

# Attachment: Victoria Regional Transit System Spring 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 April 4, 2016 to June 26, 2016 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**

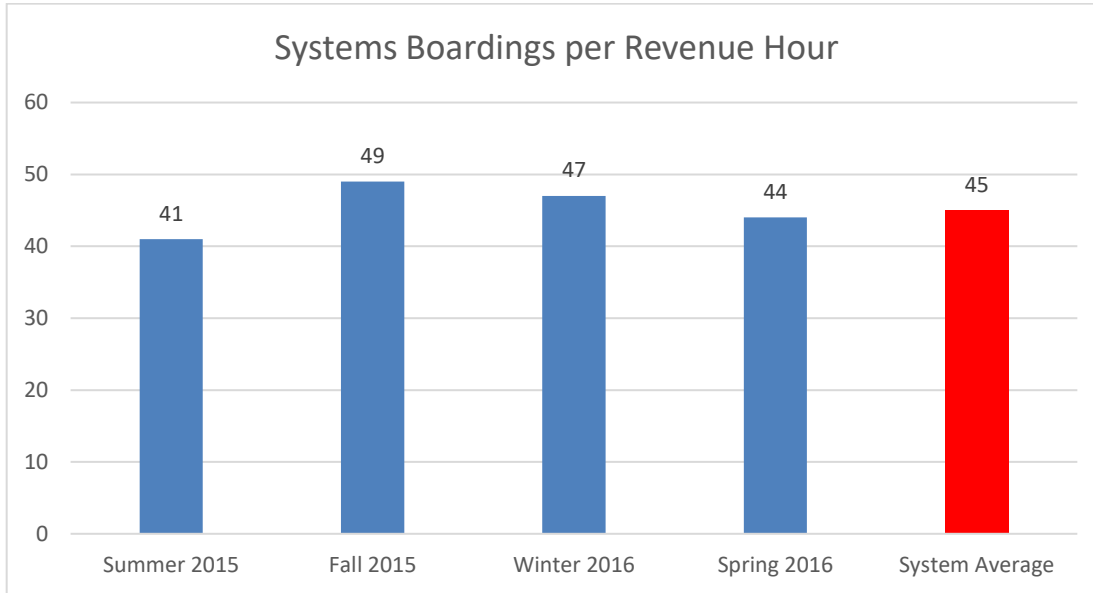
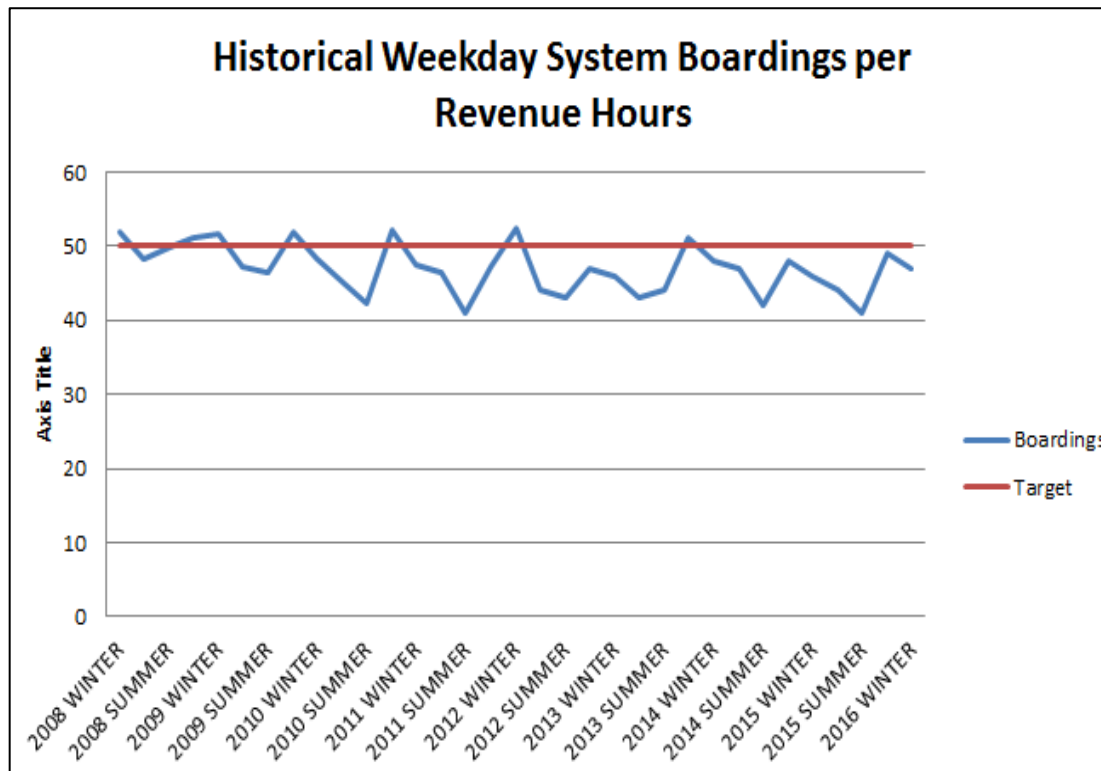


Chart 2 displays the historical boardings per revenue hour performance for the transit system by service period since 2008.

**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					<b>50</b>
<b>System Total</b>	<b>2,999</b>	<b>1,897.0</b>	<b>84,592</b>	<b>28.2</b>	<b>44.6</b>
Urban Total	2,207	1,317.3	66,844	30.3	50.7
Western Total	500	330.9	10,386	20.8	31.4
Peninsula Total	292	248.8	7,362	25.2	29.6
Suburban Total	792	579.7	17,748	22.4	29.7

### Saturday System Performance

System Level	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target					<b>50</b>
<b>System Total</b>	<b>2,190</b>	<b>1,305.5</b>	<b>56,088</b>	<b>25.6</b>	<b>43.0</b>
Urban Total	1,671	945.2	43,974	26.3	46.5
Western Total	329	195.6	6,485	19.7	33.2
Peninsula Total	190	164.7	5,629	29.6	34.2
Suburban Total	519	360.3	12,114	23.3	33.6

### Sunday System Performance

System Level	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target					<b>50</b>
<b>System Total</b>	<b>1,629</b>	<b>970.1</b>	<b>42,135</b>	<b>25.9</b>	<b>43.4</b>
Urban Total	1,223	686.2	32,697	26.7	47.6
Western Total	256	159.4	4,823	18.8	30.3
Peninsula Total	150	124.6	4,615	30.8	37.1
Suburban Total	406	283.9	9,438	23.2	33.2

## 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	109.9	6,348	35.7	57.7
16 - Uptown/UVic Ex	22	8.0	348	15.8	43.8
50 - Langford Exch/Downtown	171	121.2	6,551	38.3	54.1
70 - Swartz Bay/Downtown Express	37	33.7	1,338	36.2	39.7

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	55.0
4 - UVic/Downtown	159	79.6	4,461	28.1	56.0
6 - Downtown/Royal Oak	208	106.2	6,511	31.3	61.3
11 - UVic/Tillicum Mall	131	119.1	5,844	44.6	49.1
14 - UVic/Vic General	164	137.5	7,018	42.8	51.0
26 - UVic/Dockyard	104	73.2	4,978	47.9	68.0
27 - Gordon Head/Downtown	126	64.6	4,122	32.7	63.8
28 - Majestic/Downtown	123	66.4	3,979	32.3	59.9
30 - Royal Oak Exch/James Bay	83	61.9	3,020	36.4	48.8
31 - Royal Oak Exch/James Bay	84	60.2	3,515	41.8	58.4

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	2,206	17.8	47.2
3 - Gonzales/Beacon Hill	73	41.4	1,611	22.1	38.9
7 - UVic/Downtown	120	58.3	2,382	19.9	40.9
8 - Interurban/Oak Bay	48	37.7	1,341	27.9	35.6
21 - Interurban/Downtown	77	41.7	1,883	24.5	45.2
22 - Vic General/Hillside Mall	73	57.8	1,963	26.9	34.0
24 - Admirals Walk/Cedar Hill	39	24.7	776	19.9	31.4
25 - Admirals Walk/Maplewood	37	30.8	970	26.2	31.5
39 - Royal Roads/UVic	51	41.8	1,414	27.7	33.9
61 - Sooke/Downtown	63	53.3	1,607	25.5	30.1
72 - Swartz Bay/Downtown via Fifth	81	92.6	3,017	37.2	32.6
75 - Saanichton/Royal Oak/Downtown	74	62.0	1,890	25.5	30.5

Local Transit - Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
1 - Richardson/Downtown	12	3.6	65	5.4	18.3
10 - Jubilee/Songhees	78	19.6	444	5.7	22.7
12 - University Heights/UVic	32	8.1	700	21.9	86.1
13 - UVic/10 Mile Point	8	0.9	15	1.9	16.1
32 - Cordova Bay	31	10.4	314	10.1	30.3
35 - Ridge	18	5.1	449	24.9	88.0
52 - Colwood/Bear Mtn	80	58.4	765	9.6	13.1
53 - Colwood/Langford via Atkins	26	9.2	72	2.8	7.8
54 - Metchosin	10	10.0	115	11.5	11.5
55 - Happy Valley	8	7.2	56	7.0	7.7
56 - Thetis Heights / Langford via Florence Lake	32	9.4	130	4.1	13.9
57 - Millstream/Westhills	36	13.0	105	2.9	8.1
58 - Goldstream Meadows	17	6.4	125	7.4	19.6
59 - Triangle Mountain	13	7.2	105	8.1	14.5
60 - Wishart	11	6.2	80	7.3	12.9
63 - Otter Point	4	2.3	20	5.0	8.6
64 - East Sooke	8	9.0	55	6.9	6.1

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■ 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	22.7	581	17.6	25.6
83 - Sidney/Royal Oak	16	15.2	175	10.9	11.5
85 - North Saanich	8	5.9	40	5.0	6.8
88 - Sidney/Airport	36	9.6	95	2.6	9.9

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	97	48.5	80.8
19 - Hillside Mall	2	0.9	70	35.0	75.0
33 - UVic	-	-	-	-	-
47- Goldstream Meadows/Downtown	4	4.7	129	32.3	27.6
48 - Happy Valley/Downtown	4	4.5	108	27.0	24.2
51 - Langford Exch/UVic	13	9.1	363	27.9	39.9
71 - Swartz Bay/Downtown via W Sidney	7	7.2	226	32.3	31.6
76 - Swartz Bay/UVic	-	-	-	-	-

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## Route Performance Results - Saturday 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	136	80.3	3,896	28.6	48.5
16 - Uptown/UVic Ex	-	-	-	-	-
50 - Langford Exch/Downtown	129	87.9	4,769	37.0	54.3
70 - Swartz Bay/Downtown Express	26	24.1	1,092	42.0	45.4

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	55.0
4 - UVic/Downtown	129	60.0	2,843	22.0	47.4
6 - Downtown/Royal Oak	165	74.4	4,795	29.1	64.5
11 - UVic/Tillicum Mall	121	101.1	4,377	36.2	43.3
14 - UVic/Vic Gen	137	105.6	4,486	32.7	42.5
26 - UVic/Dockyard	129	82.0	3,834	29.7	46.8
27 - Gordon Head/Downtown	88	51.8	3,105	35.3	60.0
28 - Majestic/Downtown	88	49.7	2,952	33.5	59.4
30 - Royal Oak Exch/James Bay	73	50.3	2,614	35.8	52.0
31 - Royal Oak Exch/James Bay	75	48.3	2,840	37.9	58.8

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	85	30.5	1,494	17.6	49.0
3 - Gonzales/Beacon Hill	38	19.9	811	21.3	40.8
7 - UVic/Downtown	86	41.1	1,439	16.7	35.0
8 - Interurban/Oak Bay	24	16.8	592	24.7	35.3
21 - Interurban/Downtown	28	12.0	446	15.9	37.3
22 - Vic General/Hillside Mall	64	44.9	1,662	26.0	37.0
24 - Admirals Walk/Cedar Hill	32	19.9	500	15.6	25.1
25 - Admirals Walk/Maplewood	33	22.2	593	18.0	26.7
39 - Royal Roads/UVic	16	5.1	230	14.4	45.4
61 - Sooke/Downtown	37	21.8	741	20.0	34.0
72 - Swartz Bay/Downtown via Fifth	69	78.3	2,915	42.2	37.2
75 - Saanichton/Royal Oak/Downtown	45	39.3	1,277	28.4	32.5

Local Transit - Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
1 - Richardson/Downtown	-	-	-	-	-
10 - Jubilee/Songhees	78	19.1	180	2.3	9.4
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 - Colwood / Langford via Atkins	15	5.8	30	2.0	5.2
54 - Metchosin	7	7.7	110	15.7	14.3
55 - Happy Valley	-	-	-	-	-
56 - Thetis Heights / Langford via Florence Lake	28	8.1	80	2.9	9.9
57 - Millstream/Westhills	27	10.3	70	2.6	6.8
58 - Goldstream Meadows	16	5.8	105	6.6	18.2
59 - Triangle Mountain	9	4.3	50	5.6	11.6
60 - Wishart	7	3.4	45	6.4	13.4
63 - Otter Point	-	-	-	-	-
64 - East Sooke	-	-	-	-	-

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----- 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	265	18.9	23.1
83 - Sidney/Royal Oak	8	4.8	40	5.0	8.4
85 - North Saanich					
88 - Sidney/Airport	28	6.8	40	1.4	5.9

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	:	:	:	:
33 - Uvic	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
Target				40.0	55.0
15 - Esquimalt/UVic Ex	117	68.2	3,122	26.7	45.8
16 - Uptown/UVic Ex	-	-	-	-	-
50 - Langford Exch/Downtown	104	68.2	3,705	35.6	54.4
70 - Swartz Bay/Downtown Express	22	19.9	1,113	50.6	56.0

Frequent Transit	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				40.0	55.0
4 - UVic/Downtown	88	40.8	1,980	22.5	48.6
6 - Downtown/Royal Oak	124	57.2	3,558	28.7	62.2
11 - UVic/Tillicum Mall	77	63.8	3,187	41.4	50.0
14 - UVic/Vic Gen	102	78.5	3,594	35.2	45.8
26 - UVic/Dockyard	87	52.9	2,700	31.0	51.0
27 - Gordon Head/Downtown	66	42.4	2,627	39.8	62.0
28 - Majestic/Downtown	66	41.7	2,467	37.4	59.2
30 - Royal Oak Exch/James Bay	54	35.2	1,723	31.9	49.0
31 - Royal Oak Exch/James Bay	54	34.2	1,900	35.2	55.6

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	65	22.5	1,286	19.8	57.2
3 - Gonzales/Beacon Hill	34	17.2	215	6.3	12.5
7 - UVic/Downtown	65	29.2	1,079	16.6	37.0
8 - Interurban/Oak Bay	18	10.4	331	18.4	31.8
21 - Interurban/Downtown	26	11.2	403	15.5	35.9
22 - Vic General/Hillside Mall	48	31.5	1,225	25.5	39.0
24 - Admirals Walk/Cedar Hill	21	12.7	345	16.4	27.2
25 - Admirals Walk/Maplewood	20	14.0	405	20.3	29.0
39 - Royal Roads/UVic	15	4.8	215	14.3	45.3
61 - Sooke/Downtown	24	14.4	429	17.9	29.8
72 - Swartz Bay/Downtown via Fifth	52	59.5	2,359	45.4	39.6
75 - Saanichton/Royal Oak/Downtown	32	23.9	819	25.6	34.2

Local Transit – Coverage	Trips Operated	Revenue Hours	Passenger Boardings	Boardings per Trip	Boardings per Revenue Hr
Target				10.0	20.0
1 - Richardson/Downtown	-	-	-	-	-
10 - Jubilee/Dockyard	37	9.0	105	2.8	11.7
12 - University Heights/UVic	23	5.4	175	7.6	32.5
13 - UVic/10 Mile Point	-	-	-	-	-
32 - Cordova Bay	16	3.7	55	3.4	14.7
35 - Ridge	-	-	-	-	-
52 - Colwood/Bear Mtn	54	44.8	410	7.6	9.1
53 - Colwood / Langford via Atkins	12	4.3	27	2.3	6.3
54 - Metchosin	7	6.9	42	6.0	6.1
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	-	-	-	-	-

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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	224	16.0	18.7
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	-	-	-	-	-
33 - UVic	-	-	-	-	-
47 - Goldstream Meadows/Downtown	-	-	-	-	-
48 - Happy Valley/Downtown	-	-	-	-	-
51 - Langford Exch/UVic	-	-	-	-	-
71 - Swartz Bay/Downtown via W Sidney	-	-	-	-	-
76 - Swartz Bay/UVic	-	-	-	-	-

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----- Limited Samples

----- Investigate for service improvements

## **APPENDIX**

### **KEY ASSUMPTIONS**

#### **Data**

Ridership information used was collected from the Spring 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.