

# Attachment: Victoria Regional Transit System Fall 2016 service Performance Report

## Introduction

This report presents the ridership performance review for the Victoria Regional Transit System, at the system and route level, over the period of September 4, 2016 to January 1, 2017 against the performance design guidelines developed through the service review process.

## Performance Guidelines

**What they are and what they define:** Performance Guidelines define numerical thresholds and targets for a particular system and its routes and services.

**Why they matter:** Working in tandem with Service Design Standards, Performance Guidelines are tools that evaluate existing services, identify trends in performance and, based on this evidence, determine how service and supporting features (fares, marketing, facilities, etc.) should be adjusted to improve the effectiveness and efficiency of the system to optimize resources.

For a service to be efficient and productive, a balance should be achieved between oversupply and overcrowding. A number of measures can establish this equilibrium such as:

- Implement transit priority
- Alter frequency
- Reduce/increase coverage
- Targeted marketing/corridor branding
- Change service span
- Change bus stop spacing
- Bus route changes
- Vehicle type allocation



When performance falls below the set guidelines, recommendations to the Commission will focus on the utilization of the above tools to maximize efficiency.

## Performance Measures

Performance measures have been chosen that evaluate the effectiveness of service planning investments on a system and route level.

### System level

The measures used for the system guidelines are:

- **Average boardings per revenue hour** - total volume of ridership as compared to the supply of transit service
- **Cost per passenger trip** – average cost to provide service per passenger trip
- **Cost recovery** – financial performance of the transit system usually expressed in terms of total operating revenue/total operating expenses
- **Passengers trips per capita** – ratio between transit trips and the population of the service area

### Route level

The measures used for the route level guidelines are:

- **Average boardings per revenue hour** - total volume of ridership as compared to the supply of transit service
- **Average boardings per trip** - total number of people that board a vehicle on a specific trip

Route level performance guidelines have been classified into four categories (Rapid Transit, Frequent Transit, Local Transit and Targeted Transit) to acknowledge different performance expectations based on a route's objective.

## Performance Targets

Tables 1 and 2 outline the performance targets set for the system and route level. As well as monitoring existing performance against these guidelines, historical trends will also be monitored to determine if the system or routes are becoming more or less efficient over time. Significant variance (+/- 25 per cent) from the target will place a route on an action list for further investigation and will require more detailed analysis. Routes that fall below the 25 per cent variance will be candidates for corrective adjustments, and routes that are above the 25 per cent variance will be candidates for service improvements. BC Transit will report on an annual basis how the system and routes are performing and this will help guide planning decisions.

----- Investigate for corrective action

----- Investigate for service improvements.

**System Level**

The purpose of monitoring system wide performance is to identify trends in system performance, and compare the performance of the transit system with other peer transit systems. These measures are designed to monitor the pulse of the Victoria Regional Transit System as a whole and guide service planning decisions. This can be particularly useful when identifying system wide impacts of major investments in the transit network, such as development of the Rapid and Frequent Transit networks.

**Table 1: System Level Performance Guidelines**

System	Measure
Boardings per revenue hour	50
Cost per passenger trip	\$4.50
Cost recovery	30%
Passengers trips per capita	65

**Route Level**

Analysis on a route-by-route basis gives a detailed indication of how individual components of the transit system are performing. A route-by-route analysis allows observations of the impact of service changes and investments made in the past and identifies future opportunities for strategic investment or re-investment.

**Table 2: Route Level Performance Guidelines**

Route Type	Boardings per Trip	Boardings per Revenue Hour
Rapid Transit	40	55
Frequent Transit	40	55
Local Transit (High Demand)	25	40
Local Transit (Coverage)	10	20
Targeted Transit	40	60
Community Coverage	-	5

### Transit System Performance Results

Chart 1 displays boardings per revenue hour performance for the transit system by service period for the last year.

**Chart 1**

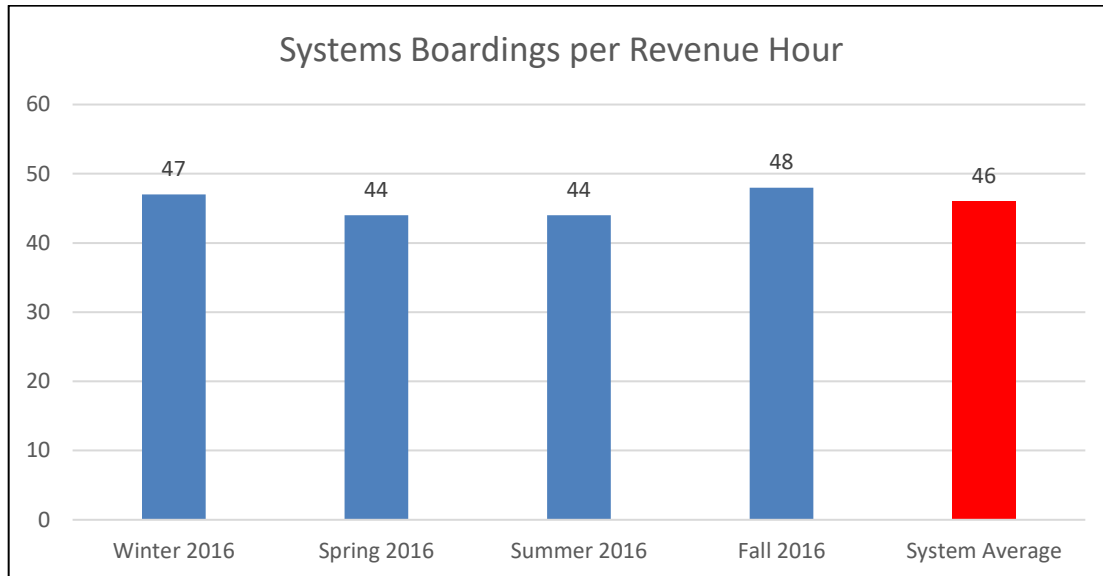
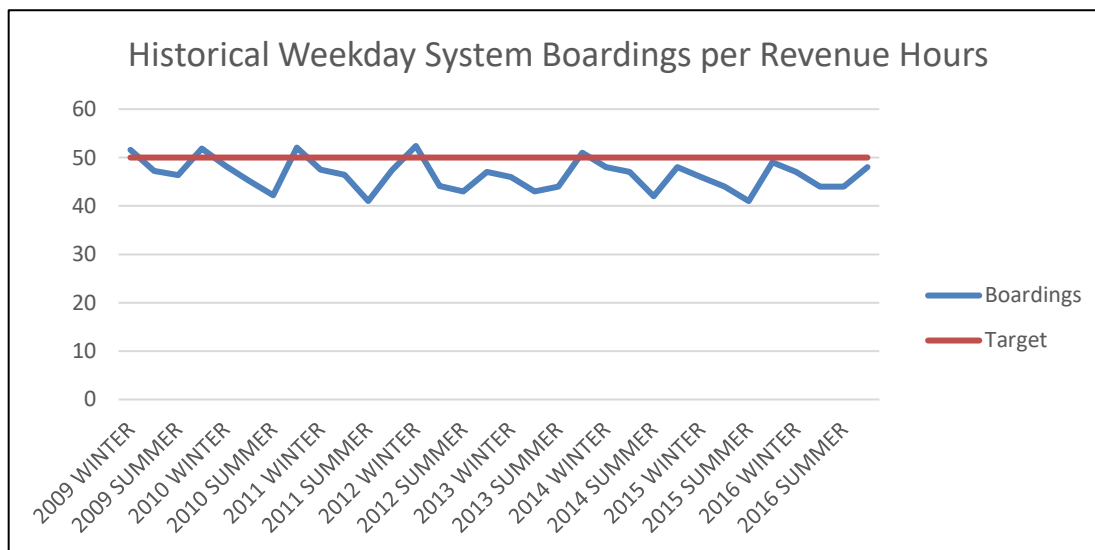


Chart 2 displays the historical boardings per revenue hour performance for the transit system by service period since 2009.

**Chart 2**



## System Performance

The three tables below display average daily system performance by service day for passenger boardings, boardings per trip, and boardings per revenue hour. The tables on the preceding pages display the average daily service performance by route and service day for passenger boardings, boardings per trip, and boardings per revenue hour.

### Weekday System Performance

System Level	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target					50
<b>System Total</b>	<b>3163</b>	<b>2002.1</b>	<b>97,451</b>	<b>30.8</b>	<b>48.7</b>
Urban Total	2385	1419.6	78,559	32.9	55.3
Western Total	490	337.2	11,899	24.3	35.3
Peninsula Total	288	245.3	6,993	24.3	28.5
Suburban Total	778	582.5	18,892	24.3	32.4

### Saturday System Performance

System Level	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target					50
<b>System Total</b>	<b>2,182</b>	<b>1,297.4</b>	<b>60,788</b>	<b>27.9</b>	<b>46.9</b>
Urban Total	1,671	945.4	48,859	29.2	51.7
Western Total	329	195.6	6,636	20.2	33.9
Peninsula Total	182	156.5	5,293	29.1	33.8
Suburban Total	511	352.1	11,929	23.3	33.9

### Sunday System Performance

System Level	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target					50
<b>System Total</b>	<b>1,617</b>	<b>956.7</b>	<b>45,487</b>	<b>28.1</b>	<b>47.5</b>
Urban Total	1,228	690.3	36,115	29.4	52.3
Western Total	233	139.3	5,001	21.5	35.9
Peninsula Total	156	127.1	4,371	28.0	34.4
Suburban Total	389	266.4	9,372	24.1	35.2

## Route Performance Results - Weekday Route Performance

Rapid Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	55.0
15 - Esquimalt/UVic Ex	178	110	7,478	42.0	68.0
16 - Uptown/UVic Ex	77	28.4	2,048	26.6	72.2
50 - Langford Exch/Downtown	171	127.6	7,087	41.4	55.5
70 - Swartz Bay/Downtown Express	37	34.0	1,280	34.6	37.7

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	55.0
4 - UVic/Downtown	202	100.7	6,840	33.9	67.9
6 - Downtown/Royal Oak	208	106.5	7,060	33.9	66.3
11 - UVic/Tillicum Mall	145	127.6	6,504	44.9	51.0
14 - UVic/Vic General	184	155.8	7,933	43.1	50.9
26 - UVic/Dockyard	104	73.1	5,339	51.3	73.0
27 - Gordon Head/Downtown	126	71.2	4,544	36.1	63.9
28 - Majestic/Downtown	123	70.4	4,300	35.0	61.1
30 - Royal Oak Exch/James Bay	85	64.4	3,459	40.7	53.7
31 - Royal Oak Exch/James Bay	86	64.8	3,620	42.1	55.9

Local Transit - High Demand	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				25.0	40.0
2 - Oak Bay/Willows - Downtown	124	46.8	2,171	17.5	46.4
3 - Gonzales/Beacon Hill	73	41.4	1,592	21.8	38.5
7 - UVic/Downtown	121	58.8	3,274	27.1	55.7
8 - Interurban/Oak Bay	56	40.5	1,603	28.6	39.6
21 - Interurban/Downtown	91	48.0	2,353	25.9	49.1
22 - Vic General/Hillside Mall	73	57.8	2,071	28.4	35.9
24 - Admirals Walk/Cedar Hill	39	24.7	853	21.9	34.6
25 - Admirals Walk/Maplewood	37	30.8	1,008	27.2	32.7
39 - Royal Roads/UVic	62	46.6	2,446	39.5	52.5
61 - Sooke/Downtown	63	56.4	1,772	28.1	31.4
72 - Swartz Bay/Downtown via Fifth	79	89.8	2,882	36.5	32.1
75 - Saanichton/Royal Oak/Downtown	74	60.7	1,836	24.8	30.3

Local Transit - Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
1 - Richardson/Downtown	11	3.2	60	5.5	18.6
10 - Jubilee/Songhees	78	19.6	429	5.5	21.9
12 - University Heights/UVic	41	10.4	851	20.8	81.7
13 - UVic/10 Mile Point	8	0.9	25	3.1	26.8
32 - Cordova Bay	31	10.4	234	7.5	22.6
35 - Ridge	18	5.1	299	16.6	58.6
52 - W Speedway/Bear Mtn/Colwood Ex	76	56.0	1,200	15.8	21.4
53 - Colwood/Langford via Atkins	24	8.6	135	5.6	15.7
54 - Metchosin	10	10.0	80	8.0	8.0
55 - Happy Valley	8	7.2	70	8.8	9.7
56 - Thetis Heights / Langford Exch	31	9.1	120	3.9	13.2
57 - Thetis Heights/Westhills	34	12.5	185	5.4	14.8
58 - Goldstream Meadows	16	6.0	116	7.3	19.3
59 - Triangle Mountain	13	7.2	170	13.1	23.6
60 - Wishart	11	6.2	182	16.5	29.4
63 - Otter Point	4	2.3	22	5.5	9.4
64 - East Sooke	8	9.0	52	6.5	5.8

----- Investigate for corrective action  
----- Limited Samples

----- Investigate for service improvements

Local Transit – Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
81 - Swartz Bay/Brentwood	33	22.6	240	7.3	10.6
83 - Sidney/Royal Oak	16	15.2	237	14.8	15.6
85 - North Saanich	8	5.9	71	8.9	12.1
88 - Sidney/Airport	32	8.5	118	3.7	13.8

Targeted Routes	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	60.0
17 - Cedar Hill	2	1.2	93	46.5	77.5
19 - Hillside Mall	2	0.9	72	36.0	77.1
47- Goldstream Meadows/Downtown	4	5.2	140	35.0	26.9
48 - Happy Valley/Downtown	4	4.8	131	32.8	27.1
51 - Langford Exch/UVic	13	9.1	437	33.6	48.0
71 - Swartz Bay/Downtown via W Sidney	7	7.2	250	35.7	34.7
76 - Swartz Bay/UVic	2	1.5	79	39.5	52.7

     Investigate for corrective action           Investigate for service improvements  
     Limited Samples

## Route Performance Results - Saturday Route Performance

Rapid Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				40.0	55.0
15 - Esquimalt/UVic Ex	136	80.3	4,216	31.0	52.5
16 - Uptown/UVic	-	-	-	-	-
50 - Langford Exch/Downtown	129	87.9	4,871	37.8	55.4
70 - Swartz Bay/Downtown Express	26	24.1	1,027	39.5	42.7

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				40.0	55.0
4 - UVic/Downtown	129	60.0	3,536	27.4	58.9
6 - Downtown/Royal Oak	165	74.4	4,849	29.4	65.2
11 - UVic/Tillicum Mall	121	101.1	4,525	37.4	44.8
14 - UVic/Vic Gen	137	105.6	5,214	38.1	49.4
26 - UVic/Dockyard	129	82.0	4,792	37.1	58.4
27 - Gordon Head/Downtown	88	51.8	3,793	43.1	73.3
28 - Majestic/Downtown	88	49.7	3,751	42.6	75.5
30 - Royal Oak Exch/James Bay	73	50.3	2,962	40.6	58.9
31 - Royal Oak Exch/James Bay	75	48.3	2,850	38.0	59.0

Local Transit - High Demand	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				25.0	40.0
2 - Oak Bay/Willows - Downtown	85	30.6	1,516	17.8	49.5
3 - Gonzales/Beacon Hill	38	19.9	744	19.6	37.4
7 - UVic/Downtown	86	41.1	1,634	19.0	39.8
8 - Interurban/Oak Bay	24	16.8	571	23.8	34.1
21 - Interurban/Downtown	28	12.0	433	15.5	36.2
22 - Vic General/Hillside Mall	64	44.9	1,662	26.0	37.0
24 - Admirals Walk/Cedar Hill	32	19.9	488	15.3	24.5
25 - Admirals Walk/Maplewood	33	22.2	608	18.4	27.4
39 - Royal Roads/UVic	16	5.1	230	14.4	45.4
61 - Sooke/Downtown	37	21.8	745	20.1	34.1
72 - Swartz Bay/Downtown via Fifth	69	78.3	3,034	44.0	38.8
75 - Saanichton/Royal Oak/Downtown	37	31.1	825	22.3	26.5

Local Transit - Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				10.0	20.0
1 - Richardson/Downtown	-	-	-	-	-
10 - Royal Jubilee/Songhees	78	19.1	200	2.6	10.5
12 - University Heights/UVic	20	4.7	160	8.0	34.3
13 - UVic/10 Mile Point	6	0.7	5	0.8	7.1
32 - Cordova Bay	20	5.0	120	6.0	24.0
35 - Ridge	-	-	-	-	-
52 - Colwood/Bear Mtn	54	40.6	485	9.0	11.9
53 - Atkins	15	5.8	30	2.0	5.2
54 - Metchosin	7	7.7	130	18.6	16.9
55 - Happy Valley	-	-	-	-	-
56 - Florence Lake/Thetis Heights	28	8.1	85	3.0	10.5
57 - Thetis Heights/Westhills	27	10.3	75	2.8	7.3
58 - Goldstream Meadows	16	5.8	110	6.9	19.1
59 - Triangle Mountain	9	4.3	55	6.1	12.8
60 - Wishart	7	3.4	50	7.1	14.9
63 - Otter Point	-	-	-	-	-
64 - East Sooke	-	-	-	-	-

----- Investigate for corrective action  
 ----- Limited Samples

----- Investigate for service improvements



Local Transit - Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
81 - Swartz Bay/Brentwood	14	11.5	317.0	22.6	27.6
83 - Sidney/Royal Oak	8	4.8	45	5.6	9.4
85 - North Saanich	-	-	-	-	-
88 - Sidney/Airport	28	6.8	45	1.6	6.7

Targeted Routes	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	60.0
17 - Cedar Hill	0	:	:	:	:
19 - Hillside Mall	0	:	:	:	:
47 - Goldstream Meadows/Downtown	0	:	:	:	:
48 - Happy Valley/Downtown	0	:	:	:	:
51 - Langford Exch/UVic	0	:	:	:	:
71 - Swartz Bay/Downtown via W Sidney	0	:	:	:	:
76 - Swartz Bay/UVic	0	:	:	:	:

  Investigate for corrective action  
  Limited Samples

  Investigate for service improvements

## Route Performance Results - Sunday Route Performance

Rapid Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				40.0	55.0
15 - Esquimalt/UVic Ex	117	68.2	3,471	29.7	50.9
16 - Uptown/UVic Ex					
50 - Langford Exch/Downtown	104	67.5	3,769	36.2	55.9
70 - Swartz Bay/Downtown Express	23	20.4	1,125	48.9	55.2

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				40.0	55.0
4 - UVic/Downtown	88	40.8	2,662	30.3	65.2
6 - Downtown/Royal Oak	124	57.2	3,581	28.9	62.6
11 - UVic/Tillicum Mall	77	63.8	3,038	39.5	47.7
14 - UVic/Vic Gen	102	78.5	4,010	39.3	51.1
26 - UVic/Dockyard	87	52.9	3,579	41.1	67.7
27 - Gordon Head/Downtown	66	42.8	3,073	46.6	71.8
28 - Majestic/Downtown	66	42.3	2,592	39.3	61.3
30 - Royal Oak Exch/James Bay	56	37.2	1,895	33.8	51.0
31 - Royal Oak Exch/James Bay	57	35.9	2,015	35.4	56.1

Local Transit - High Demand	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				25.0	40.0
2 - Oak Bay/Willows - Downtown	65	22.5	1,046	16.1	46.5
3 - Gonzales/Beacon Hill	34	16.9	530	15.6	31.3
7 - UVic/Downtown	65	29.2	1,162	17.9	39.8
8 - Interurban/Oak Bay	18	10.4	355	19.7	34.1
21 - Interurban/Downtown	26	11.2	414	15.9	36.9
22 - Vic General/Hillside Mall	48	31.5	1,347	28.1	42.8
24 - Admirals Walk/Cedar Hill	21	12.3	350	16.7	28.6
25 - Admirals Walk/Maplewood	20	14.0	425	21.3	30.4
39 - Royal Roads/UVic	15	4.8	220	14.7	46.3
61 - Sooke/Downtown	24	14.4	518	21.6	35.9
72 - Swartz Bay/Downtown via Fifth	53	60.1	2,146	40.5	35.7
75 - Saanichton/Royal Oak/Downtown	33	23.4	721	21.8	30.8

Local Transit – Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
<b>Target</b>				10.0	20.0
1 - Richardson/Downtown	-	-	-	-	-
10 - Jubilee/Songhees	37	9.0	110	3.0	12.2
12 - University Heights/UVic	23	5.4	180	7.8	33.4
13 - UVic/10 Mile Point	-	-	-	-	-
32 - Cordova Bay	16	3.7	60	3.8	16.1
35 - Ridge	-	-	-	-	-
52 - W Speedway/Bear Mtn/Colwood Ex	31	25.5	410	13.2	16.1
53 - Colwood / Langford via Atkins	12	4.3	43	3.6	10.0
54 - Metchosin	7	6.9	51	7.3	7.4
55 - Happy Valley	-	-	-	-	-
56 - Thetis Heights / Langford via Florence Lake	15	4.1	35	2.3	8.5
57 - Millstream/Westhills	15	5.5	35	2.3	6.4
58 - Goldstream Meadows	8	2.9	55	6.9	18.8
59 - Triangle Mountain	10	4.8	50	5.0	10.4
60 - Wishart	7	3.4	35	5.0	10.3
63 - Otter Point	-	-	-	-	-
64 - East Sooke	-	-	-	-	-

----- Investigate for corrective action  
 ----- Limited Samples

----- Investigate for service improvements

Local Transit – Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
81 - Swartz Bay/Brentwood	14	12.0	212	15.1	17.7
83 - Sidney/Royal Oak	6	3.5	50	8.3	14.5
85 - North Saanich					
88 - Sidney/Airport	24	5.8	50	2.1	8.6

Targeted Routes	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	60.0
17 - Cedar Hill	-	-	-	-	-
19 - Hillside Mall	-	-	-	-	-
47 - Goldstream Meadows/Downtown	-	-	-	-	-
48 - Happy Valley/Downtown	-	-	-	-	-
51 - Langford Exch/UVic	-	-	-	-	-
71 - Swartz Bay/Downtown via W Sidney	-	-	-	-	-
76 - Swartz Bay/UVic	3	2.0	67	22.3	33.5

  Investigate for corrective action  
  Limited Samples

  Investigate for service improvements

## **APPENDIX**

### **KEY ASSUMPTIONS**

#### **Data**

Ridership information used was collected from the Fall of 2016 through automated passenger counters which are in place on more than 140 of the buses assigned to the Victoria Region's conventional fleet. This system counts the number of persons boarding and disembarking from a vehicle. A person may board more than one bus to complete a single trip when transfers are involved.

#### **External Factors**

In addition to service changes, there are a number of external factors that may affect transit ridership. Some of these include fare increases, changing fuel prices, changing macro- economics and changes in land use.

## **GLOSSARY**

#### **Boardings**

Number of times passengers board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination and regardless of whether they pay a fare, use a pass or transfer, ride for free, or pay in some other way. Also called unlinked passenger trips.

#### **Peak Hours**

Refers to weekday a.m. and p.m. service during commute hours to carry a maximum number of passengers. An example of commute or peak hours could be defined as time between 6:00 a.m. and 9:00 a.m., and between 3:00 p.m. and 6:00 p.m..

#### **Revenue Service**

Time when a vehicle is available to the general public and there is an expectation of carrying passengers. These passengers either directly pay fares, are subsidized by public programs, or provide payment through some contractual arrangement. Revenue service includes layover and recovery time. Revenue service excludes deadheading.