss Street is a future bike route.

The site currently has one bike rack adjacent the front parking lot. Additional bicycle parking and shower/change facilities are proposed as part of the Renewal (see *Section 2.0*).

### 1.2.3 Public Transit

The following public transit routes service bus stops within a five minute walk (400m) of the Art Gallery site - 2, 11, 14, 15, 27, 28, and 33. These routes provide service to regional destinations such as downtown Victoria, Royal Jubilee Hospital, University of Victoria and provide opportunity to transfer onto other routes serving the rest of the Capital Region. Peak period service frequency is approximately one bus every 5 minutes at the nearby Fort Street bus stop, Yates Street bus stop, and Johnson Street bus stop.

**MAP 1. MAP OF TRANSIT AND CYCLING ROUTES**

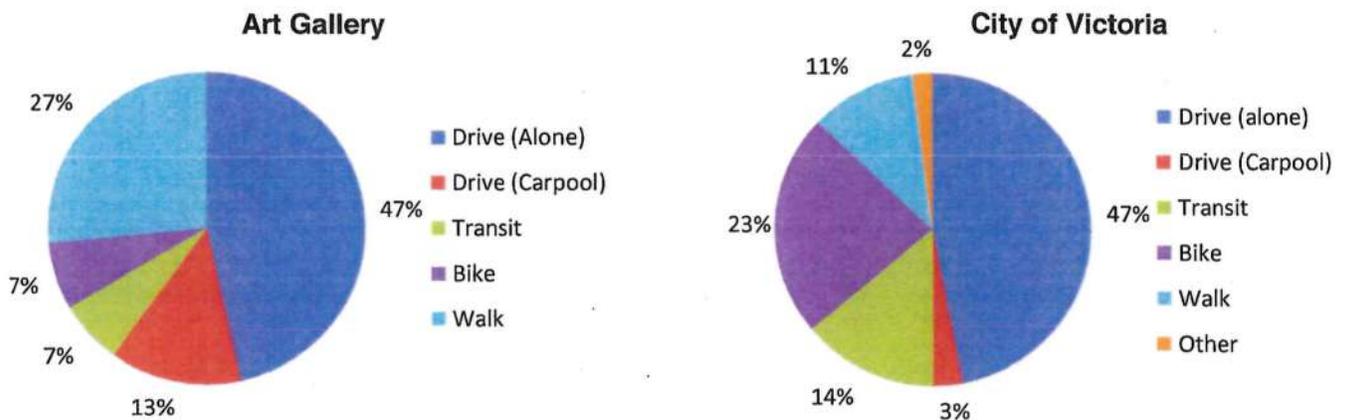


### 1.3 Existing Travel Patterns

A survey of Art Gallery employees was conducted to determine travel habits. A total of 17 surveys were received, representing approximately 80% of all employees, with 21 employees in total. See *Appendix A*.

Employee mode share was determined to be approximately half single-occupant vehicle (SOV), one-quarter walking, 13% carpool, and 7% transit and cycling. The City of Victoria has a similar SOV modeshare and a lower carpool and walking modeshare and higher transit and cycling modeshare. See *Figure 2*. Peak parking demand for employees is 16 vehicles in the winter and 14 vehicles in the summer.

FIGURE 2. ART GALLERY MODESHARE VS CITY OF VICTORIA MODESHARE



Mode share varies by season, with approximately 10% lower driving share and 5% higher rate of walking and cycling shares in summer as compared to the rest of the year.

#### 1.3.1 Impact

TDM programs presented in this report target employees at the Art Gallery. Based on results of the survey there is a total of 16 employees who are targetable to change their travel habits from SOV to alternative modes. Although it is unlikely to alter every employee's habits, a portion of this group could be encouraged to change their habits resulting in lower parking demand at the site. Based on programs provided, 10% of these employees may change their habits, reducing two vehicles from the site. It is not necessary to target those employees who are already using alternative modes.

## 2.0 Permanent TDM Facilities

The Art Gallery Renewal proposal includes permanent TDM facilities indicated on the Landscape Plan and schematic building design – bike racks, long-term bike parking, shower / change facilities, and passenger drop-off area. Each is described in more detail in the following section.

### 2.1 Bike Racks

The City's bicycle parking requirement is one space per 100m<sup>2</sup>, 80% of which is allocated as Class 2 parking (bike racks). The required bike rack provision is 38 Class 2 spaces, which the site plan is meeting.

Bike racks will be provided adjacent the primary building entrance in two locations. The majority will be along the east building face adjacent Moss Street. Additional spaces will be provided adjacent the stairwell at the on-site drop-off area. Both locations are considered appropriate, as they are near key building entrances, under surveillance, and weather protected. The City's *Bicycle Parking Strategy*<sup>2</sup> provides additional guidance on bike rack placement and design.

A temporary expansion of the bike rack supply during scheduled programs for guests is suggested. See *Section 3.3*.

### 2.2 Long-term Bike Parking

The City's bicycle parking requirement is one space per 100m<sup>2</sup>, 20% of which is allocated as Class 1 parking (long-term parking). The required Class 1 bike parking provision is ten spaces.

Results from the employee survey show that seven employees stated that if there was bike lockers, this would encourage them to cycle more; consistent with the City's supply requirement. See *Appendix A* for the survey results. *Section 4.0* outlines supporting TDM programs, including a bike share program for employees. The long-term bike parking should accommodate two additional bike spaces, totalling 12 spaces.

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<sup>2</sup> Available at: [www.victoria.ca/assets/Departments/Engineering~Public~Works/Documents/parking-bicycle-strategy.pdf](http://www.victoria.ca/assets/Departments/Engineering~Public~Works/Documents/parking-bicycle-strategy.pdf)

The long-term bike parking will be designed as a bike cage and will be located at the west end of the parking lot. The *City of Victoria Bike Parking Strategy* provides detail on bike parking layout, dimensions, lighting, and security, as follows:

- **Lighting:** Lighting is desirable when located in a public place and used after dark. Lighting should provide a one-foot candle illumination at ground level, protected to decrease the chances of vandalism, and a convex mirror provided to increase sightlines.
- **Security:** Access should be controlled with a locked door or gate, and access granted with a key or access code. Access codes should be regularly changed.
- **Monitoring:** Locate the facility for passive monitoring by employees and guests. Also have building / security staff conduct regular monitoring.
- **Emergency:** Install a "panic button" with a direct line to security in case of emergency.
- **Proximity:** The facility should be located as close as practical to primary staff building entrances and in consideration of shower / change area location(s).
- **Layout:** The facility should be designed with bike parking space dimensions and aisle widths consistent with the *Bicycle Parking Strategy*.

Additionally, a small repair station will be included in the long-term bike parking area that includes a bike stand, basic bike tools, and a bicycle tire pump.



Bike compound  
<https://www.merlin-industrial.co.uk/environment/shelters/857-bike-shelters>

## 2.3 Cycling Trip-End Facilities

Showers, change rooms and lockers are proposed to allow employees that bicycle to the Art Gallery to “freshen up” and store cycling gear. This is not a requirement of the City and something the Art Gallery is providing to facilitate cycling among employees. Installing showers and change rooms were commonly cited in the Art Gallery employee survey as provisions that would encourage them to bicycle more often. See *Appendix A*.

The shower and change facility is proposed in the mansion basement (northwest corner). The facility should be restricted to Art Gallery staff and consist of two shower / change areas (one male, one female). Change areas should include a grooming station with mirror, wash basin, countertop and electrical outlet. The City of Victoria has a clothing locker requirement of one locker per one required bike parking space. However, this would not accommodate non-cyclists including walkers and joggers. Therefore, 14<sup>3</sup> lockers should be provided and may be in a common area. The City's *Bicycle Parking Strategy* should be referenced for further details.

## 2.4 Passenger Drop-Off

A passenger drop-off area is proposed on Moss Street adjacent the site. This will provide an opportunity for passenger drop-off and tour bus drop-off/pick-up without entering the site, as well as enhance drop-off/pick-up during scheduled programs that require vehicles park off-site.

The drop-off area should be 14m in length to accommodate one bus or two vehicles. The space should be demarcated with a white painted curb and the “passenger zone” parking restriction sign indicating three- or five-minute maximum.

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<sup>3</sup> This is support by the City of Vancouver requirement of 0.7 lockers per required bike parking space, for each sex

## 3.0 Scheduled Programs

The *Parking Study* determined that parking demand will exceed on-site parking capacity during medium and large scheduled programs, which occur an estimated 27 times per year (23 medium, 4 large)<sup>4</sup>. See *Appendix B*. This suggests there will be increased demand for on-street parking approximately once every two weeks. *Table 1* shows the approximate frequency and parking demand for each sized scheduled program.

**TABLE 1. EXPECTED PARKING DEMAND FOR EACH SIZED-SCHEDULED PROGRAM**

Program Size	Frequency (per year)	Estimated Parking Demand	Assignment	
			On-Site	Off-Site
<b>Small</b> (estimated 50 people)	163	21 vehicles	17 vehicles	0 vehicles
<b>Medium</b> (estimated 125 people)	23	51 vehicles	28 vehicles	23 vehicles
<b>Large</b> (estimated 300 people)	4	122 vehicles	28 vehicles	94 vehicles

A TDM strategy has been developed to specifically address the increase in parking demand associated with scheduled programs, in coordination with the parking management strategies identified in the *Parking Study*. Consideration is given to approaches implemented during medium and large scheduled programs.

### 3.1 Parking Management

A parking management strategy will be implemented during scheduled programs, identified in the *Parking Study*, as follows:

- Off-site parking. Off-site parking lots will be obtained to provide additional parking spaces for guests and employees.
- Open secondary on-site parking area. The secondary parking lot should be opened when parking demand is expected to exceed occupancy of the lot.
- Require staff to park off-site. Staff should be directed to park off-site, either on off-site lots (if available) or on-street that is not directly adjacent the site.

<sup>4</sup> Based on 2014 AGGV event calendar, available at: <http://aggv.ca/calendar>

- Carpool parking. Two parking spaces will be reserved as carpool parking on the Art Gallery lot by signage. They will be available to all after one hour of the program commencing.
- Signage. Signage will be posted in front of the Art Gallery directing people on where available parking is.

Table 2 provides a summary of when each parking management option should be implemented.

**TABLE 2. SUMMARY OF SCHEDULED PROGRAM PARKING MANAGEMENT**

	Open 2nd Parking Area	Staff Park Off-Site	Carpool Parking	Signage	Off-Site Parking
<b>Small Program</b> (50 people)	✓				
<b>Medium Program</b> (125 people)	✓	✓	✓		
<b>Large Program</b> (300 people)	✓	✓	✓	✓	✓

### 3.2 Transit Tickets

A one-way transit ticket could be included in the price of the scheduled program ticket. This is especially important at programs which serve alcohol to ensure guests get home safely. The Art Gallery could purchase 40 ticket books; each ticket book includes 10 tickets at the price of \$22.50 a book. No additional discount would be available. The total price would be \$900 for 400 one-way tickets. There are no refunds on tickets which are unused, however, these tickets have no restrictions and can be used at any time during BC Transit's operating hours.

### 3.3 Bike Parking / Valet

Increased bike parking can be provided during scheduled programs, if demand necessitates it. On large scheduled programs, which can attract up to 400 people, bicycle parking demand will exceed the day-to-day supply, if 10% of people bike to the Art Gallery (40 bike parking spaces). Additional bike parking should be placed surrounding the existing parking. To allow cyclists to be at ease more in terms of the level of security, an attendant can be placed at the bike parking to monitor bicycles.

A bike valet program may also be available which would be located surrounding the existing short-term bicycle parking. Cyclists will check their bikes with an attendant and receive a ticket to retrieve their bike, similar to a coat check. The valet will be attended throughout the evening to decrease chances of theft.

### 3.4 Chaperone

Personnel will be hired to chaperone people to and from bus stops and available off-street parking lots. These chaperones will only be hired for scheduled programs which occur in the evening to allow attendees to be at ease when walking in the dark. Two chaperones should be available for the extent of the program.

### 3.5 Information

When guests purchase a ticket to a scheduled program (whether in-person or online) information regarding transportation options can be provided. This will allow guests to plan their travel to and from the Art Gallery before the program begins. Information may include:

- If there are any off-site lots that are available during the scheduled program. Information should include the address of the lot, directions, capacity and the times when parking is available.
- Stating whether or not there will be chaperones available to walk and direct people to off-site parking lots and bus stops.
- Transit information should be available including location of the closest bus stops and the routes which serve these bus stops. The information package should also include whether or not there is a transit ticket included in the price of the scheduled program ticket.
- Cycling information should be provided including a map of cycle routes in the area. Information regarding bike parking should also be provided including if there is additional parking than day-to-day or if there is a bike valet service.
- Phone numbers for the various taxi companies in Victoria should be provided including Victoria Taxi, Bluebird Cab and Yellow Cab.

### 3.6 Summary

Scheduled programs occur frequently at the Art Gallery and can attract a range of people. TDM strategies are provided in order to alleviate stresses on parking and traffic in the area. Based on the frequency of scheduled programs all TDM initiatives will need to be implemented approximately four times throughout the year for large sized scheduled programs and fewer programs will be necessary 23 times throughout the year for medium sized scheduled programs. See *Table 3*.

**TABLE 3. SUMMARY OF TDM DURING SCHEDULED PROGRAMS**

	Parking Management					Others			
	Off-Site Parking	Open 2nd Parking Area	Staff Park Off-Site	Carpool Parking	Signage	Transit Tickets	Bike Parking /Valet	Chaperone	Information
<b>Small Program</b> (50 people)		✓							
<b>Medium Program</b> (125 people)		✓	✓	✓					✓
<b>Large Program</b> (300 people)	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 4.0 Supplementary Programs

The following TDM measures have been identified for the Art Gallery's consideration. They are intended to supplement the recommended TDM facilities (*Section 2.0*) and strategies for scheduled programs (*Section 3.0*), providing further opportunity to reduce single-occupant vehicle trips and reduce day-to-day parking demand by enhancing non-vehicular travel options for Art Gallery employee commuting.

### 4.1 Employee Transit Passes

The Art Gallery may consider providing transit passes to employees through the Employee Pro-Pass program at BC Transit. The program requires at least 10 employees to participate. Passes are given to the employer at a discount of \$73 per month, per pass. The Art Gallery may choose to subsidize the passes or not. *Table 4* shows a breakdown of cost for the Art Gallery if 15 people participate at two different amounts of subsidies.

**TABLE 4. SUMMARY OF EMPLOYEE TRANSIT PASS PROGRAM COSTS**

	1 month	6 months	1 Year
100% Subsidy	\$1,095	\$6,570	\$13,140
50% Subsidy <sup>5</sup>	\$547.50	\$3,285	\$6,570

### 4.2 Guaranteed Ride Home

A guaranteed ride home is a program for employees who use alternative modes such as walking, cycling or transit and need to get to a destination quickly due to an emergency. The Art Gallery will coordinate with Bluebird Taxi to obtain taxi vouchers for each employee to the amount of \$50 per year. With 21 employees<sup>6</sup> this will equal \$1,050. A charge account will be created, which employees can use when necessary. If employees do not use their annual GRH vouchers, the Art Gallery will not be charged for unused vouchers.

### 4.3 Bike Share

An employee bikeshare program can be implemented which provides bikes for employees during working hours to use for meetings within a reasonable proximity to the site. The program

<sup>5</sup> Employee pays \$36.50, employer pays \$36.50

<sup>6</sup> Based on conversations with Art Gallery staff

can be managed by having a “sign-out” sheet where employees indicate when they would like to use a bicycle. The Art Gallery should purchase two mountain bikes; one for women and one for men. The bikes will be stored in the bike cage. The cost of this will be approximately \$1,000 (\$500 x 2).

#### 4.4 Other Programs

Programs listed below are additional programs that the Art Gallery may choose to implement to further reduce parking demand and encourage alternative modes.

##### 4.4.1 Electric Vehicle Charging Station

An electric vehicle charging station may be reserved in the primary parking lot closest to the building entrance. As electric vehicles are becoming more prominent it is important to provide this service to encourage the use of sustainable modes. A disadvantage to providing this is that it takes away a parking space for other vehicles.

Management of this space can be done by the buildings/grounds/security manager who will be actively monitoring the parking lot on a daily basis. If the parking lot is approaching full occupancy, and this space is empty it can be changed to a regular parking space to decrease the amount of overspill onto on-street parking. This can be done by putting a temporary sign over the “EV Charging Station” sign which says temporary regular parking.

##### 4.4.2 Carpool Program

A carpool program may be implemented to encourage carpooling and reduce employee parking demand. There are two options to facilitate carpools, as follows:

- External: Encourage employees to sign up for Jack Bell RideShare, which is a free ridesharing website that matches commuters with similar origin and destinations.
- Internal: Post a sign-up sheet in the employee room that includes employee origin and approximate travel time, providing the opportunity to match compatible trips/employees.

##### 4.4.3 Alternative Scheduling

Employees may be given the option to participate in alternative work schedules including compressed work week, and staggered shifts (flexible start time). This will make employees arrival and departure times from the site staggered reducing vehicle and parking demand at one time.

*Compressed Work Week.* Employees work fewer but longer days, such as four 10-hour days each week, or 9-hour days with one day off every two weeks. This program will be available first come first serve in terms of the day the employee has off, as only one employee should have a flex day at one time.

*Staggered Shifts (Flexible Start Time).* This reduces the number of employees arriving and leaving a worksite at one time. For example, some shifts may be 8:00am to 4:30 pm, 8:30am to 5:00 pm and 9:00am to 5:30 pm. Shifts at the Art Gallery are dependent on Art Gallery opening hours, however, shifts can be staggered based on opening hours.

#### 4.4.4 Information

Information regarding cycling, walking, transit and carpooling in the region can be available including maps and safety tips. This information will be provided in a pamphlet to each employee and guest to the site.

#### 4.4.5 Transportation Allowance

A financial payment (to be determined, based on budget) will be provided to employees on a monthly basis. Employees can use this money to pay for parking or for another travel mode (transit pass, cycling equipment). A disadvantage to this program is that since employees would have to pay for parking on-site, this may encourage spillover into adjacent streets and those employees would essentially be “pocketing” their allowance.

#### 4.4.6 Events

Events can be transportation focused, or may be integrated into an existing event may occur at the Art Gallery throughout the year. These may include:

- Commuter Bike Workshop. A commuter bike workshop could be held once a year in the summer after Art Gallery open hours for employees. The course will teach attendees about cycling routes in the area, safety, proper clothing and equipment and learn about the different types of bicycles and how to choose one to meet ones needs. The workshop could be hosted by Bike Sense BC or CAN-BIKE, and will cost between \$250-\$350 for the workshop to occur at the Art Gallery. Employees may also be supported in participating in regional workshops.
- Event Days. Event days can be held throughout the year which can target employees and guests of the Art Gallery. The events will encourage use of alternative travel modes and provide information to those who are considering alternative modes. See *Table 5*.

TABLE 5. SUMMARY OF EVENT DAYS

Employees	Guests
<p><i>Bike to Work Week.</i> Is a province wide event typically on the last week in May.</p> <p><i>Commuter Challenge.</i> Typically occurs in conjunction with bike to work week or a week before/after. It encourages employees to use all alternative modes including walking, biking, transit and carpooling.</p> <p><i>Car Free Day.</i> A car free day can be held at the Art Gallery when the parking lot will be closed to vehicles and may even have special events and local vendors to encourage alternative modes.</p>	<p><i>Walking School Buses.</i> This can occur regularly when school groups visit the Art Gallery. If they are located within a reasonable distance to the Art Gallery they can walk together instead of a school bus. Examples of schools which could take part in this program include Central Middle School, Victoria High School, Sir James Douglas Elementary, and Margaret Jenkins Elementary.</p>
<ul style="list-style-type: none"> <li>• <i>Challenges.</i> A punch card can be distributed to each employee and every day they use an alternative mode they will get a stamp. After ten stamps they will be given a prize such as a card to a nearby coffee shop.</li> </ul>	

#### 4.5 Summary

Those TDM programs provided above are supplementary programs that the Art Gallery may implement to further encourage alternative modes and create incentives for those modes and disincentives to driving. Although these programs are not a requirement, they are just another way to decrease vehicle demand at the site. *Table 6* provides a summary of these programs including the target, estimated cost and estimated impact in terms of reducing parking and vehicle demand at the site.

TABLE 6. SUMMARY OF SUPPLEMENTARY TDM PROGRAMS

	Target	Cost	Estimated Impact
Transit Passes	Employees	\$\$\$	Large
Guaranteed Ride Home	Employees	\$\$	Medium
Bike Share	Employees	\$\$	Medium
Electric Vehicle Charging Station	Employees, Guests	\$\$	Small
Carpool Program	Employees	\$	Medium
Alternative Scheduling	Employees	\$	Medium
Information	Employees, Guests	\$	Small
Transportation Allowance	Employees	\$\$\$	Large
Commuter Bike Workshop	Employees, Guests	\$	Medium
Event Days	Employees, Guests	\$\$	Medium
Challenges	Employees	\$	Medium

## 5.0 Summary

As part of the Art Gallery of Greater Victoria Renewal Project, transportation demand management programs have been provided to reduce vehicle demand during a typical day and during scheduled programs, for employees and guests. These programs are expected to have the most significant impact on employees, particularly targeting those who are currently driving to and from work.

Additional TDM programs are provided to be implemented during scheduled programs in order to reduce vehicle demand, accommodate alternative modes, and decrease stresses on on-street parking. They include obtaining access to off-street parking lots, opening the secondary parking lot, directing staff to park off-site, providing carpool parking spaces, providing signage, including transit tickets in the scheduled program ticket, providing additional bike parking / valet, hiring a chaperone, and providing alternative mode information. Scheduled programs range in size in terms of amount of people they attract. All TDM programs will need to be implemented four times throughout the year for large scheduled programs, and four programs (open the secondary parking lot, direct staff to park off-site, provide carpool parking spaces and provide information) will need to be implemented during medium scheduled programs.

Supplementary TDM programs are recommended to further decrease parking, which are targeted towards employees and guests. Programs include providing employee transit passes, implementing a guaranteed ride home program, implementing a bike share program, installing an electric vehicle charging station, implementing a carpool program, providing the option for alternative scheduling, providing information and implementing events. Implementation of these supplementary programs will be at the discretion of the Art Gallery.

## 5.1 Recommendations

The following are recommendations in which the Art Gallery should pursue:

- Provide 38 Class 2 bike parking spaces;
- Provide 12 Class 1 bike parking spaces in a bike cage;
- Provide cycling trip-end facilities including two shower/change areas and 14 lockers;
- Install a passenger drop-off on Moss Street;
- Implement the following Parking Management/TDM programs during scheduled programs:
  - Small Scheduled Programs. Open secondary parking lot
  - Medium Scheduled Programs. Open secondary parking lot, direct staff to park off-site, provide carpool parking spaces, provide information
  - Large Scheduled Programs. Obtain off-site parking lots, open secondary parking lot, direct staff to park off-site, provide carpool parking spaces, install signage, provide a one-way transit ticket, install additional bike parking or a bike valet, hire a chaperone and provide information
- Consider implementing the following: provide employee transit passes, implement a guaranteed ride home program, implement a bike share program, provide electric vehicle charging stations, implement a carpool program, provide the option for alternative scheduling, provide information, provide a transportation allowance and implement events.

**Appendix A**  
**SUMMARY OF EMPLOYEE SURVEY**

## Summary of Employee Survey

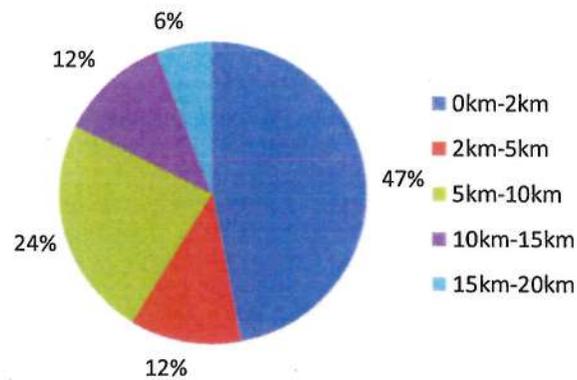
### Transportation Demand Management (TDM) Study | Transportation Review

#### Art Gallery of Greater Victoria Renewal Project

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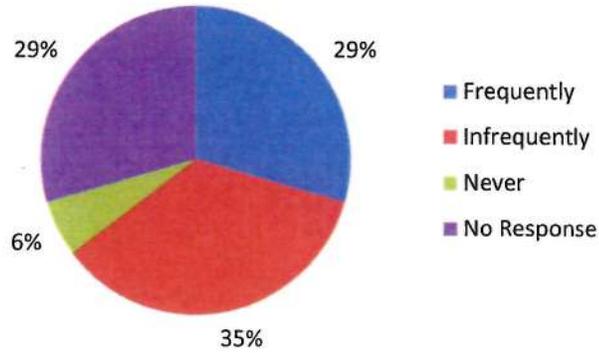
#### Q.1. How far do you live from the Art Gallery?

	Count	Percentage
0km-2km	8	47%
2km-5km	2	12%
5km-10km	4	24%
10km-15km	2	12%
15km-20km	1	6%
<b>Total</b>	<b>17</b>	<b>100%</b>



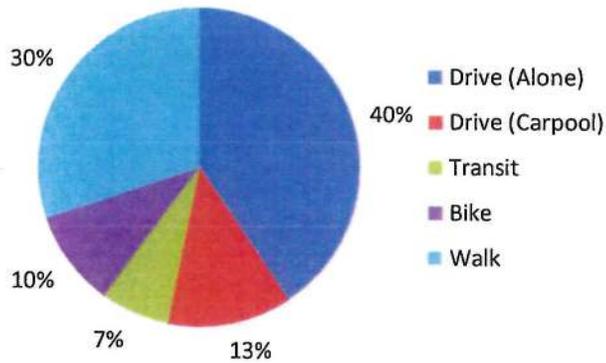
#### Q.2. How often do you need access to a vehicle to perform your job?

	Count	Percentage
Frequently	5	29%
Infrequently	6	35%
Never	1	6%
No response	5	29%
<b>Total</b>	<b>17</b>	<b>100%</b>

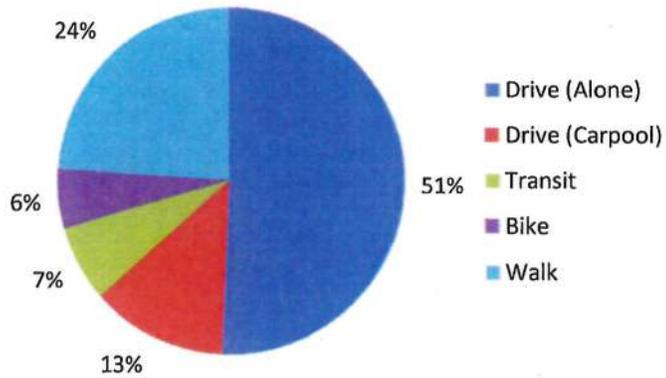


Q.3. Approximately how many days per week do you travel to the Art Gallery using each travel mode  
 Summer

	0 days	1 day	2 days	3 days	4 days	5 days
Drive (Alone)	6 people	4 people	3 people	0 people	1 people	3 people
Drive (Carpool)	14 people	1 people	0 people	1 people	0 people	1 people
Transit	14 people	2 people	0 people	1 people	0 people	0 people
Bike	14 people	1 people	0 people	1 people	0 people	0 people
Walk	10 people	0 people	4 people	0 people	1 people	2 people
Other	0 people	0 people	0 people	0 people	0 people	0 people







Q.4. What is preventing you from walking, cycling, using transit or carpooling more often?

	Count	Percentage
Lack of shower facilities	4	15%
Distance	4	15%
Taking kids to school	4	15%
Lack of change room facilities	2	8%
Lack of personal/bike lockers	2	8%
Time	2	8%
Require a vehicle at work	2	8%
Unorganized	2	8%
Weather	2	8%
Transit is unreliable	2	8%

Q.5. What could the Art Gallery do to encourage you to walk, bike, use transit or carpool more often?

	Count	Percentage
Install personal / bike lockers	6	30%
Provide discounted transit passes	5	25%
Install showers	4	20%
Install change rooms	3	15%
Arrange for carpools	1	5%
Coordinate with BC Transit to alter routes	1	5%

**Appendix B**  
**SUMMARY OF SCHEDULED PROGRAMS**

Summary of Scheduled Programs from January-December 2014  
 Transportation Demand Management (TDM) Study I Transportation Review  
 Art Gallery of Greater Victoria Renewal Project

	January	February	March	April	May	June	July	August	September	October	November	December
Major Events			Urbanite	Fairfield Gonzales Gala		Urbanite					Urbanite	
Programs/Commissioned	Opening Reception			Opening Reception Exhibit Opening	Children's Exhibit Opening Summer Season Opening				Exhibit Opening Fall Season Opening			
Meetings		Gallery Associates Meeting	Gallery Associates Meeting	Associates General Meeting	Associates General Meeting	Associates Annual General Meeting Annual General Meeting						
Performances	Concert Lecture x2	Concert x2 Lecture	Concert Lecture	Concert Lecture	Lecture x2		Screening Lecture		Screening x3 Lecture x2	Lecture		
Tours	Drop-in Tour	Drop-in Tour x9 Curators Tour	Drop-in Tour x12 Curators Tour	Drop-in Tour x8	Drop-in Tour x12 Curators Tour	Drop-in Tour x11	Drop-in Tour x9 Curators Tour x2	Drop-in Tour x13	Drop-in Tour x8 Art Interest Tour x2	Drop-in Tour x10 Curators Tour x2 Art Interest Tour x2	Drop-in Tour x12	Drop-in Tour x5 Curators Tour
Drop-in Programs			Art Show Reception x2			Book launch		Slow Fashion Week x3			Animation Workshops x2	Print making Workshop

	Scheduled Program Size		Scheduled Program Frequency	
			Per month (Average)	Per year (Total)
Small Scheduled Programs	0-50 people	14	163	
Medium Scheduled Programs	50-200 people	2	23	
Large Scheduled Programs	201 or more people		4	

Scheduled Programs occur approximately 190 times throughout the year

Description of Scheduled Programs from January-December 2014  
 Transportation Demand Management (TDM) Study | Transportation Review  
 Art Gallery of Greater Victoria Renewal Project

Event Name	Size	Event Frequency (per year)	During/After Opening Hours	Description
Drop-in Tour	Small	110	During	Offer visitors a chance to learn more about current exhibits; included in the price of admissions. These happen several times a week
Curators Tour	Small	8	During	Professional curator guides the tour, included in admission
Art Interest Tour	Small	20	During	This is a discussion based tour and included in the price of admission
Concert	Small	5	During	A group of musicians come to the Art Gallery and perform music. Tickets can be up to \$35
Screening	Small	4	During	When the Art Gallery showcases a film
Lecture	Small	11	During	A special guest comes and provides a lecture about the arts
Family Sunday	Medium	6	During	Children and guardians are welcome to the gallery for arts and crafts and film screenings. This is included in the price of admission
Urbanite	Large	3	After	Is an adult event with liquor, exhibition tours, local music and hands on activities. This event occurs three times over the year
Fairfield Gonzales Gala	Large	1	After	A gala which includes music, wine tasting, food and an auction.
Opening Reception	Medium	2	During/After	Members have the opportunity to speak with the curator and then it is open to the public.
Exhibit Opening	Medium	2	During	New exhibit is showcased and open to the members and public for a designated amount of time
Children's Exhibit Opening	Medium	1	During	New children's exhibit is showcased and open to the members and public for a designated amount of time
Summer/Fall Season Opening	Medium	2	After	Typically occurs coinciding with an exhibit opening. There is a private members preview before it is open to the public
Gallery Associates Meeting	Small	2	During	A meeting which is open to anyone who is interested in joining the association
Associates General Meeting	Small	2	During	A meeting which is open to anyone who is interested in joining the association
Associates Annual General Meeting	Small	1	During	A meeting for members of the association to discuss the past years activities, reports
Annual General Meeting	Medium	1	After	A meeting for everyone to present the years previous activities, fiscal reports and election of members for the board of directors for the next year.
Art Show Reception	Medium	2	During	Art is showcased and for sale for a specific artist.
Book Launch	Medium	1	During	The launch of a new book by an author. Refreshments are provided
Slow Fashion Week	Medium	3	During	Various artists present their work at multiple venues. This is included in the price of admission
Animation Workshops	Medium	2	During	Free with admission, guests will participate in creating a series of animated abstract films. Space is limited
Print Making Workshops	Medium	1	During	An introduction course to printmaking processes. Included in the price of admission

Scheduled Program Size		Scheduled Program Frequency (per year)
Small Scheduled Programs	0-50 people	163
Medium Scheduled Programs	50-200 people	23
Large Scheduled Programs	201 or more people	4

Scheduled Programs occur approximately 190 times throughout the year



**ART GALLERY OF GREATER VICTORIA  
RENEWAL PROJECT**

**Transportation Review  
TRAFFIC IMPACT ASSESSMENT**

Prepared for: **Art Gallery of Greater Victoria**

Prepared by: **Boulevard Transportation, a division of Watt Consulting Group**

Our File: **1767**

Date: **January 29 2015**

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## CONTENTS

<b>1.0</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Proposed Development .....	1
<b>2.0</b>	<b>Existing Conditions .....</b>	<b>2</b>
2.1	Transportation Network .....	2
2.2	Traffic Volumes .....	2
2.3	Traffic Operations .....	3
	2.3.1 Traffic Modelling – Background Information .....	3
	2.3.2 Traffic Analysis Results .....	4
<b>3.0</b>	<b>Post Renewal .....</b>	<b>4</b>
3.1	Trip Generation .....	4
3.2	Trip Assignment .....	5
3.3	Traffic Analysis .....	5
3.4	Sensitivity Analysis .....	6
3.5	Off-Site Improvements .....	6
	3.5.1 Driveway Access .....	6
	3.5.2 Curb Extensions .....	6
	3.5.3 On-Street Parking .....	7
	3.5.4 Sidewalk/Boulevards .....	7
<b>4.0</b>	<b>SCHEDULED PROGRAMS .....</b>	<b>7</b>
<b>5.0</b>	<b>Conclusions.....</b>	<b>8</b>
 <b>Appendix A Synchro Background and Reports.....</b>		<b>9</b>
<b>Appendix B Summary of Scheduled Programs.....</b>		<b>10</b>

## 1.0 INTRODUCTION

Boulevard Transportation, a division of Watt Consulting Group, was retained by CitySpaces Consulting Ltd. to review the traffic impacts of the Art Gallery of Greater Victoria (AGGV) Renewal Project. The review consists of three studies each under separate cover, as follows:

1. Parking Study;
2. Traffic Impact Assessment; and
3. Transportation Demand Management (TDM) Strategy.

The following is the AGGV Traffic Impact Assessment. The purpose of this study is to review the existing and future driveway conditions, traffic conditions along the site frontages, and at the Fort Street/Moss Street intersection.

### 1.1 Proposed Development

The Art Gallery Renewal Project is a proposal for an approximately 30% increase in gross floor area from the existing 39,331 sq. ft. to 51,375 sq. ft.<sup>1</sup>. See *Table 1* for details on the breakdown of the existing and proposed land use on site. The proposal also includes a rezoning to a site-specific zone that allows up to 55,240 sq. ft. of floor area, which represents a 7.5% increase from the proposed building expansion. The focus of this study is on the building expansion and not the rezoning.

**TABLE 1. SUMMARY OF PROPOSED EXPANSION FLOOR AREA (SQ.FT.)**

	Existing	Proposed	Change
Administration	8,380	8,741	+ 361
Collections	10,218	12,313	+ 2,095
Galleries	13,143	18,260	+ 5,117
Public	5,426	9,640	+ 4,214
Services	2,164	2,421	+ 257
<b>Total</b>	<b>39,331</b>	<b>51,375</b>	<b>+ 12,044</b>

<sup>1</sup> Proposed floor area includes 1,702 sq. ft. identified as "future additions" on building plans

## 2.0 EXISTING CONDITIONS

### 2.1 Transportation Network

The AGGV is located on Moss Street in the City of Victoria, but also has frontages on Wils Spencer Place and Pentrelew Place. There is no vehicle or pedestrian access between the AGGV and Pentrelew Place (grade separation and fencing). The entry driveway to the AGGV is located on Moss Street approximately 25m from Wils Spencer Place. The exit driveway for the AGGV is located on Wils Spencer Place approximately 30m from Moss Street.

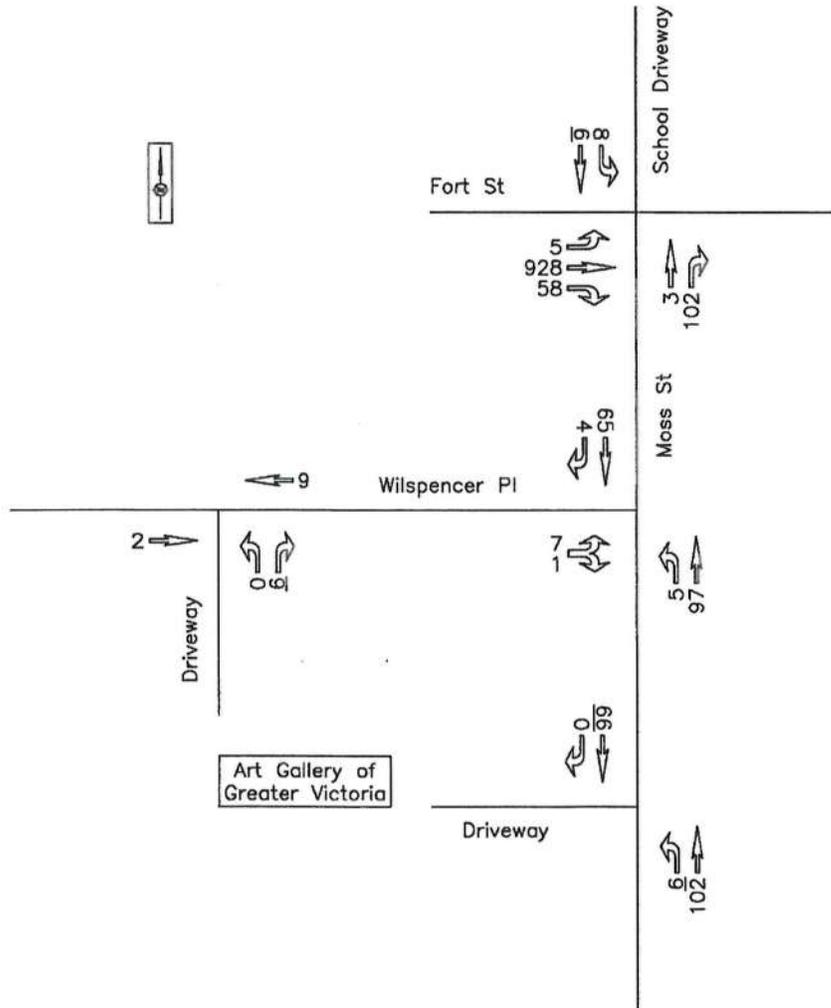
Moss Street is classified as a secondary collector road and Wils Spencer Place is classified as a local road. Moss Street has parking on the west side (adjacent to the AGGV) and sidewalks on both sides of the roadway. Wils Spencer Place has on-street parking and sidewalks on both sides of the road. Moss Street is also a proposed future bicycle network route (to be completed) and a People Priority Greenway. The nearest bus routes are located on Fort Street (within 400m).

Wils Spencer Place has an asphalt width of approximately 8.3m and a road right-of-way of approximately 11m. Moss Street has an asphalt width of approximately 9.75m and a right-of-way width of approximately 18.30m.

### 2.2 Traffic Volumes

Manual intersection counts were undertaken from 4:30pm to 5:30pm on Tuesday December 9, 2014 by Boulevard Transportation staff at the intersections of Fort Street/Moss Street, Wils Spencer Place/Moss Street, Wils Spencer Place/AGGV Exit, and Moss Street/AGGV Entry. See *Figure 1*.

FIGURE 1. EXISTING PM PEAK HOUR TRAFFIC VOLUMES



## 2.3 Traffic Operations

### 2.3.1 Traffic Modelling – Background Information

Analysis of the traffic conditions at the intersections within the study area were undertaken using Synchro software. The Synchro results were also reviewed using the microsimulation portion of the software (SimTraffic).

Synchro / SimTraffic is a two-part traffic modelling software that provides analysis of traffic conditions based on traffic control, geometry, volumes and traffic operations. Synchro software

(Synchro 8) is used because of its ability to provide analysis using the Highway Capacity Manual (2010) methodology, while SimTraffic integrates established driver behaviours and characteristics to simulate actual conditions by randomly “seeding” or positioning vehicles travelling throughout the network. Synchro uses measures of effectiveness to return the results of the analysis. These measures of effectiveness include level of service (LOS), delay and 95<sup>th</sup> percentile queue length. The delays and type of traffic control are used to determine the level of service. The level of services are broken down into six letter grades with LOS A being excellent operations and LOS F being unstable/failure operations. Level of service C is generally considered to be an acceptable LOS by most municipalities. Level of service D is generally considered to be on the threshold between acceptable and unacceptable operations.

### 2.3.2 Traffic Analysis Results

The existing traffic volumes and lane geometrics were entered into Synchro to determine the existing traffic conditions during the PM peak hour. The AGGV driveway and the intersection of Wils Spencer Place/Moss Street are operating at a LOS A. At the intersection of Moss Street/Fort Street the eastbound movement on Fort Street is operating at a LOS A, while the northbound movements from Moss Street are operating at a LOS C and the southbound movements (school driveway) are at LOS D (based on HCM 2000).

## 3.0 POST RENEWAL

### 3.1 Trip Generation

The existing AGGV is generating traffic at a rate of 0.31 trips per 1,000 sq. ft., which is higher than ITE’s museum trip generation rate (closest similar land use type) of 0.18 trips per 1,000 sq. ft. Therefore the site specific trip generation rate will be used as a worst case scenario to project the future trips for the site rather than using the ITE rates. See *Table 2*.

TABLE 2. PM PEAK HOUR TRIP GENERATION FOR PROPOSED AGGV

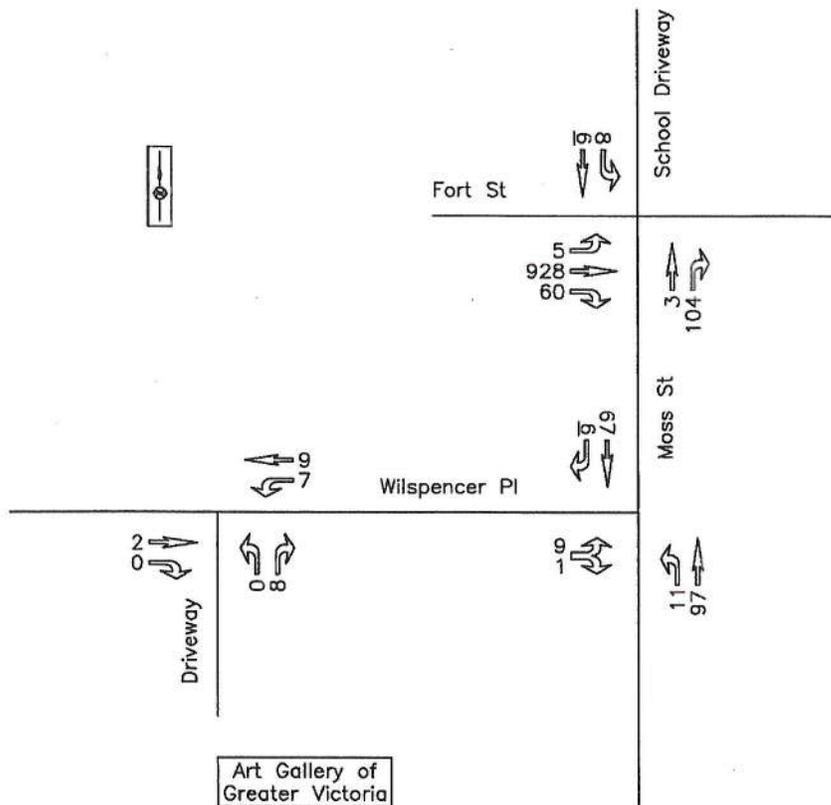
Land Use	Sq. Ft.	Trip Rate	Total Trips	Trips IN	Trips OUT
Art Gallery	51,375	0.31 trips/1000 sq. ft.	16 trips	8 trips	8 trips

The added square footage to the AGGV increases the number of trips to/from the site by four per hour in the PM peak hour.

### 3.2 Trip Assignment

Trips were assigned to the network based on all new trips entering/exiting to/from Fort Street. Figure 2 shows the post renewal traffic volumes.

FIGURE 2. POST RENEWAL PM PEAK HOUR TRAFFIC VOLUMES



### 3.3 Traffic Analysis

The proposed traffic volumes and lane geometrics were entered into Synchro to determine the proposed traffic conditions during the PM peak hour. The AGGV driveway and the intersection of Wils Spencer Place/Moss Street were found to operate at a LOS A. At the intersection of Moss Street/Fort Street the eastbound movement on Fort Street will operate at a LOS A, while the northbound movements from Moss Street will operate at a LOS C and the southbound movements (school driveway) will operate at LOS D (based on HCM 2000).

### 3.4 Sensitivity Analysis

The AGGV driveway on Wils Spencer Place was further analyzed to determine the functionality during extreme circumstances. The current proposed number of vehicles entering and leaving the site during the PM peak hour was multiplied by three, which represents the parking lot capacity entering and exiting the site within a one hour period. At a 300% increase in traffic volumes at the AGGV driveway there is no change in LOS. The AGGV driveway traffic could increase by 1000% and continue to operate at acceptable conditions; however, this is an unlikely condition due to the size of the parking lot.

### 3.5 Off-Site Improvements

#### 3.5.1 Driveway Access

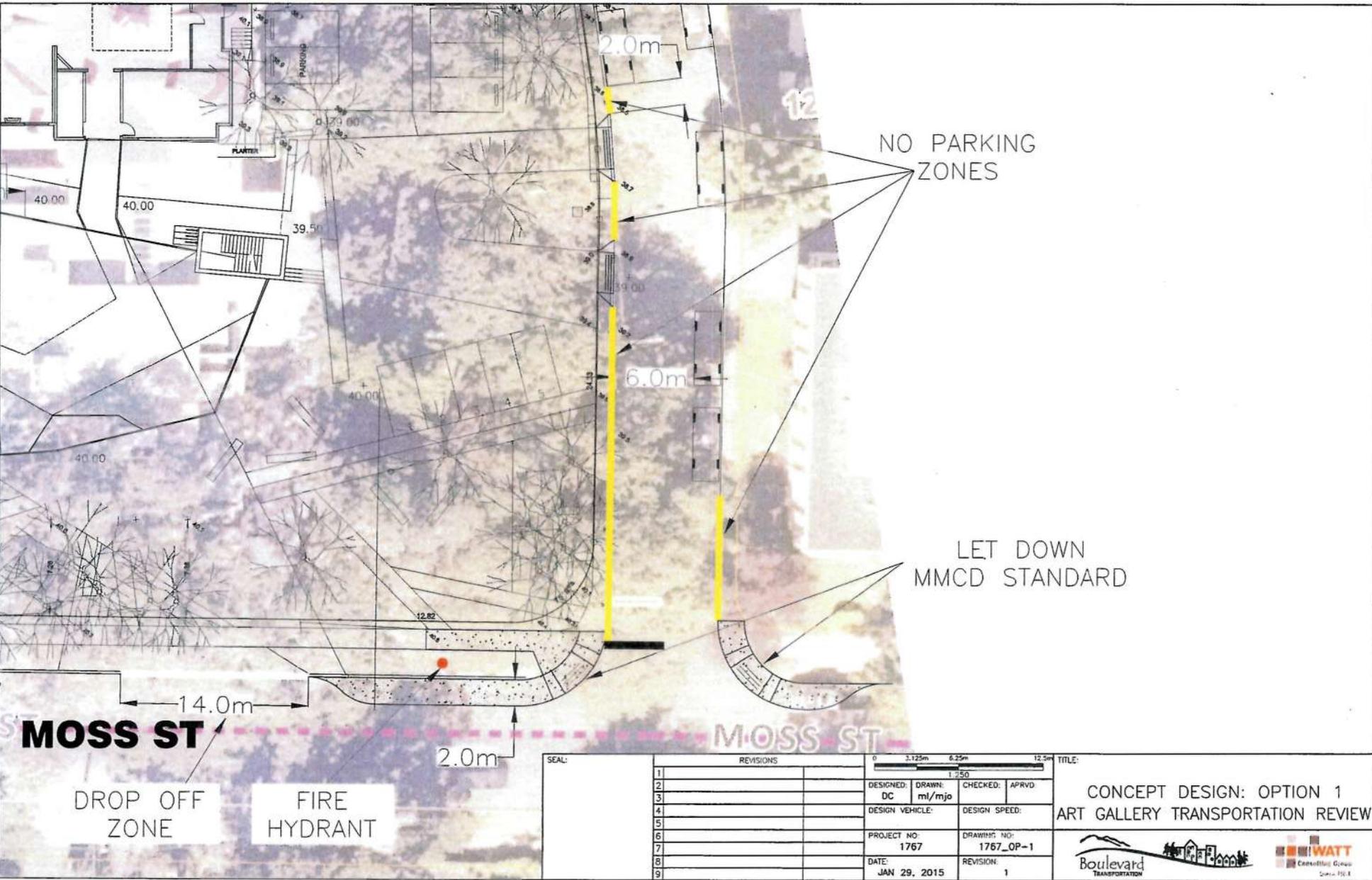
The AGGV is proposing to utilize the Wils Spencer driveway as the sole access to the site. The access will consist of an entry driveway and a separate exit driveway (loop driveway). This consolidates the AGGV driveways onto Wils Spencer Place and onto the local road as per the City of Victoria's "Highway Access Bylaw."

Fire truck access will be via the exit driveway. Fire trucks will reverse out of the site. During detail design the driveway design will need to ensure that the fire truck can be accommodated without impacting trees, landscaping or any art installations. See attached figure for the proposed off-site improvements.

#### 3.5.2 Curb Extensions

Curb extensions are proposed at the Moss Street / Wils Spencer Place intersection to improve visibility and move the stop bar further towards Moss Street. The relocation of the stop line improves the sight distance for vehicles exiting Wils Spencer Place. The curb extensions will encourage parking and pick-up/drop-off activities on Moss Street at appropriate distances from the intersection, which further improves sight distance for exiting vehicles at Wils Spencer Place. The proposed improvements will result in the loss of three on-street parking stalls on Moss Street, but will improve the overall safety of the intersection. The curb extensions are designed to extend two metres from the existing curb on Moss Street. The two metre curb extension is consistent with the width of the parking and maintains the existing road width. If at a future time Moss Street is upgraded to a bikeway the curb extension can be adjusted as needed; however, unless existing on-street parking is removed it is unlikely bike lanes or 4.3 metre wide shared lanes will be accommodated on Moss Street and need to remove the curb extensions. Moss Street could become a bike boulevard road where sharrows are used to delineate bicycle usage on the road. This option would maintain the parking and curb extension and possibly allow for widening of curb extension. All future works regarding the bikeway and curb extension are at the discretion of the City of Victoria.

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 PLOTTED BY: mchase



**MOSS ST**

DROP OFF ZONE

FIRE HYDRANT

NO PARKING ZONES

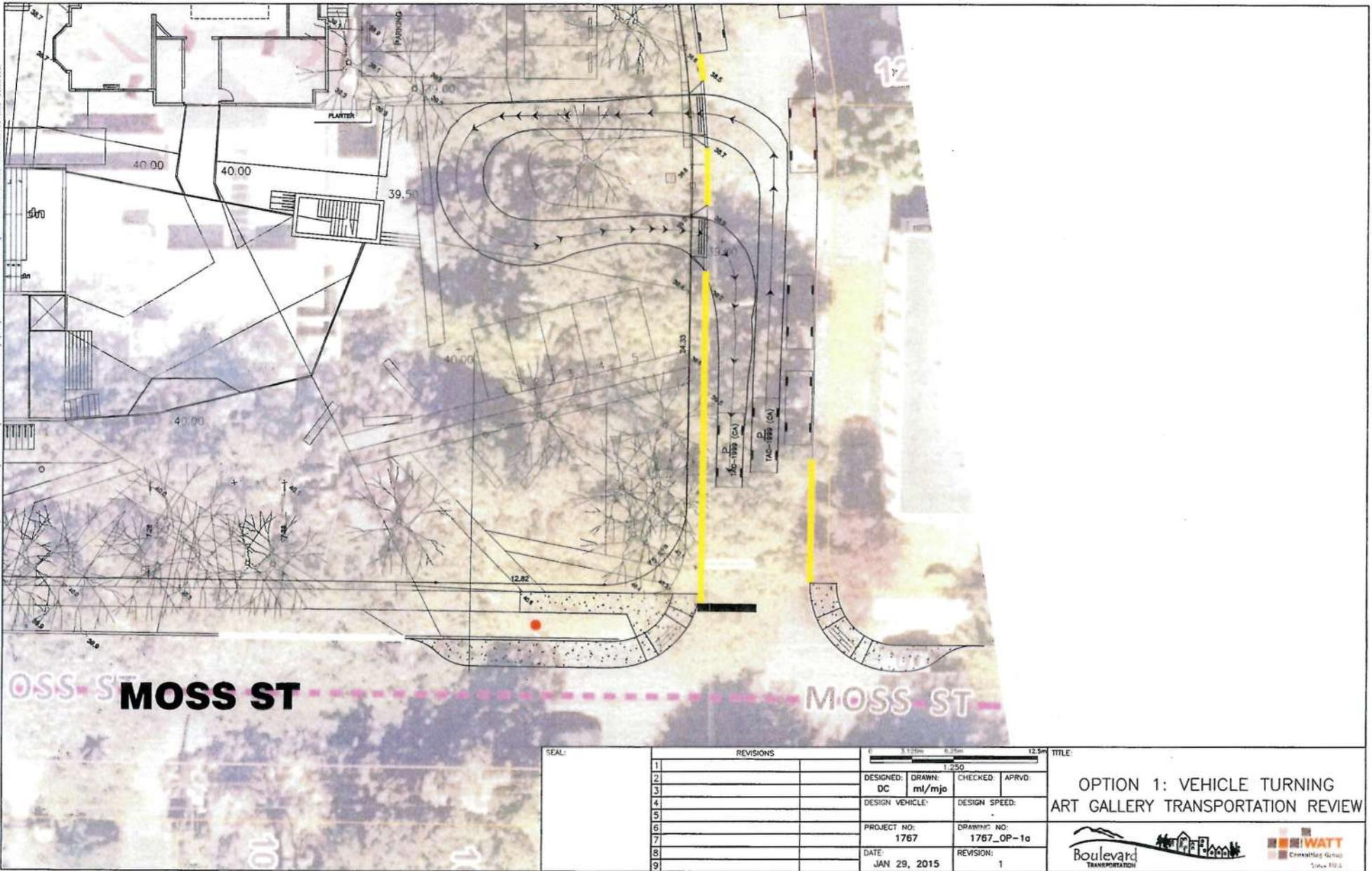
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3		PROJECT NO:		DRAWING NO:							
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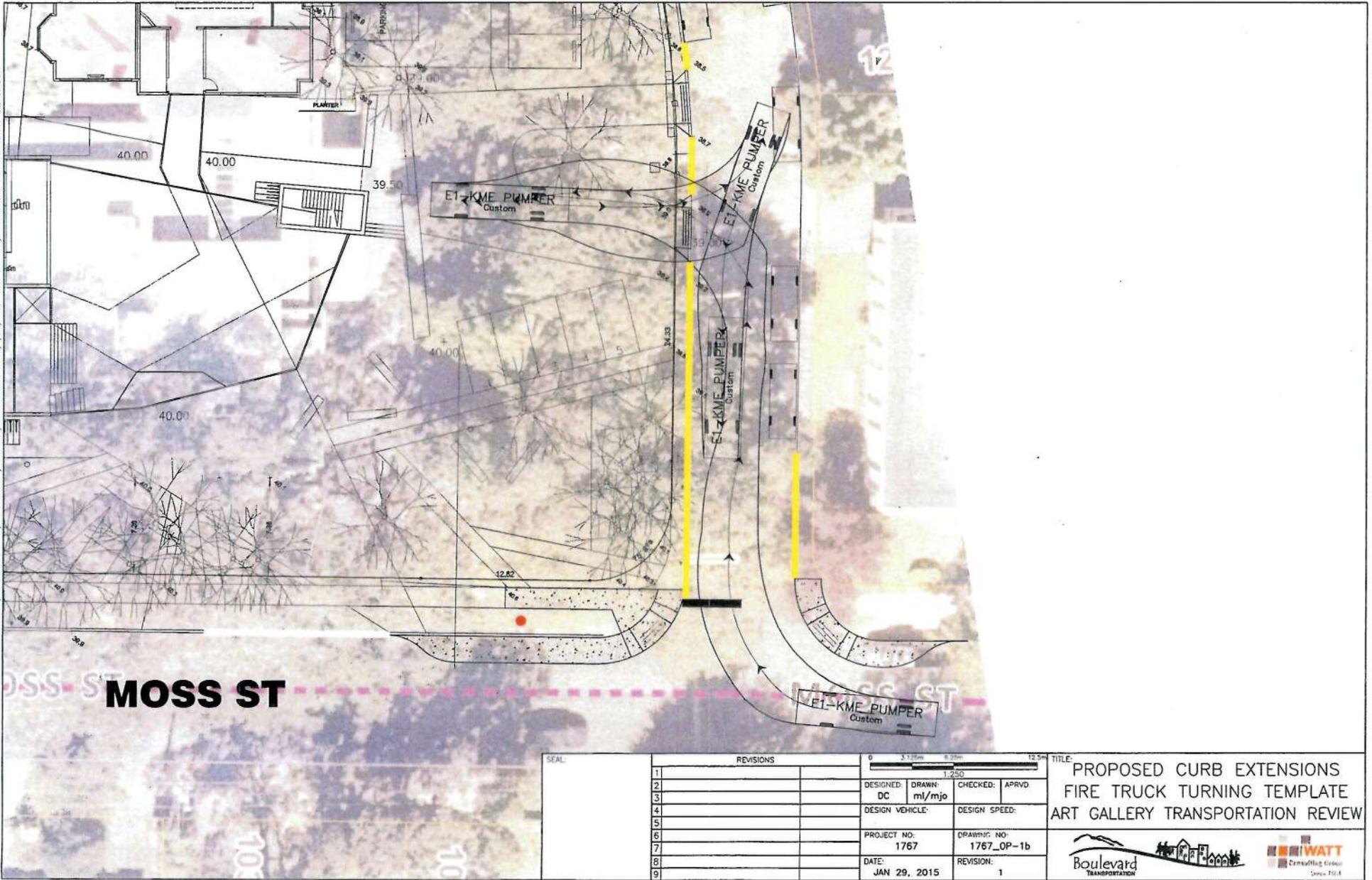
TITLE: **OPTION 1: VEHICLE TURNING**  
**ART GALLERY TRANSPORTATION REVIEW**




Scale: 1/8" = 1'-0"

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**MOSS ST**

**ART GALLERY ST**

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DATE: JAN 29, 2015		REVISION: 1	

TITLE: PROPOSED CURB EXTENSIONS  
 FIRE TRUCK TURNING TEMPLATE  
 ART GALLERY TRANSPORTATION REVIEW

### 3.5.3 On-Street Parking

A no-parking zone is proposed along the south side of Wilsperner Place from Moss Street to 2m west of driveway. This on-street parking restriction will increase the asphalt width on Wilsperner Place and allow for improved entry and exit from the Wilsperner Place driveway. On-street parking is also proposed to be restricted on the north side of Wilsperner Place for one vehicle length at Moss Street to improve access and reduce conflicts at Wilsperner Place/Moss Street.

### 3.5.4 Sidewalk/Boulevards

The proposed curb extensions will increase the visibility of pedestrians at the intersection of Moss Street/Wilsperner Place.

## 4.0 SCHEDULED PROGRAMS

In addition to a typical day, the AGGV holds scheduled programs. The majority of the Art Gallery's scheduled programs occur during regular operating hours and attract less than fifty guests. These programs occur approximately 14 times each month, with the most frequent being Drop-In Tours. The largest scheduled programs are "Urbanite" and the "Fairfield-Gonzales Gala", which occurred four times total during 2014 and attract no more than 400 people. These large events occur in the evenings, outside of peak traffic periods on the adjacent road network.

A summary of scheduled programs from 2014 is provided in *Table 3* and a more detailed description in *Appendix B* which gives an indication of the size and frequency of scheduled programs at the Art Gallery.

TABLE 3. SUMMARY OF SCHEDULED PROGRAMS, 2014

	Frequency	
	Annual	Per Month (average)
<b>Small Programs</b> (typically less than 50 guests)	163	14
<b>Medium Programs</b> (typically 50 to 200 guests)	23	2
<b>Large Programs</b> (typically 200 to 400 guests)	4	0.3

## 5.0 CONCLUSIONS

The Art Gallery Renewal Project proposes a 30 percent increase in gross floor area. This increase in floor space will generate an additional four trips per PM peak hour. The existing intersections surrounding the AGGV operate at a good LOS and the increase in traffic due to the Art Gallery Renewal does not change the LOS or impact traffic around the AGGV. In 2014 there were 14 small scheduled programs and two medium scheduled programs at the AGGV per month. These small and medium scheduled programs are typically during the regular operating hours of the Art Gallery and don't significantly impact traffic during the PM peak hour. The large programs occur four times per year and occur in the evenings, outside of the PM peak hour.

The AGGV entrance is proposed to be relocated to Wils Spencer Place to consolidate the driveway access to the site. On-street parking along the south of Wils Spencer Place is proposed to increase the available width of asphalt for drivers to enter and exit the site. The restriction of on-street parking also eliminates vehicles parking up to the stop bar and reducing the width of Wils Spencer Place at Moss Street. Curb extensions are proposed to move the stop bar closer to Moss Street and increasing drivers' ability to see approaching vehicles. The curb extensions will also restrict on-street parking and pick-up/drop-off on Moss Street that can also impact Wils Spencer Place motorists' sight lines. The curb extensions also have the benefit of increasing pedestrian visibility.

## Appendix A SYNCHRO BACKGROUND AND REPORTS

### HCM Unsignalized Intersection Capacity Analysis 3: Moss Street/School D/W & Fort Street

2015-01-14

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	928	58	0	0	0	0	3	102	8	6	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.92	0.97	0.92	0.92	0.92	0.92	0.75	0.77	0.50	0.50	0.92
Hourly flow rate (vph)	8	1009	60	0	0	0	0	4	132	16	12	0
Pedestrians					41			64			25	
Lane Width (m)					0.0			3.6			3.6	
Walking Speed (m/s)					1.2			1.2			1.2	
Percent Blockage					0			5			2	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	25			1132			1124	1143	639	721	1173	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			1132			1124	1143	639	721	1173	25
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	67	92	93	100
cM capacity (veh/h)	1569			580			135	186	401	193	179	1023
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	512	564	136	28								
Volume Left	8	0	0	16								
Volume Right	0	60	132	0								
cSH	1569	1700	388	187								
Volume to Capacity	0.01	0.33	0.35	0.15								
Queue Length 95th (m)	0.1	0.0	12.4	4.1								
Control Delay (s)	0.2	0.0	19.2	27.7								
Lane LOS	A		C	D								
Approach Delay (s)	0.1		19.2	27.7								
Approach LOS			C	D								
<b>Intersection Summary</b>												
Average Delay			2.8									
Intersection Capacity Utilization			47.0%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis

## 7: Moss Street & Wilspercer

2015-01-14

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	1	5	97	65	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.25	0.63	0.76	0.86	0.33
Hourly flow rate (vph)	12	4	8	128	76	12
Pedestrians	14				1	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	240	96	102			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	240	96	102			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	99			
cM capacity (veh/h)	739	955	1486			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	16	136	88			
Volume Left	12	8	0			
Volume Right	4	0	12			
cSH	783	1486	1700			
Volume to Capacity	0.02	0.01	0.05			
Queue Length 95th (m)	0.5	0.1	0.0			
Control Delay (s)	9.7	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.7	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			19.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 8: Moss Street & Gallery Entrance

2015-01-14

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	6	102	66	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.76	0.86	0.92
Hourly flow rate (vph)	0	0	12	134	77	0
Pedestrians	14					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	249	91	91			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249	91	91			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	734	967	1504			
Direction, Lane #	NB 1	SB 1				
Volume Total	146	77				
Volume Left	12	0				
Volume Right	0	0				
cSH	1504	1700				
Volume to Capacity	0.01	0.05				
Queue Length 95th (m)	0.2	0.0				
Control Delay (s)	0.7	0.0				
Lane LOS	A					
Approach Delay (s)	0.7	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			13.6%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 11: Gallery Exit & Wilspencer

2015-01-14

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	
Volume (veh/h)	2	0	0	9	0	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	10	0	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			2		12	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2		12	2
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1620		1008	1082
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	2	10	7			
Volume Left	0	0	0			
Volume Right	0	0	7			
cSH	1700	1700	1082			
Volume to Capacity	0.00	0.01	0.01			
Queue Length 95th (m)	0.0	0.0	0.1			
Control Delay (s)	0.0	0.0	8.3			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.3			
Approach LOS			A			
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

### HCM Unsignalized Intersection Capacity Analysis 3: Moss Street/School D/W & Fort Street

2015-01-14

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	928	60	0	0	0	0	3	104	8	6	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.92	0.97	0.92	0.92	0.92	0.92	0.75	0.77	0.50	0.50	0.92
Hourly flow rate (vph)	8	1009	62	0	0	0	0	4	135	16	12	0
Pedestrians					41			64			25	
Lane Width (m)					0.0			3.6			3.6	
Walking Speed (m/s)					1.2			1.2			1.2	
Percent Blockage					0			5			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	25			1135			1125	1144	640	723	1175	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			1135			1125	1144	640	723	1175	25
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	66	92	93	100
cM capacity (veh/h)	1569			579			135	186	400	191	178	1023
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	512	566	139	28								
Volume Left	8	0	0	16								
Volume Right	0	62	135	0								
cSH	1569	1700	387	185								
Volume to Capacity	0.01	0.33	0.36	0.15								
Queue Length 95th (m)	0.1	0.0	12.8	4.2								
Control Delay (s)	0.2	0.0	19.4	27.9								
Lane LOS	A		C	D								
Approach Delay (s)	0.1		19.4	27.9								
Approach LOS			C	D								
<b>Intersection Summary</b>												
Average Delay			2.9									
Intersection Capacity Utilization			47.1%	ICU Level of Service		A						
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis

## 7: Moss Street & Wilspercer

2015-01-14

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	1	11	97	67	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.25	0.63	0.76	0.86	0.33
Hourly flow rate (vph)	16	4	17	128	78	18
Pedestrians	14				1	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	265	101	110			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265	101	110			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	99			
cM capacity (veh/h)	711	949	1475			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	145	96			
Volume Left	16	17	0			
Volume Right	4	0	18			
cSH	750	1475	1700			
Volume to Capacity	0.03	0.01	0.06			
Queue Length 95th (m)	0.6	0.3	0.0			
Control Delay (s)	9.9	1.0	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.9	1.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			22.4%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 11: Gallery Exit & Wilspencer

2015-01-14

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘			↖	↗	
Volume (veh/h)	2	0	7	9	0	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	8	10	0	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			2		27	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2		27	2
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1620		983	1082
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	2	17	9			
Volume Left	0	8	0			
Volume Right	0	0	9			
cSH	1700	1620	1082			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.1	0.2			
Control Delay (s)	0.0	3.2	8.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.2	8.4			
Approach LOS			A			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			16.7%	ICU Level of Service		A
Analysis Period (min)			15			

**Appendix B**  
**SUMMARY OF SCHEDULED PROGRAMS**

Summary of Scheduled Programs from January-December 2014

Traffic Impact Assessment | Transportation Review

Art Gallery of Greater Victoria Renewal Project

	January	February	March	April	May	June	July	August	September	October	November	December
Month Events			Urbanite			Urbanite					Urbanite	
Program Contributions	Opening Reception			Opening Reception Exhibit Opening	Children's Exhibit Opening Summer Season Opening				Exhibit Opening Fall Season Opening			
Meetings		Gallery Associates Meeting	Gallery Associates Meeting		Associates General Meeting	Associates General Meeting						
Other Programs	Concert Lecture x2	Concert x2 Lecture	Concert Lecture	Concert Lecture	Lecture x2		Screening Lecture		Screening x3 Lecture x2	Lecture		
Tours	Drop-in Tour	Drop-in Tour x9 Curators Tour	Drop-in Tour x12 Curators Tour	Drop-in Tour x8 Art Interest Tour x4	Drop-in Tour x12 Curators Tour	Drop-in Tour x11 Art Interest Tour x2	Drop-in Tour x9 Curators Tour x2	Drop-in Tour x13	Drop-in Tour x8 Art Interest Tour x2	Drop-in Tour x10 Curators Tour x2 Art Interest Tour x2	Drop-in Tour x12	Drop-in Tour x5 Curators Tour
Other Events			Art Show Reception x2			Book launch		Slow Fashion Week x3			Animation Workshops x2	Print making Workshop

	Scheduled Program Size		Scheduled Program Frequency	
			Per month (Average)	Per year (Total)
Small Scheduled Programs	0-50 people		14	163
Medium Scheduled Programs	50-200 people		2	23
Large Scheduled Programs	201 or more people			4

Scheduled Programs occur approximately 190 times throughout the year

## Description of Scheduled Programs from January-December 2014

### Traffic Impact Assessment | Transportation Review

#### Art Gallery of Greater Victoria Renewal Project

Event Name	Size	Event Frequency (per year)	During/After Opening Hours	Description
Drop-in Tour	Small	110	During	Offer visitors a chance to learn more about current exhibits; included in the price of admissions. These happen several times a week
Curators Tour	Small	8	During	Professional curator guides the tour, included in admission
Art Interest Tour	Small	20	During	This is a discussion based tour and included in the price of admission
Concert	Small	5	During	A group of musicians come to the Art Gallery and perform music. Tickets can be up to \$35
Screening	Small	4	During	When the Art Gallery showcases a film
Lecture	Small	11	During	A special guest comes and provides a lecture about the arts
Family Sunday	Medium	6	During	Children and guardians are welcome to the gallery for arts and crafts and film screenings. This is included in the price of admission
Urbanite	Large	3	After	Is an adult event with liquor, exhibition tours, local music and hands on activities. This event occurs three times over the year
Fairfield Gonzales Gala	Large	1	After	A gala which includes music, wine tasting, food and an auction.
Opening Reception	Medium	2	During/After	Members have the opportunity to speak with the curator and then it is open to the public.
Exhibit Opening	Medium	2	During	New exhibit is showcased and open to the members and public for a designated amount of time
Children's Exhibit Opening	Medium	1	During	New children's exhibit is showcased and open to the members and public for a designated amount of time
Summer/Fall Season Opening	Medium	2	After	Typically occurs coinciding with an exhibit opening. There is a private members preview before it is open to the public
Gallery Associates Meeting	Small	2	During	A meeting which is open to anyone who is interested in joining the association
Associates General Meeting	Small	2	During	A meeting which is open to anyone who is interested in joining the association
Associates Annual General Meeting	Small	1	During	A meeting for members of the association to discuss the past years activities, reports
Annual General Meeting	Medium	1	After	A meeting for everyone to present the years previous activities, fiscal reports and election of members for the board of directors for the next year.
Art Show Reception	Medium	2	During	Art is showcased and for sale for a specific artist.
Book Launch	Medium	1	During	The launch of a new book by an author. Refreshments are provided
Slow Fashion Week	Medium	3	During	Various artists present their work at multiple venues. This is included in the price of admission
Animation Workshops	Medium	2	During	Free with admission, guests will participate in creating a series of animated abstract films. Space is limited
Print Making Workshops	Medium	1	During	An introduction course to printmaking processes. Included in the price of admission

Scheduled Program Size		Scheduled Program Frequency (per year)
Small Scheduled Programs	0-50 people	163
Medium Scheduled Programs	50-200 people	23
Large Scheduled Programs	201 or more people	4

Scheduled Programs occur approximately 190 times throughout the year