2019/20 – Q2
Performance Measures Report

HALIFAX
TRANSIT

Contents

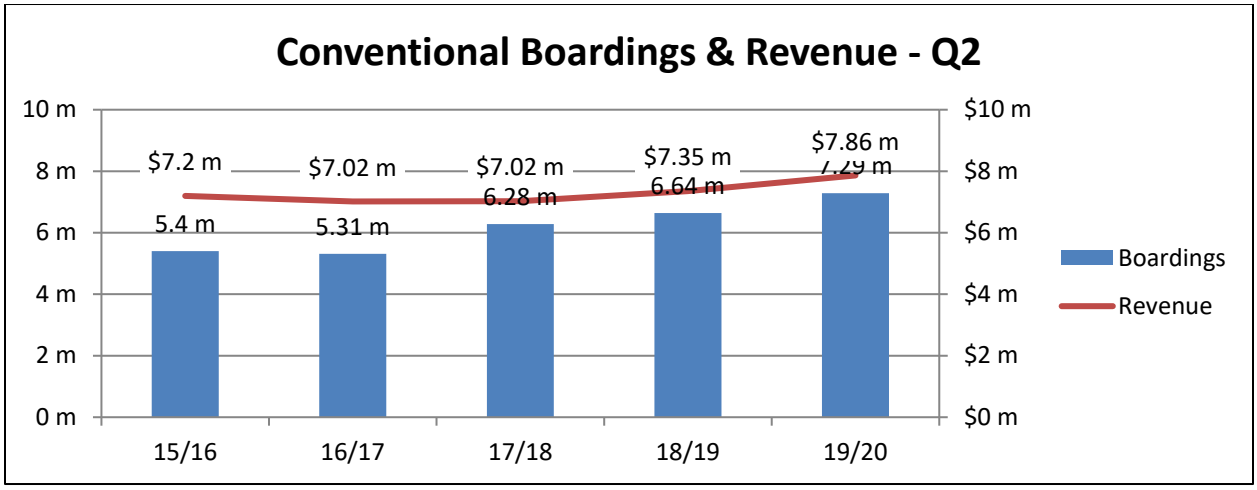
Boardings & Revenue

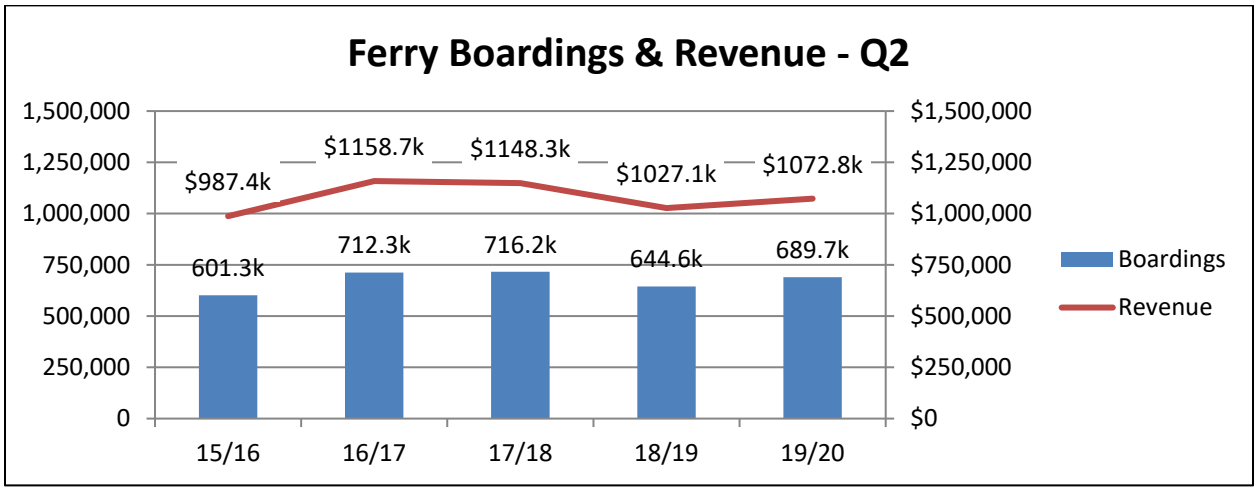
Revenue and boardings are reported to demonstrate how well transit services were used over the quarter, in comparison to the same quarter the previous year.

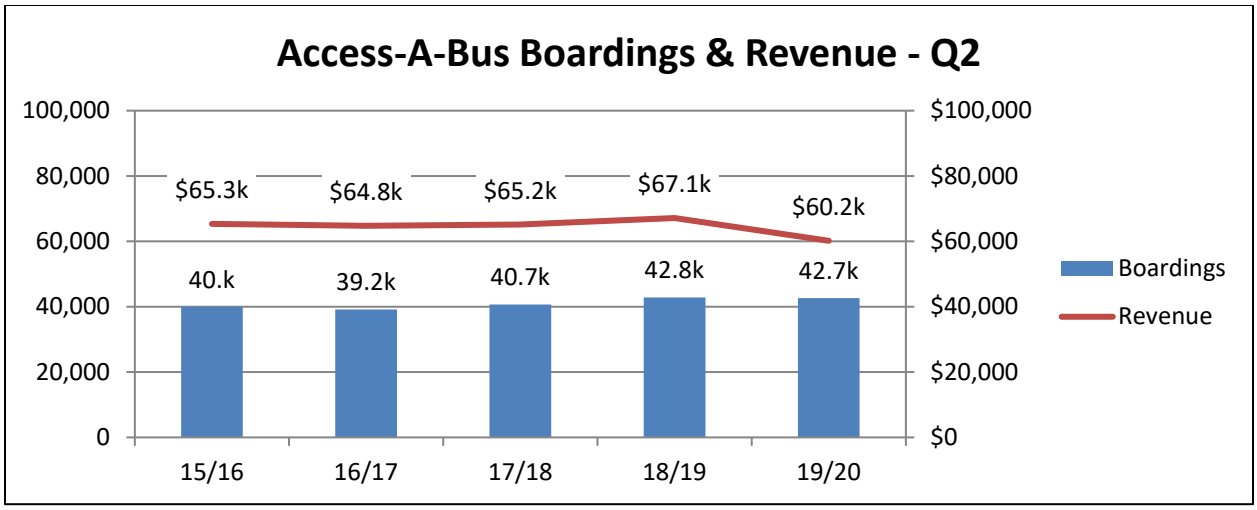
By installing Automatic Passenger Counter (APC) systems throughout the network in the 2017/18 fiscal year, Halifax Transit is now able to track the number of boardings by counting passengers entering the bus at each stop, instead of estimating boardings from revenue. Therefore, the data source for boardings in the chart below changed effective 2017/18. When a trip requires a transfer, the boardings metric would count the same passenger each time they entered a new bus. This method of data collection provides a more accurate measure of how passengers are utilizing the system, as assumptions related to multi-use revenue sources, such as tickets and passes, are removed, and replaced by physical counts.

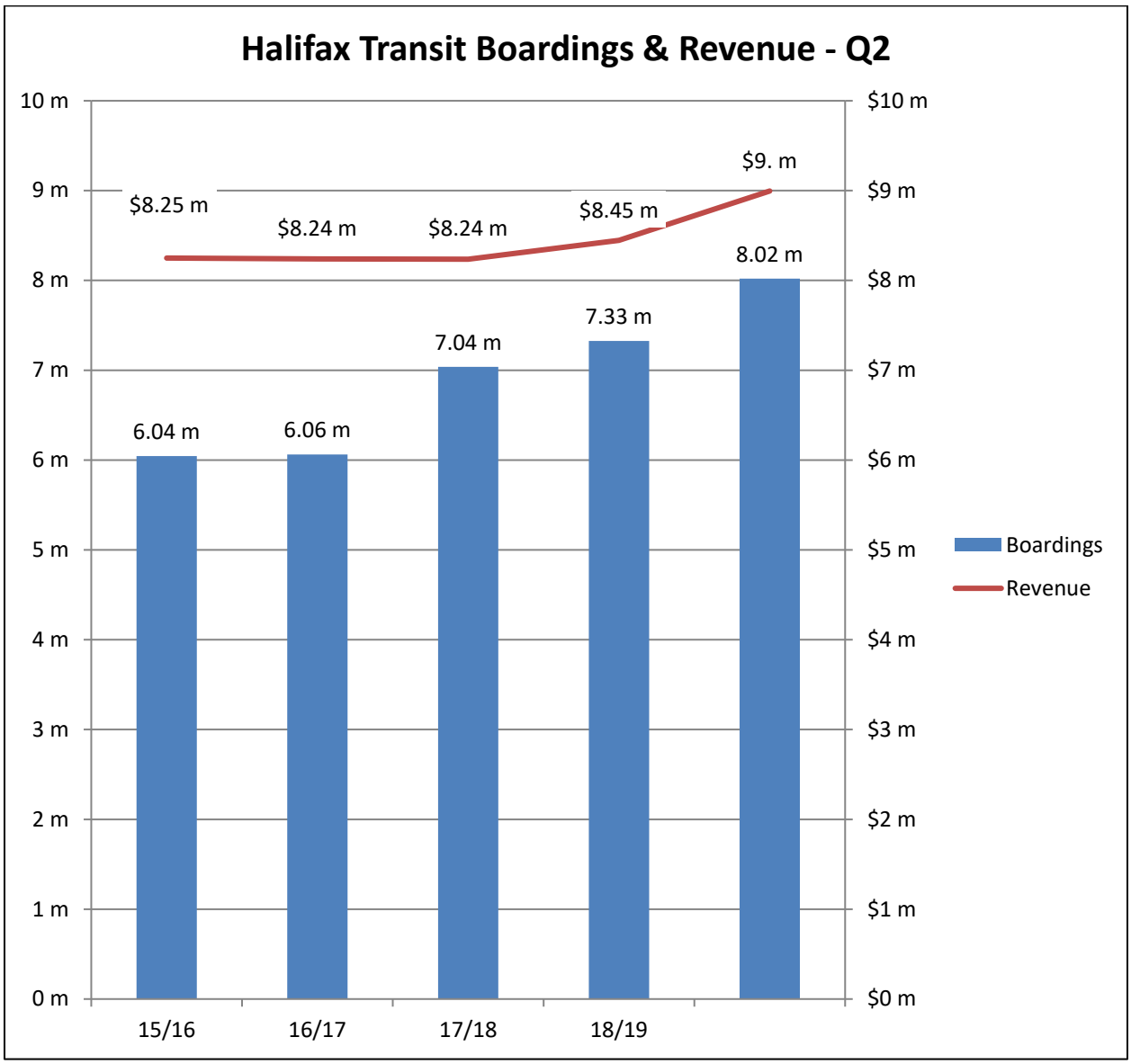
In the second quarter, Conventional boardings increased 9.8% from this quarter last year, Ferry boardings increased by 7.0% and Access-A-Bus boardings dropped slightly by 0.4%. Overall, system wide boardings increased this quarter by 9.5% compared to last year. Overall revenue this quarter increased 6.5% from last year. The route network changes implemented in August 2018 have resulted in more passengers transferring at the Lacewood Terminal and Mumford Terminal, which partly contributes to the increase in boardings, but is estimated to account for less than 1% of the overall network wide increase in boardings.

Historical Boardings & Revenue



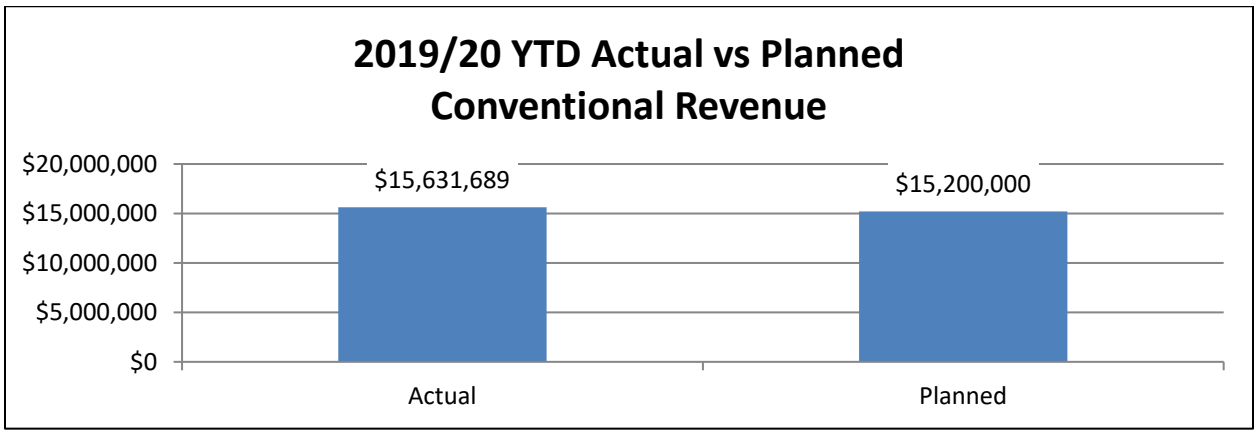


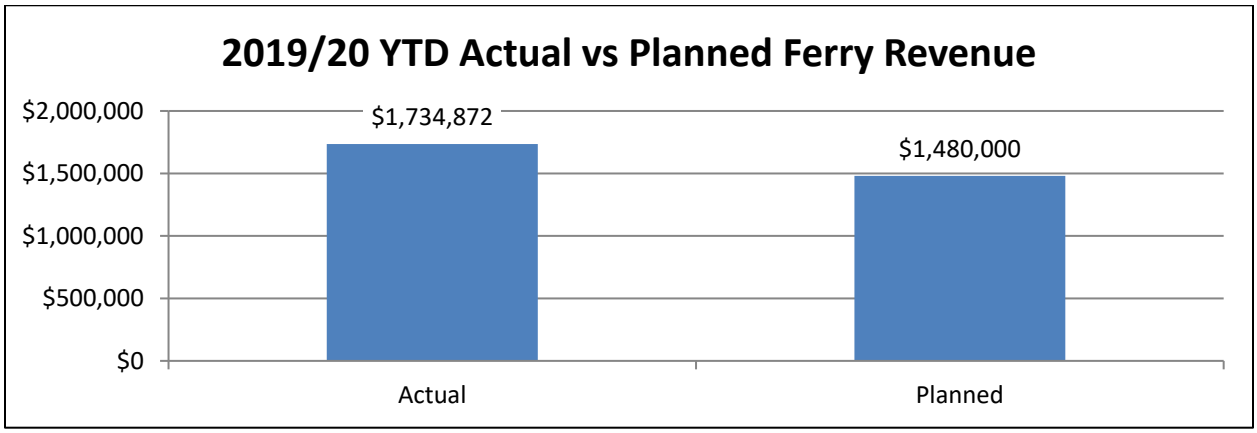

Access-A-Bus Boardings & Revenue - Q2
100,000
80,000
60,000
40,000
20,000
0
$100,000
$80,000
$60,000
$40,000
$20,000
$0
$65.3k
$64.8k
$65.2k
$67.1k
$60.2k
40.k
39.2k
40.7k
42.8k
42.7k
15/16
16/17
17/18
18/19
19/20
Boardings
Revenue

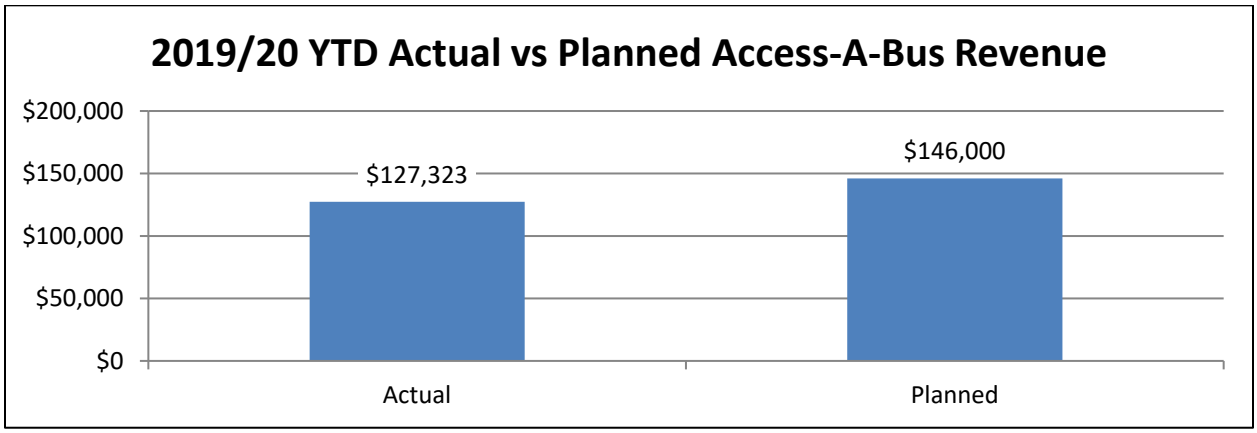

Halifax Transit Boardings & Revenue - Q2
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
1 m
0 m
$10 m
$9 m
$8 m
$7 m
$6 m
$5 m
$4 m
$3 m
$2 m
$1 m
$0 m
$8.25 m
$8.24 m
$8.24 m
$8.45 m
$9. m
6.04 m
6.06 m
7.04 m
7.33 m
8.02 m
15/16
16/17
17/18
18/19
Boardings
Revenue

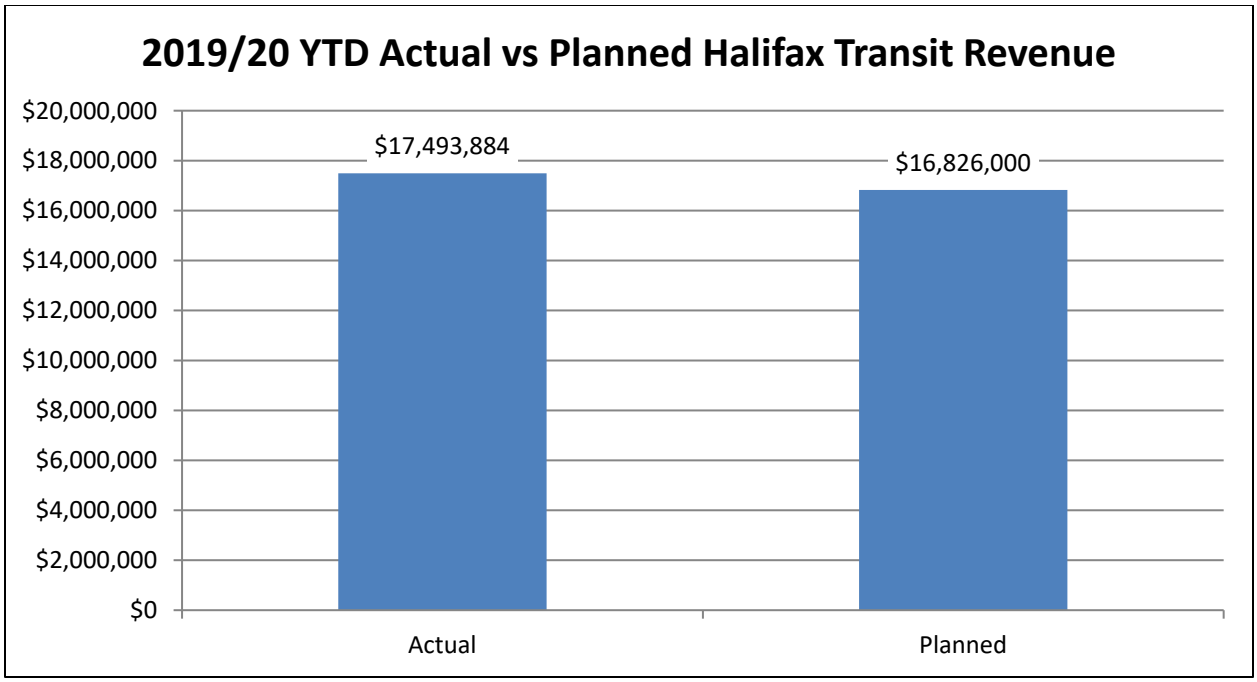
Revenue – Actual vs. Planned

The following charts provide an indication of how much revenue has been generated by each service type and by Halifax Transit in comparison to the planned budget revenue. Conventional revenue in the second quarter increased 6.9% from this time last year and is trending 0.5% below the planned amount. Ferry revenue to date decreased 4.5% from last year and is trending 24.5% above the planned amount. Access-A-Bus revenue to date has decreased 10.4% and is trending 26.3% below the planned amount. Overall revenue to date has increased 6.4% from this time last year and stands at 3.8% higher than the planned amount.









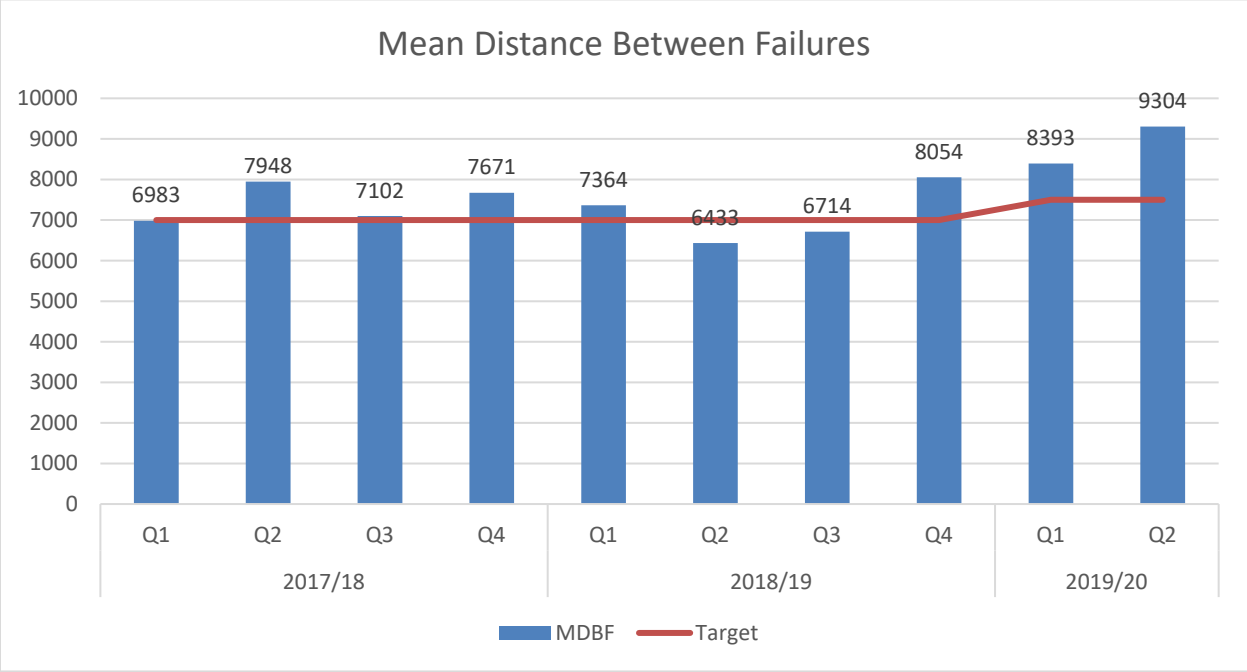
Mean Distance Between Failures

Halifax Transit consulted with a number of transit authorities in Canada, and the Canadian Urban Transit Association (CUTA), to understand the difference between past maintenance performance indicators and the industry standard. As a consequence, it was determined that Halifax Transit had reported all maintenance service calls, while other jurisdictions removed service calls associated with auxiliary equipment such as AVL, communication equipment, fareboxes, alarms, lights, passenger-related issues, etc. Also, some jurisdictions reported the number of change-offs (buses discontinuing their scheduled service) to be reflected as failures instead of service calls. Halifax Transit has selected to continue reporting service calls but as a separate metric; Mean Distance Between Service Calls. In order to remain consistent with the industry standard, a new metric defined as Mean Distance Between Failures (MDBF) has been selected and defined below.

Halifax Transit's Mean Distance Between Failures (MDBF) is the distance in kms covered between failures. CUTA references the Federal Transit Administration's definition of failures which states that there are two classes of failures. The first being major mechanical system failures, which is the "failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns." The second type is other mechanical system failures which is the "failure of some other mechanical element of the revenue vehicle that, because of local agency policy, prevents the revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip even though the vehicle is physically able to continue in revenue service". Therefore, the MDBF is equal to the number of instances whereby a failure resulted in a change-off of the bus or service being lost. This metric does not consider failures resulting from passenger-related events (i.e. sickness on the bus), farebox defects or accident damages as they do not impede the scheduled revenue trips, which aligns with other transit authorities surveyed. Due to the nature of the data sources, Halifax Transit is looking to improve the accuracy of this number by removing failures that were logged, but resulted in "no fault found". Currently, the reported number does include these items.

Bus Maintenance had set a target of 7,000 kms between failures in 2018. As this target had been successfully met in 2018, the target has increased to 7,500 kms for 2019. The target for this KPI shall be revisited on annual basis to promote continuous improvement, which may be achieved by implementation and support of quality and preventative maintenance initiatives.

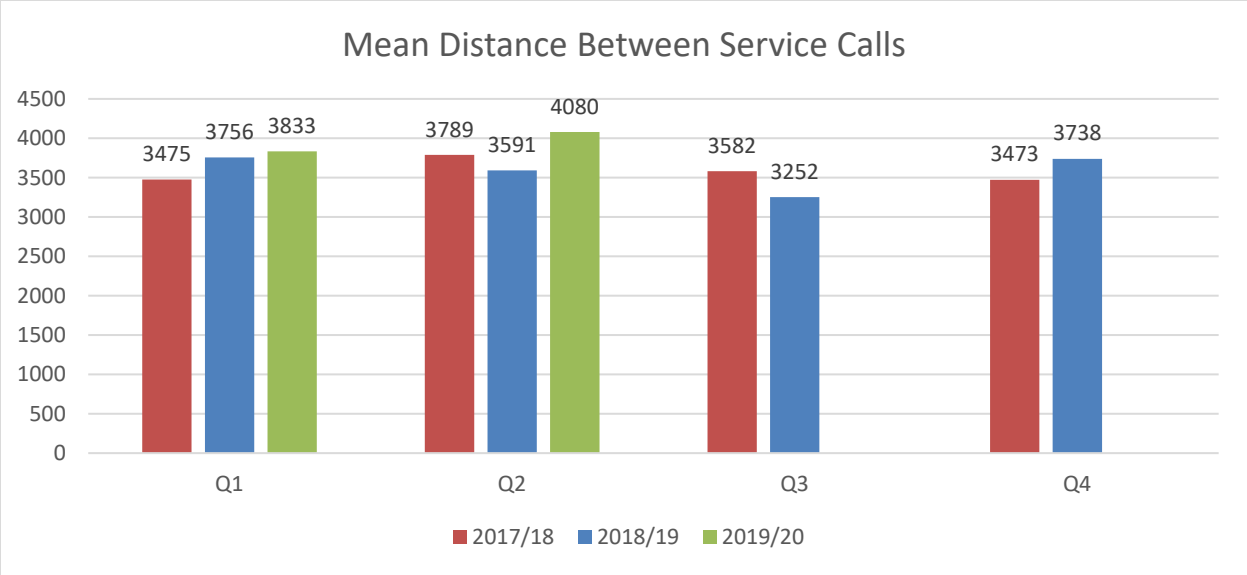
For the second quarter of 2019, the MDBF for conventional transit was 9,304 kms. This is equivalent to a 45% improvement from the second quarter of previous year (2018). Bus Maintenance will continue to monitor this KPI and further develop quality initiatives to decrease aftertreatment and cooling system defects.



Mean Distance Between Service Calls

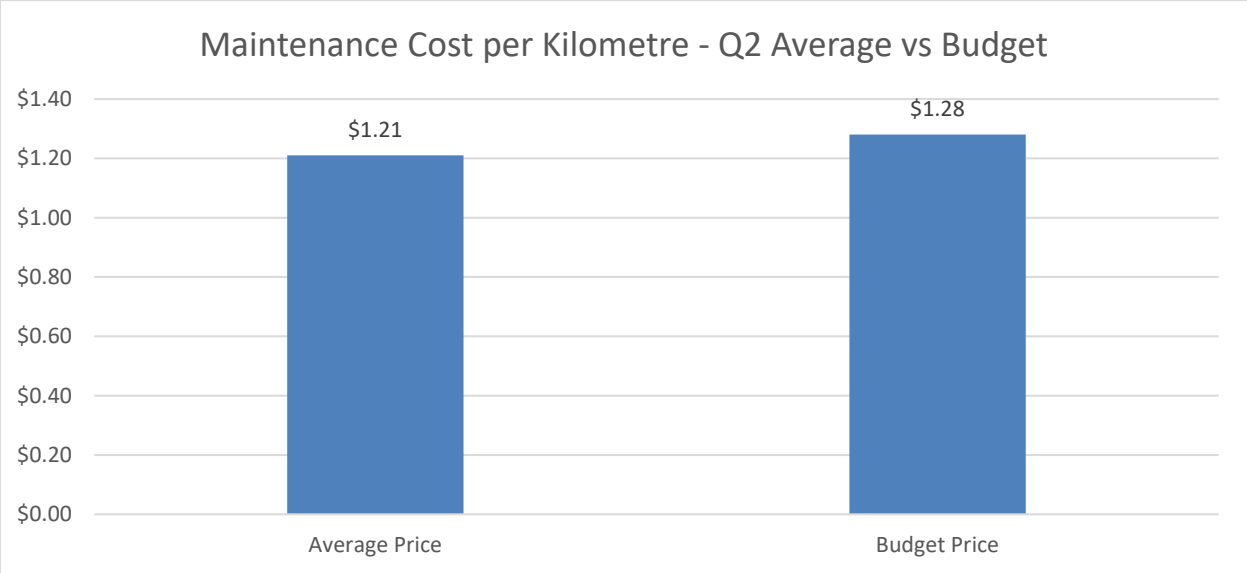
In order to continue monitoring the number of maintenance service calls, this will be reflected as a separate metric; Mean Distance Between Service Calls (MDBS). This number will reflect the distance in kilometres covered on average between maintenance service calls. This number includes all instances of service calls including issues with secondary equipment, passenger-related events and damages to the bus resulting from minor accidents. Bus Maintenance is continuing to benchmark this metric in order to provide a target.

For the second quarter of 2019, the MDBS for conventional transit was 4,080 kms. In comparison to the second quarter of 2018/19 (3,591 kms), this is an improvement of 14%. For the second quarter of 2019, the MDBS for Access-A-Bus service was 34,920 kms. Bus Maintenance will continue to monitor this metric in order to reduce service calls.



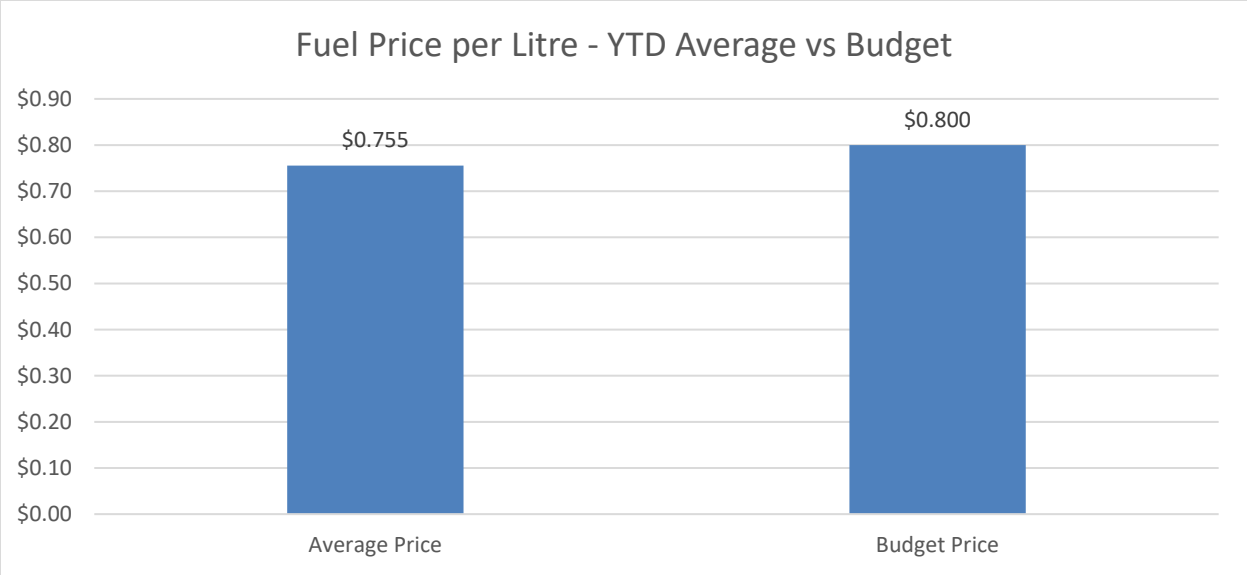
Bus Maintenance Cost – Quarter Average vs Budget

In the second quarter maintenance costs were $1.21/km, while the budgeted maintenance cost was $1.28/km. Therefore, the average cost per km was under budget by $0.07/km or 5.5%. Bus Maintenance will continue to strengthen budgeting processes to improve accuracy of future budgets.



Fuel Price – Year to Date Average vs Budget

The budgeted fuel price for 2019/20 was set at 80 cents/litre. In the second quarter, the average fuel price to date was 76 cents/litre, 4 cents lower than the budgeted cost per litre.



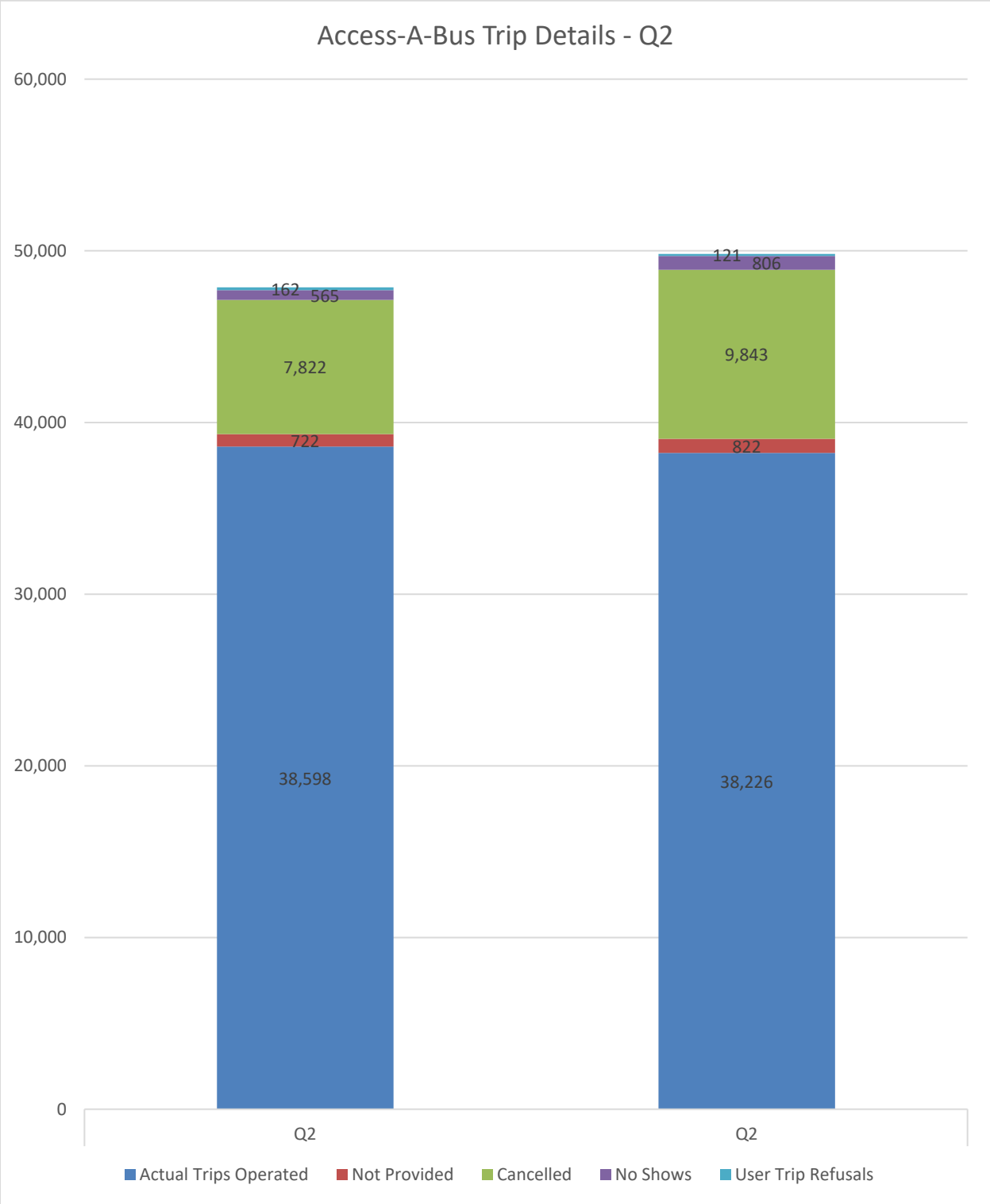
Access-A-Bus Trip Details

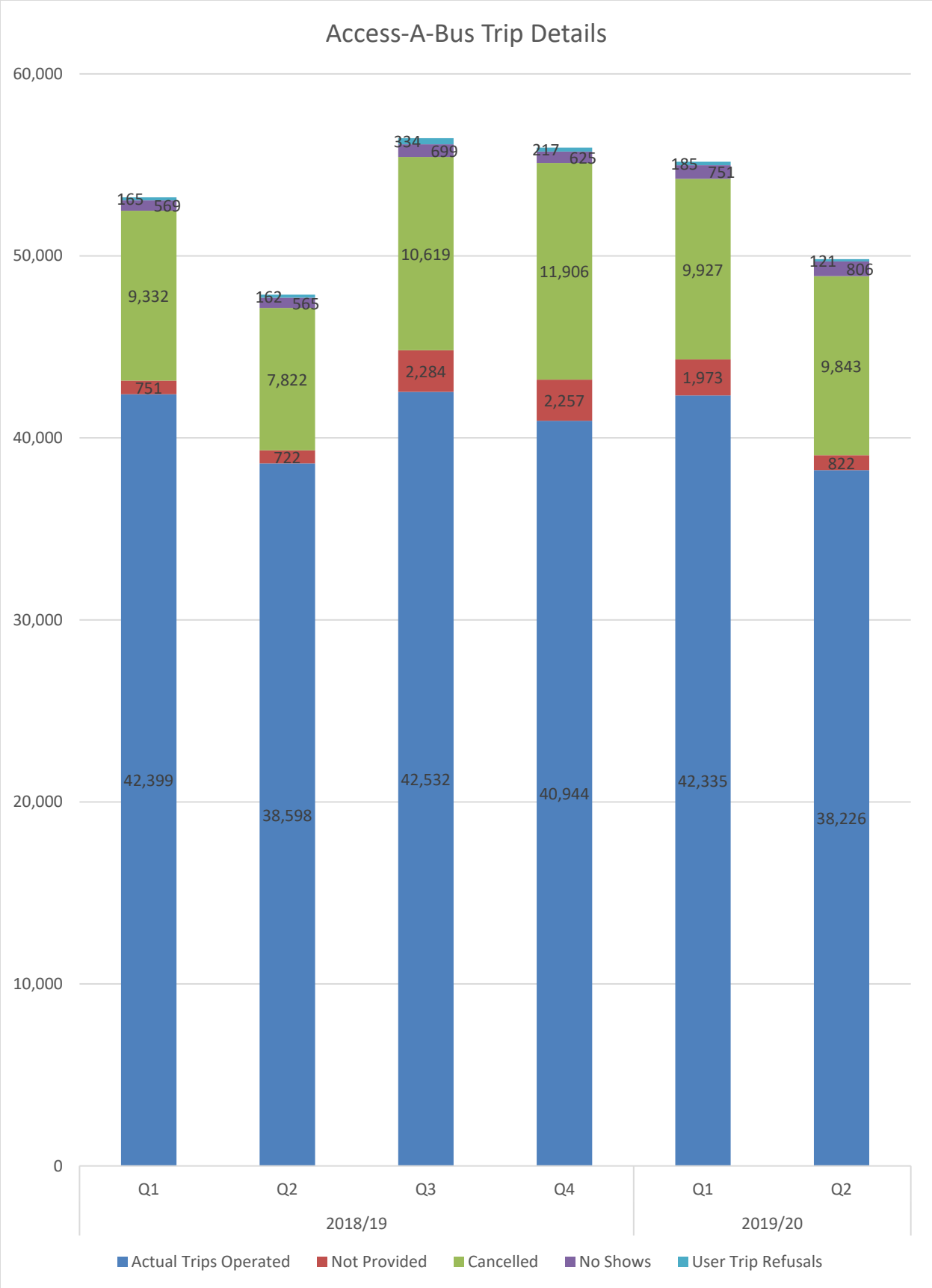
Access-A-Bus trip details are tracked monthly to provide an indication of efficiency in Access-A-Bus usage and booking. In April 2018 Access-A-Bus completed a scheduling software upgrade and process improvement review. After introducing these new, standardized processes, scheduling effectiveness has improved. These changes have resulted in statistics, such as the number of trip cancellations, no shows and errors, being recategorized and therefore may not be comparable with prior years.

During a more recent review of the reporting processes for Access-A-Bus it was determined that a revision to the reporting categories would provide information more reflective of the performance drivers. The category that was previously reported as “Waitlisted” will be reported as “Not Provided”. “Not Provided” includes any requested trip that could not be provided within the quarter. Those trips that were previously reported as “Not Provided” were reporting errors and are now removed from the total requested trips. A new category has been included which is “User Trip Refusals”, this category includes any trips where the customer has been given the option of a trip within a half hour of their desired trip time and the customer has declined the given trip. Efforts continue to progress related to understanding the data set available from the 2018 software upgrade. Partnership with the vendor continues and may result in future reporting changes, all in an effort to convey the most accurate and meaningful performance statistics possible.

	Q2 - Previously Used Method	Q2 - New Method
Total Requested Trips	49,965	49,818
Actual Trips Operated	38,237	38,226
Not Provided	106	822
Cancelled	9,997	9,843
Waitlisted	804	
No Shows	821	806
User Trip Refusals		121

In the second quarter of 2019/20, 372 fewer trips were operated compared to second quarter last year, a decrease of 1%. The trips that were not provided increased by 14% this quarter, compared to this quarter last year.



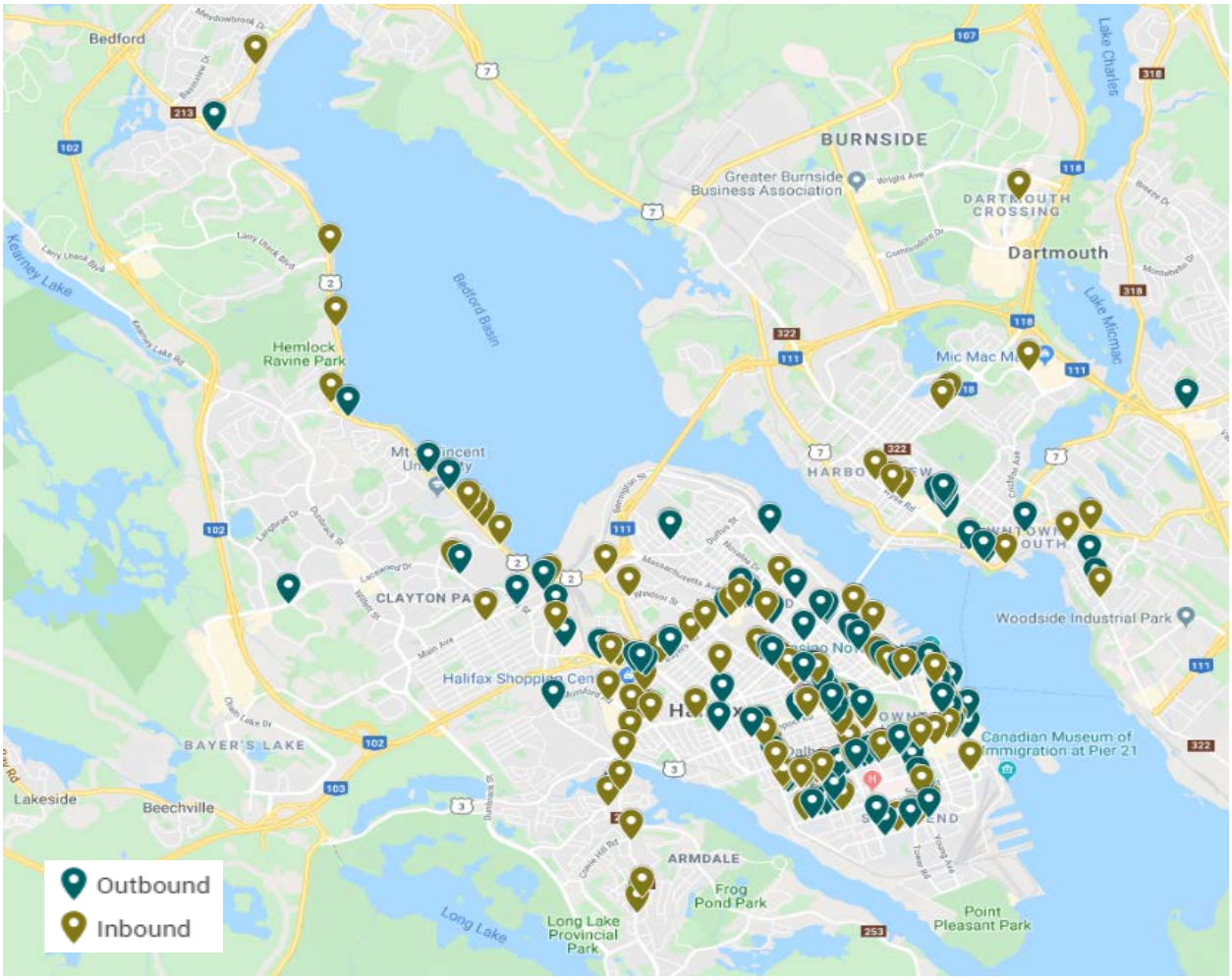

Access-A-Bus Trip Details
60,000
50,000
40,000
30,000
20,000
10,000
0
165
569
9,332
751
42,399
162
565
7,822
722
38,598
334
699
10,619
2,284
42,532
217
625
11,906
2,257
40,944
185
751
9,927
1,973
42,335
121
806
9,843
822
38,226
Q1
Q2
Q3
Q4
Q1
Q2
2018/19
2019/20
Actual Trips Operated
Not Provided
Cancelled
No Shows
User Trip Refusals

Passenger Overloads

Halifax Transit tracks overloads that are reported to help match scheduling requirements to passenger demands. Work is underway to improve the reporting process to ensure the data provides a more accurate reflection of actual conditions. All overloads may not be included, as many go unreported for a number of reasons.

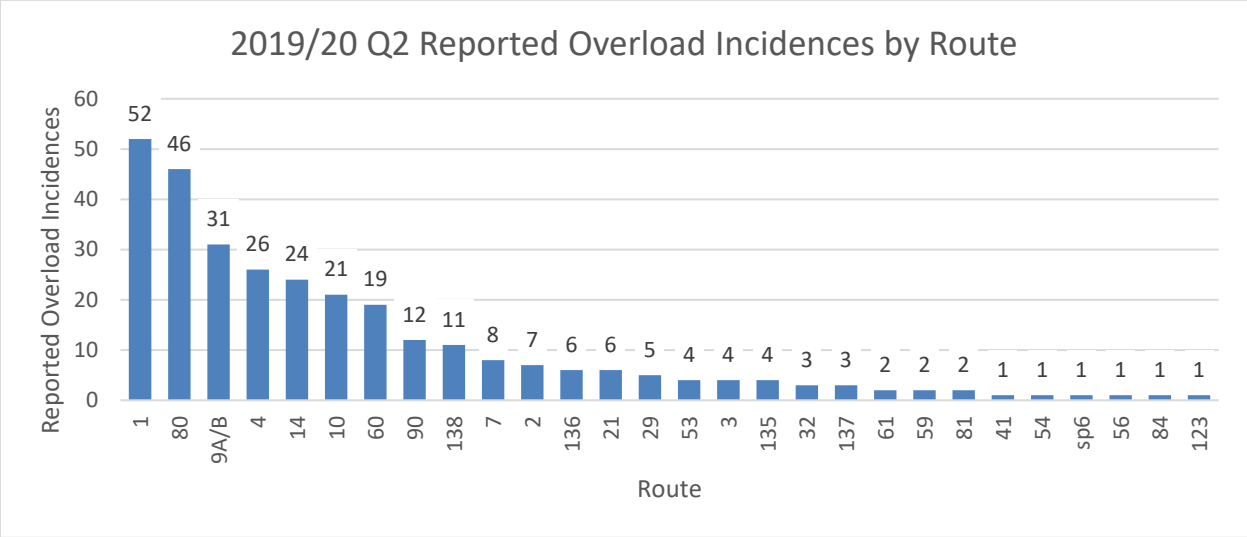
Passenger Overloads by Area

The figure below shows the locations of reported overloads during Q2.



Passenger Overloads by Route

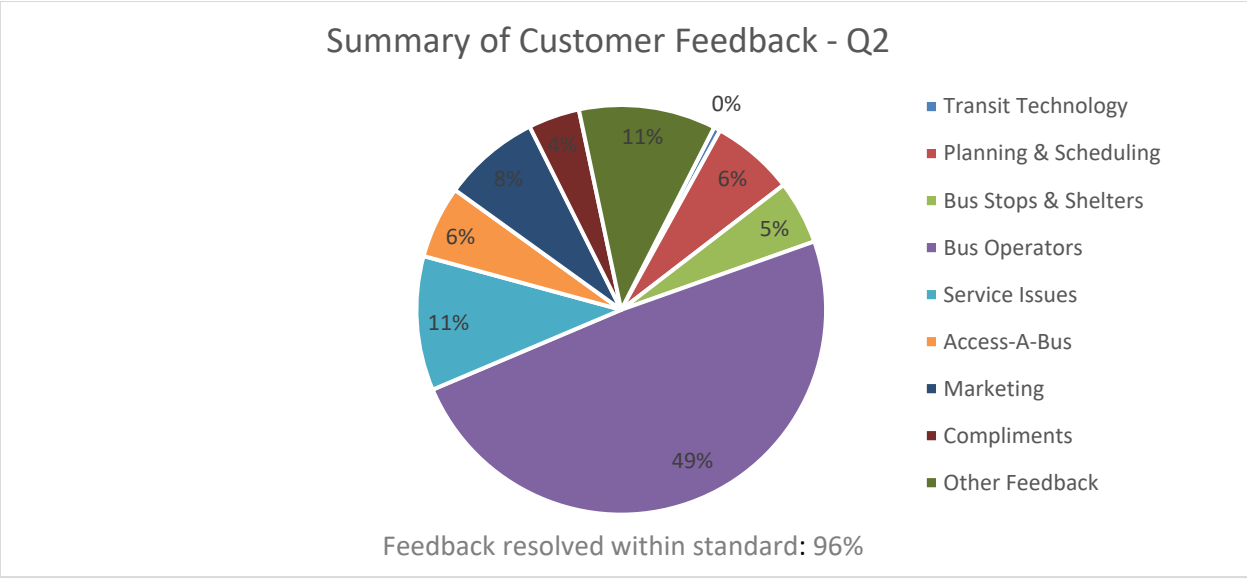
The following graph shows the most commonly overloaded routes during the quarter.

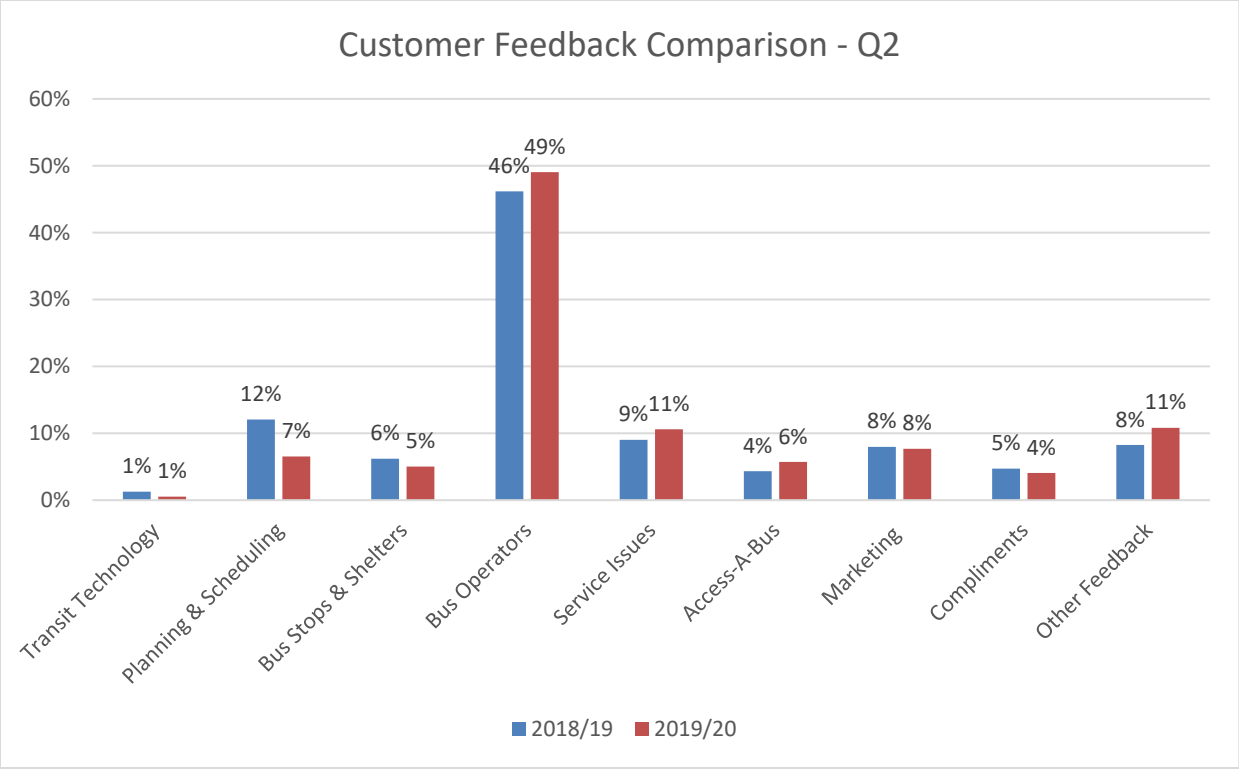


Customer Service – All Services

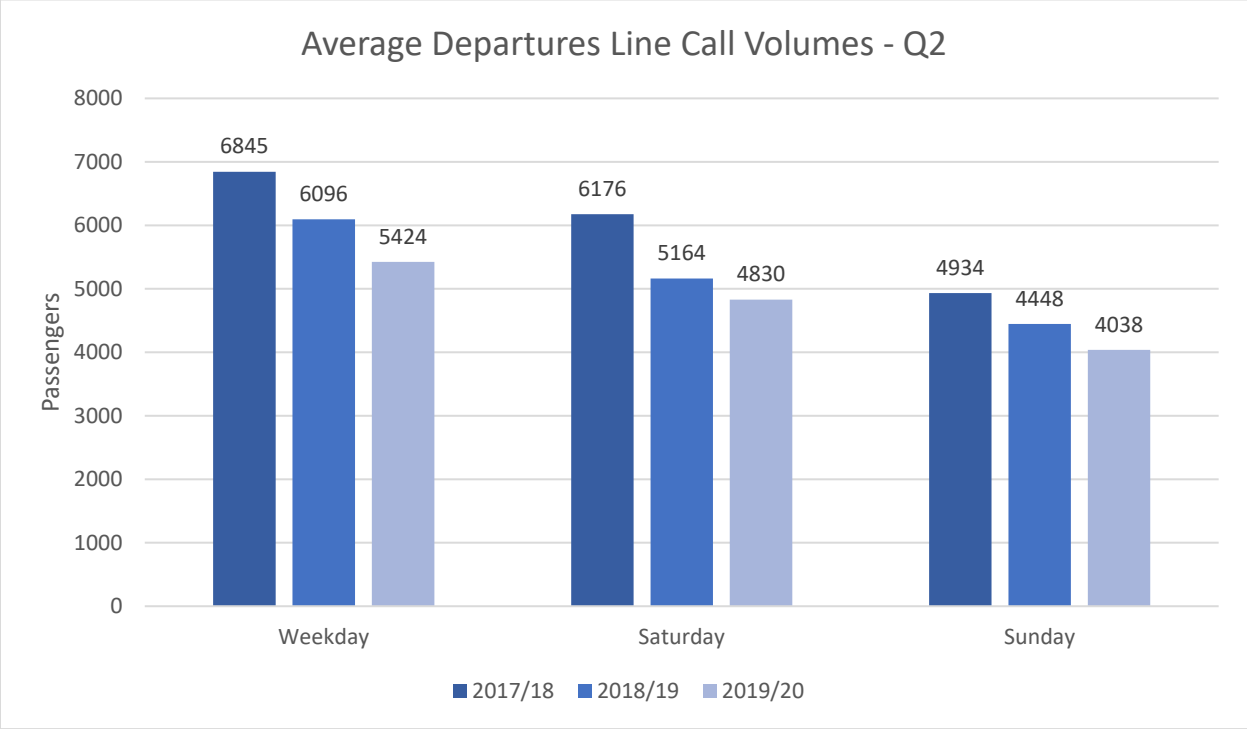
Customer service statistics are measured monthly using the Hansen Customer Relationship Management software along with Crystal Reports. Feedback is first categorized by subject matter and then divided into two categories: feedback resolved within service standard and feedback resolved outside service standard. The service standard varies depending on the subject matter.

This quarter, 49% of feedback received was related to bus operators, the remaining 51% is comprised of feedback regarding service issues, planning and scheduling, bus stops and shelters, marketing, compliments and other miscellaneous comments. Halifax Transit aims to address 90% of feedback within service standard. This quarter 96% of customer feedback was resolved within standard.





Call volumes to the Departures Line (902-480-8000) are displayed by day of the week. In the second quarter of 2019/20, average call volumes were lower than this time last year for weekdays as well as for Saturdays and Sundays.

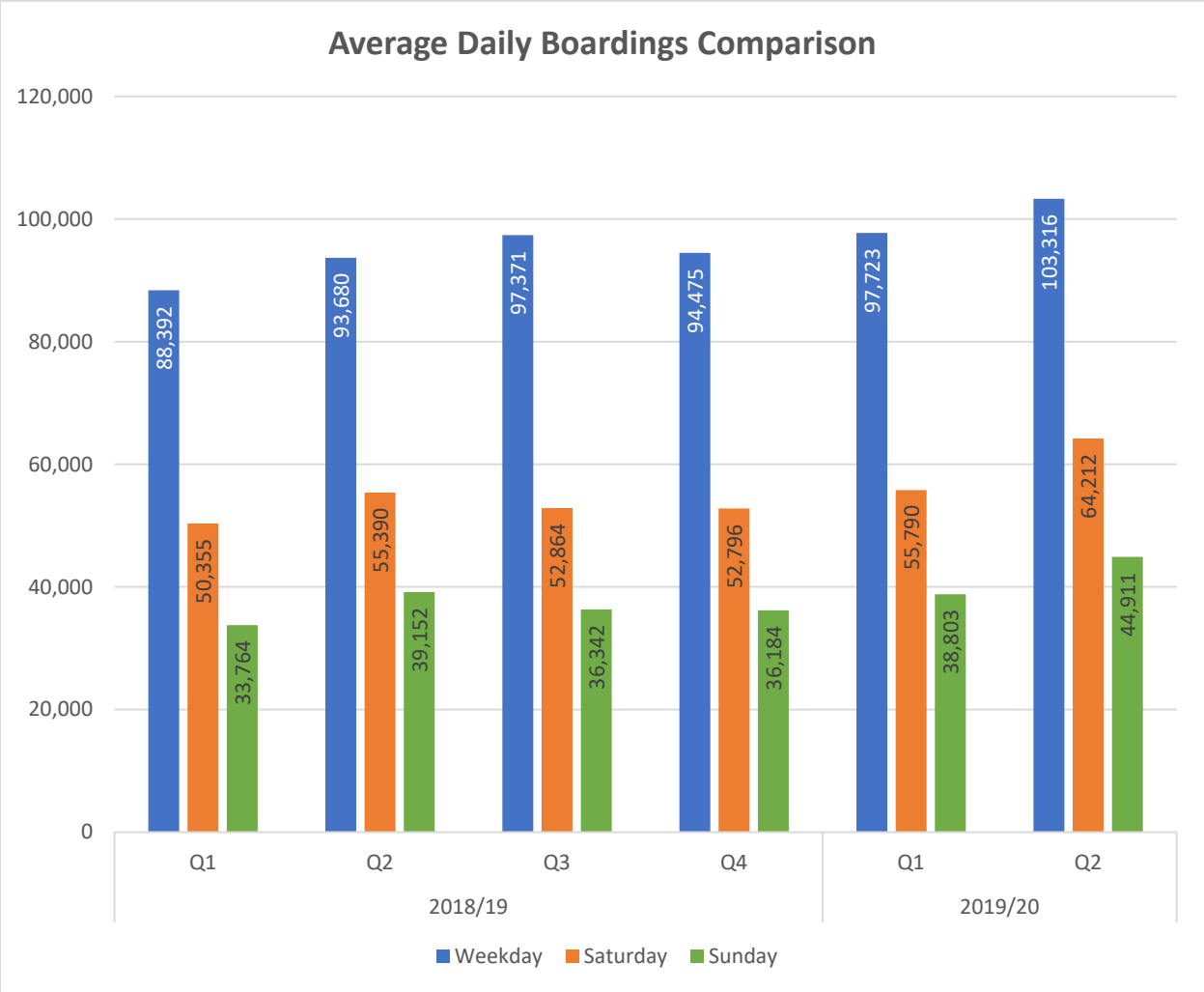


Passenger Boardings & Utilization

Automatic Passenger Counter (APC) data is now being been used to report bus ridership statistics. The APCs provide data within a 90% degree of accuracy. Boardings by Route demonstrate passenger usage during the past quarter. APC data has been collected since September 2016. The standard deviation is included to demonstrate the degree of variance in boardings from the daily average passenger count.

Average weekday boardings in the second quarter were 103,316 ± 9,152 (8.9% variance). Average Saturday boardings this quarter were 64,212 ± 5,911 (9.2% variance). Average Sunday boardings this quarter were 44,911 ± 3,340 (7.4% variance).

Average Daily Boardings by Service Day

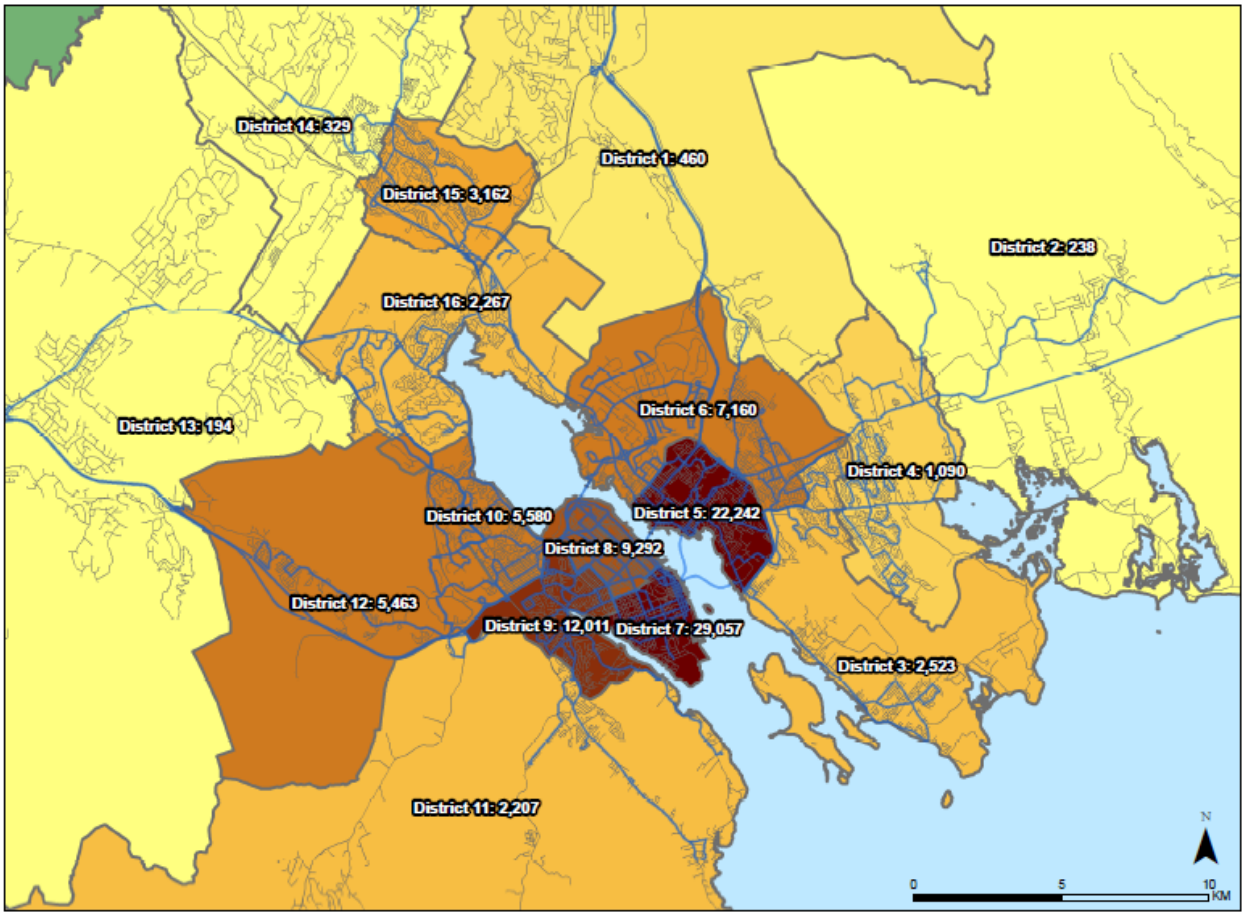


Boardings by District

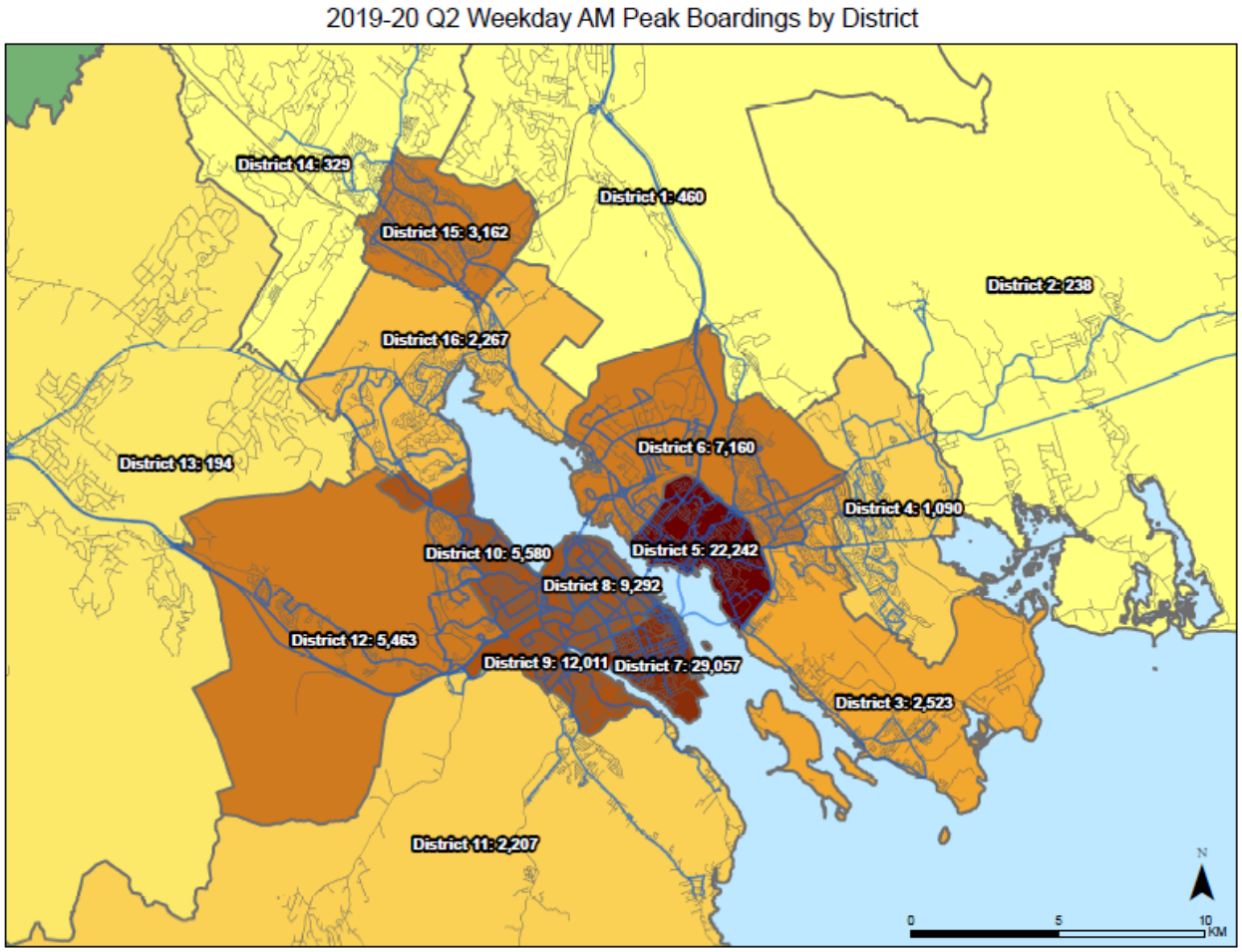
To assist in visualizing where ridership demands exist, boardings have been mapped by district. The all-day boardings map illustrates typical boardings over an entire service day, whereas the AM Peak Period map represents boardings during the morning peak period only and therefore generally illustrates passenger origins.

Weekday Boardings by District – All Day

2019-20 Q2 Weekday Boardings by District



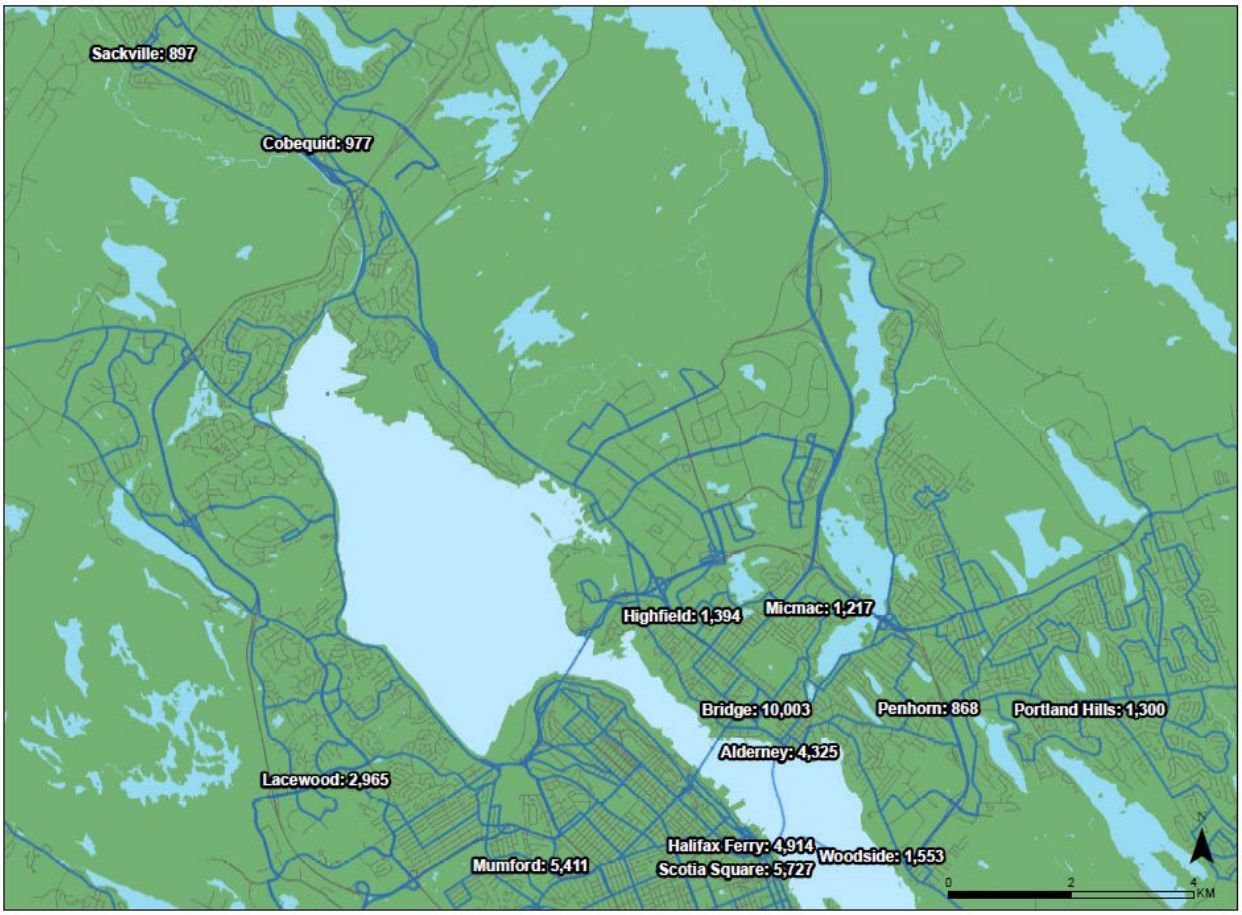
Weekday Boardings by District – AM Peak Period



Weekday Boardings by Terminal

The following map shows average weekday boardings by terminal across the network. This accounts for approximately 40% of total weekday boardings.

2019-20 Q2 Weekday Boardings by Terminal



Passengers per Hour

Passengers per hour measures the volume of passengers carried per service hour by route. Due to differences in service model/design, Express Routes are measured instead by passengers per trip. Ridership fluctuates significantly by season and therefore figures are compared to the same quarter in the previous year. Conventional route targets vary by time of day and are not illustrated at this time as data is being presented over the entire service day only. Express routes have a ridership target of 20 passengers per trip, while Regional Express Routes have a target of 15 passengers per trip.

Boardings & Passengers per Hour

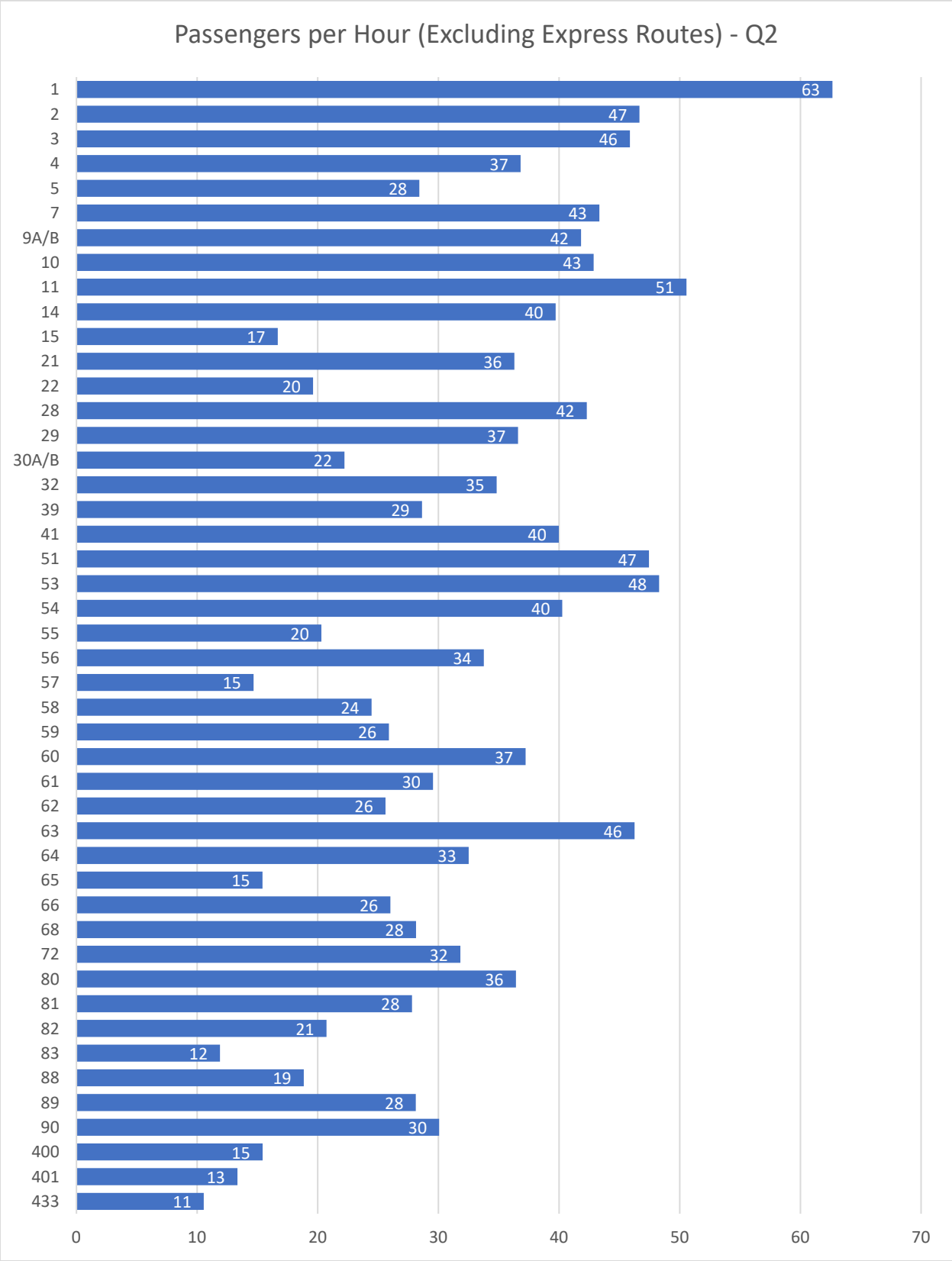
Q2 Comparison - Average Daily Boardings by Route												
Route	Weekday				Saturday				Sunday			
	18/19		19/20		18/19		19/20		18/19		19/20	
	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr
1	9,419	60	9,903	63	7,475	66	7,844	68	4,807	55	5,484	63
2	4,379	41	5,005	47	4,130	41	4,555	45	2,070	28	2,817	37
3	6,149	40	6,998	46	3,223	37	3,751	43	3,013	32	4,043	42
4	4,669	37	4,672	37	1,895	38	2,101	42	1,436	32	1,875	41
5	110	29	113	28								
7	4,498	39	4,972	43	3,220	34	3,503	37	1,863	35	2,104	40
9A/B	6,406	38	7,097	42	3,703	50	4,258	57	2,775	39	3,301	46
9A	4,311	39	4,775	43	1,748	49	1,963	55	1,206	35	1,371	40
9B	2,095	35	2,322	39	1,955	50	2,294	58	1,569	43	1,930	52
10	4,529	41	4,728	43	2,937	40	3,104	41	1,757	36	2,042	42
11	87	38	113	51								
14	2,501	39	2,609	40	1,278	38	1,334	40	1,011	34	1,121	38
15	237	16	252	17	116	11	165	16	159	13	185	15
21	1,156	31	1,087	36	720	20	831	24	413	23	564	32
22	619	18	638	20	466	14	521	16	390	11	421	12
28	1,346	35	1,606	42	1,362	34	1,517	37	565	30	734	40
29	2,894	31	3,340	37	1,729	28	2,045	33	1,234	21	1,614	27
30A/B	824	22	807	22	599	17	572	17	336	17	391	20
30A	454	24	429	23	316	18	303	17	158	14	177	16
30B	370	21	378	21	284	16	269	16	179	20	214	24
39	1,279	28	1,314	29	882	17	975	19	360	17	450	21
41	1,240	39	1,341	40								
51	1,056	44	1,135	47	565	35	622	38	339	39	366	42
53	1,258	48	1,266	48	727	49	836	54	360	46	388	48
54	775	36	869	40	465	30	597	38	222	22	318	31
55	415	19	437	20	211	14	300	19	167	11	245	16
56	919	27	1,121	34	1,046	29	1,104	31	648	20	719	22
57	583	14	612	15	302	10	293	10	134	8	168	9
58	687	25	726	24	429	23	542	29	351	20	452	25

Q2 Comparison - Average Daily Boardings by Route												
Route	Weekday				Saturday				Sunday			
	18/19		19/20		18/19		19/20		18/19		19/20	
	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr
59	1,939	25	2,059	26	772	33	887	38	509	22	610	26
60	2,698	35	2,850	37	1,861	46	2,147	53	1,264	44	1,471	50
61	2,249	29	2,321	30	1,123	29	1,305	33	896	23	1,129	30
62	781	25	812	26	580	25	596	26	269	17	296	18
63	742	41	807	46								
64	438	30	605	33								
65	225	14	258	15	93	7	100	8	46	7	64	10
66	1,525	25	1,614	26	503	32	529	33	284	18	403	25
68	1,295	26	1,378	28	775	27	885	31	496	18	619	22
72	1,324	28	1,458	32	971	20	1,148	24	462	17	564	21
80	4,291	34	4,572	36	3,542	34	3,844	36	2,606	28	3,010	33
81	1,350	26	1,472	28								
82	915	20	962	21	230	10	238	11	88	8	105	9
83	153	12	158	12	89	9	99	11	34	7	47	10
87	1,265	28	1,311	29	1,137	23	1,241	25	487	16	598	20
88	90	16	111	19	64	12	69	13	21	9	21	9
89	468	21	607	28								
90	1,290	27	1,440	30	833	18	1,060	23	459	18	539	21
400	194	15	197	15	82	12	76	11	64	9	63	8
401	165	13	164	13								
433	60	11	56	11								
Alderney	5,152	172	5,423	181	6,091	348	7,953	454	3,989	228	4,942	282
Woodside	2,388	114	2,582	123								

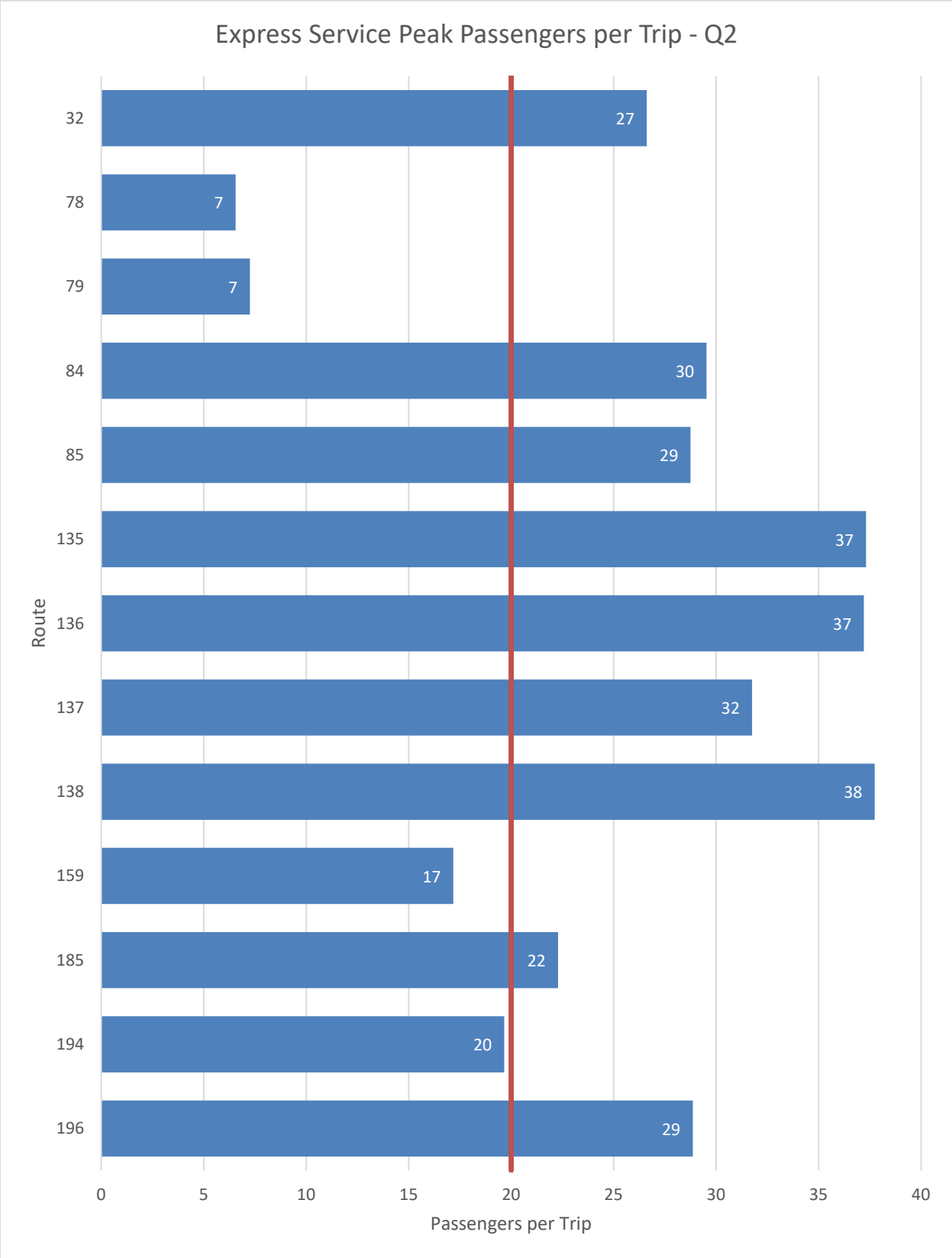
Express Service Peak Boardings and Passengers per Trip

Q2 Comparison - Average Daily Peak Boardings by Route				
Route	Weekday			
	18/19		19/20	
	Boardings	Pass/Trip	Boardings	Pass/Trip
32	436	24	481	27
78	81	6	105	7
79	87	7	93	7
84	810	28	827	30
85	99	25	115	29
123	231	18	291	20
135	466	33	524	37
136	546	34	595	37
137	327	27	381	32
138	447	32	529	38
159	481	16	515	17
185	657	21	715	22
194	123	15	158	20
196	110	28	115	29
320	210	16	227	19
330	325	13	358	17
370	117	8	98	9

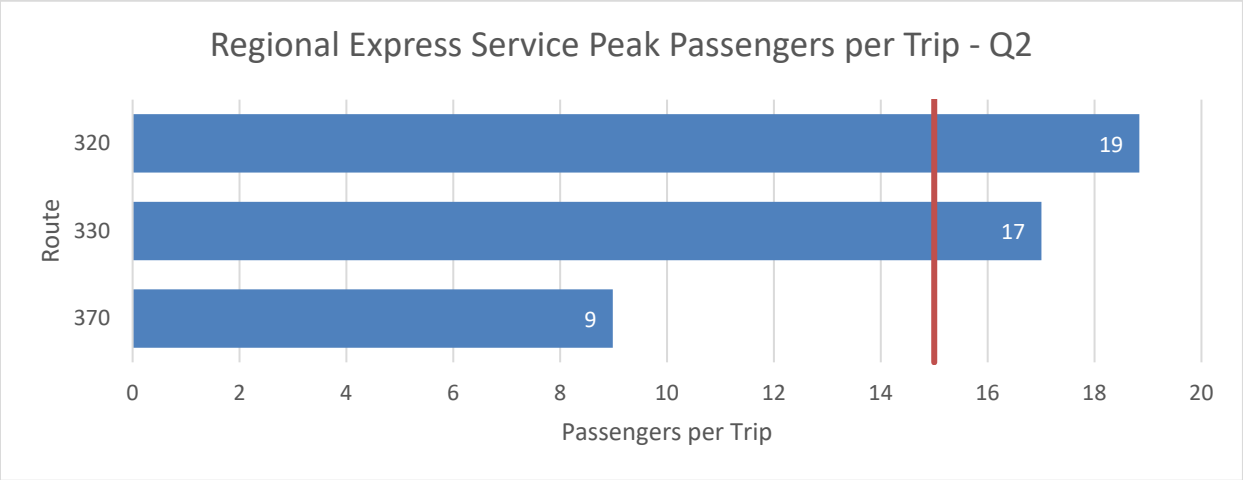
Passengers per Hour by Route



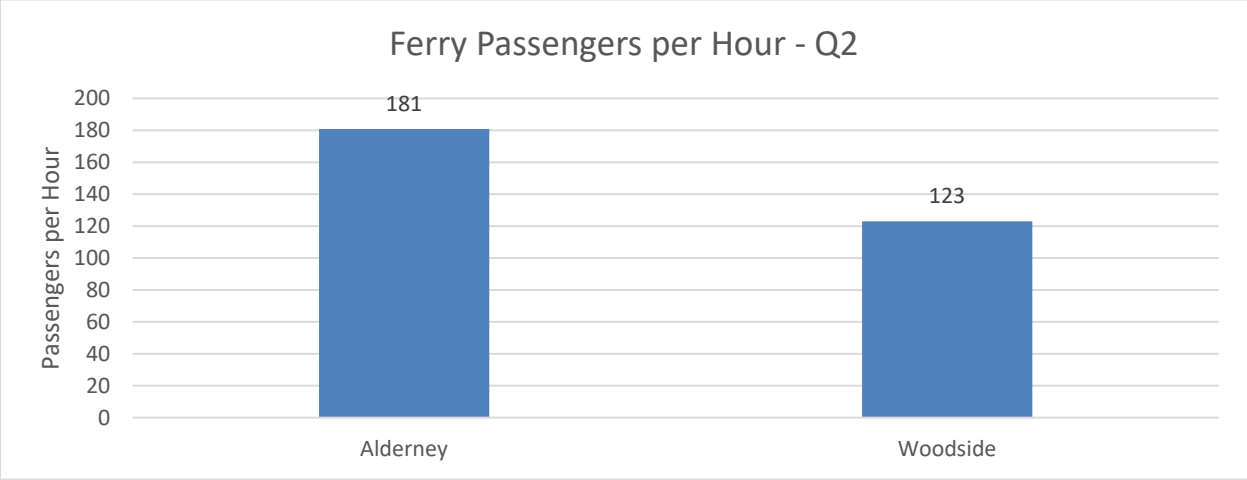
Express Service Peak Passengers per Trip by Route



Regional Express Peak Passengers per Trip by Route



Ferry Passengers per Hour



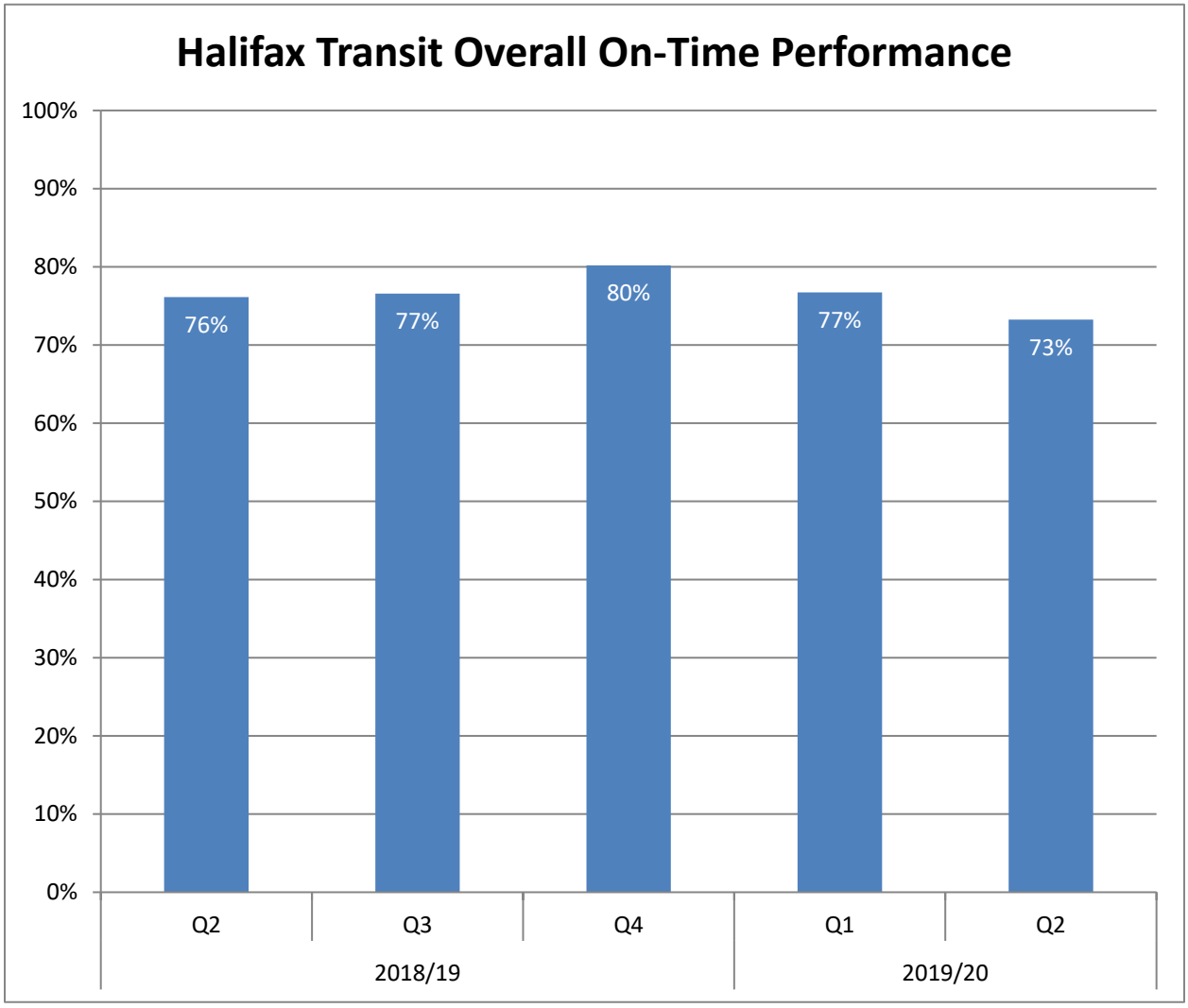
On-Time Performance

On-time performance is a measure of route reliability and is tracked monthly to demonstrate schedule adherence across the network of routes. Terminals and select bus stops along each route are classified as time-points and have assigned and publicized scheduled arrival times. On-time performance demonstrates the percentage of observed time-point arrivals that are between one minute early and three minutes late.

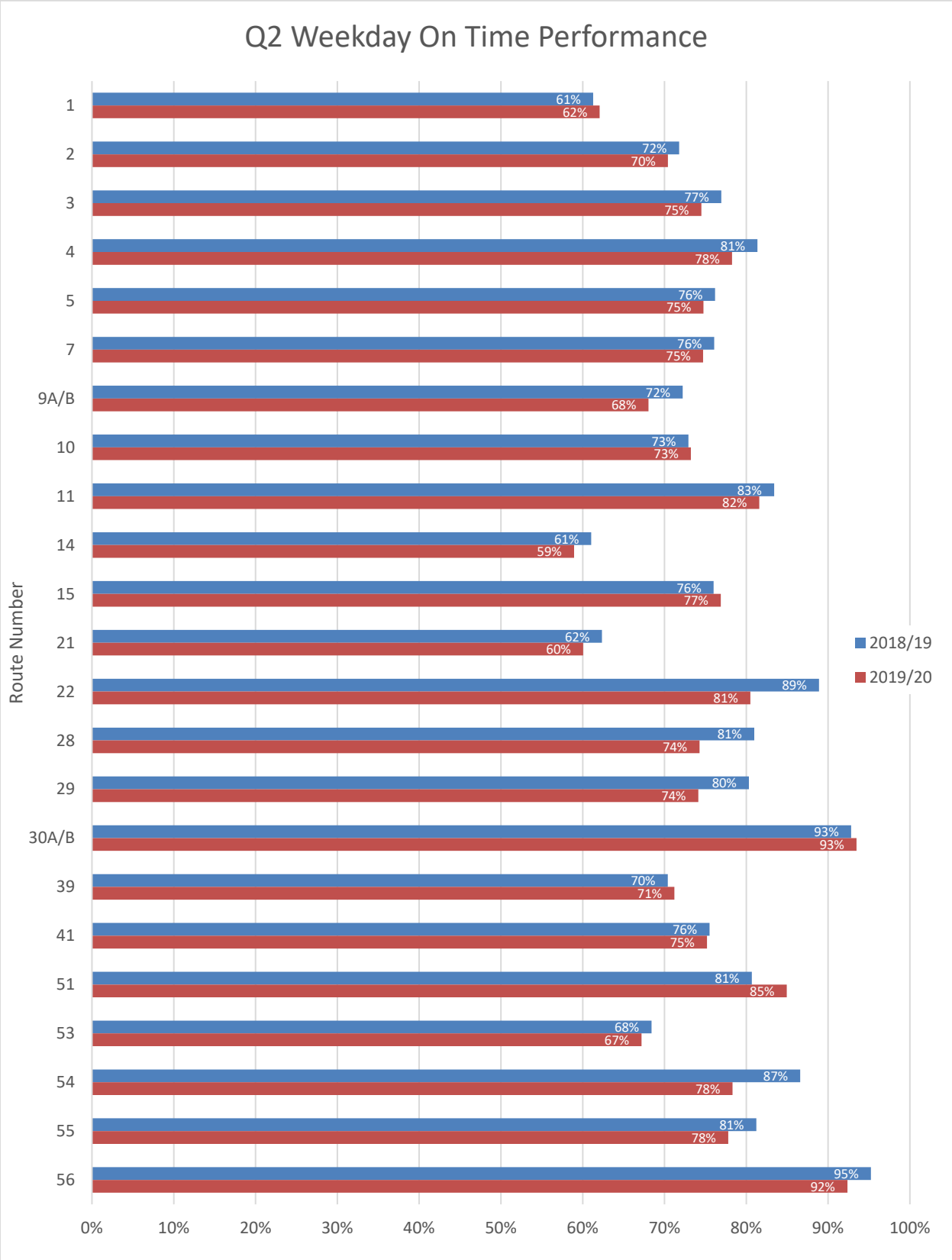
Transit industry standard targets for on-time performance tend to range between 85% and 90%, although service types are not always comparably grouped, nor are schedule adherence definitions consistent between agencies. Halifax Transit will analyze on-time performance across the network in order to establish a benchmark and target for the minimum percentage of trips to depart on time.

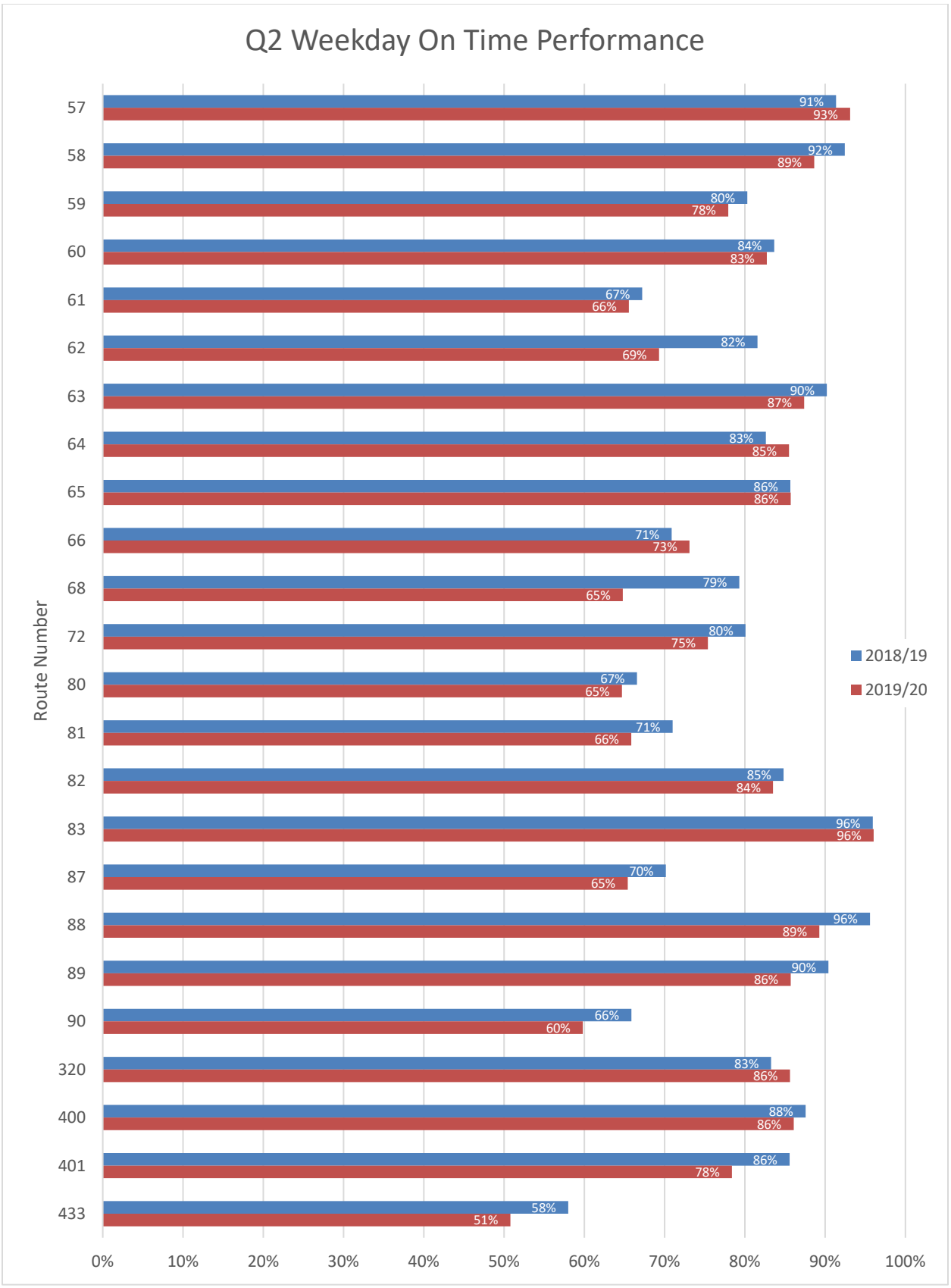
Compared to the second quarter last year, on-time performance dropped from 76% to 73%. This included the implementation of new routes in August 2018, some of which were on new streets where previous transit data was unavailable. The schedule of some of these routes will be adjusted in November 2019 in order to improve the on time performance now that one year of data has been collected and analyzed.

Overall Network On-Time Performance

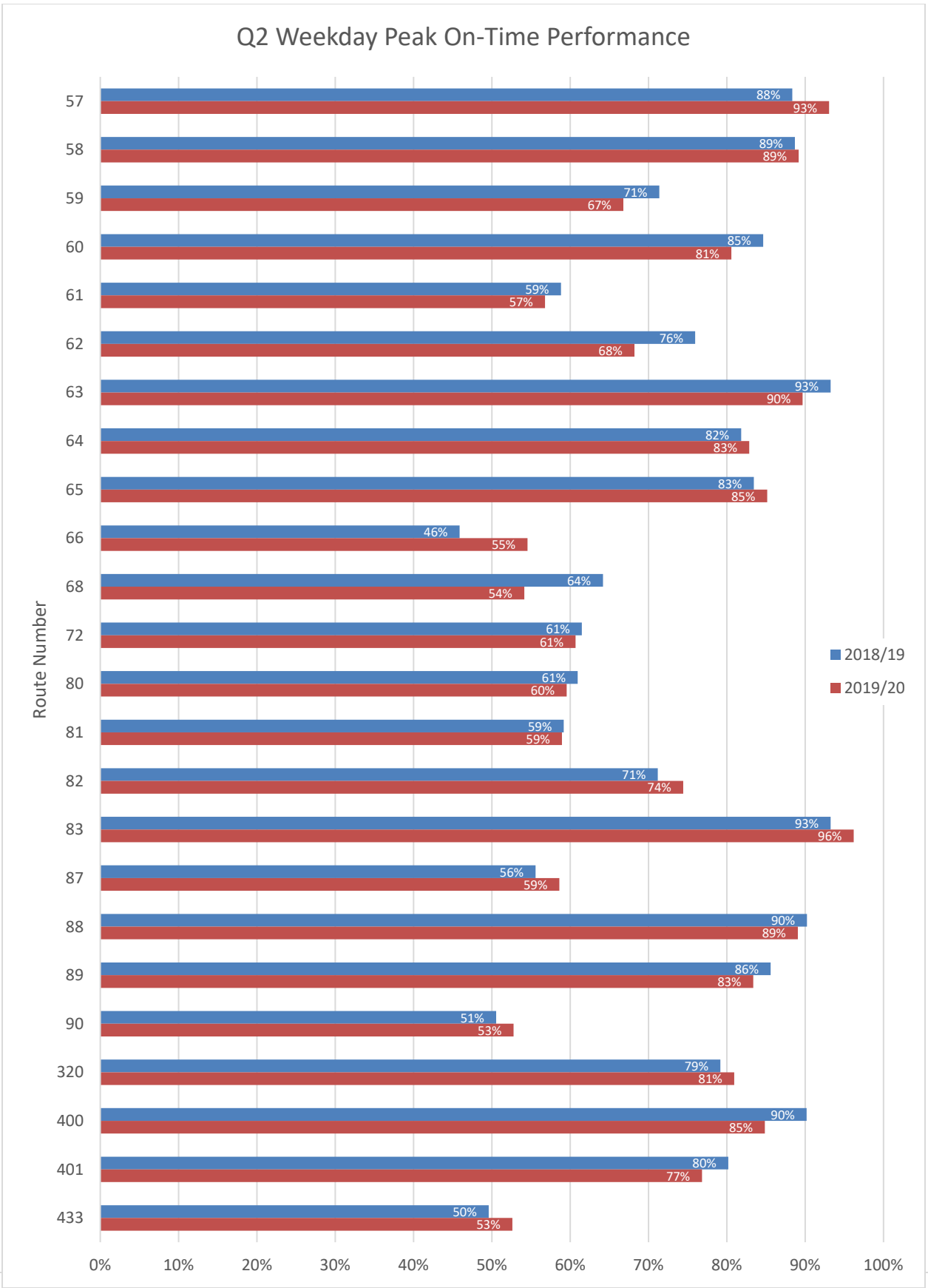


Weekday On-Time Performance




Q2 Weekday On Time Performance
Route Number
57 91% 93%
58 92% 89%
59 80% 78%
60 84% 83%
61 67% 66%
62 82% 69%
63 90% 87%
64 83% 85%
65 86% 86%
66 71% 73%
68 79% 65%
72 80% 75%
80 67% 65%
81 71% 66%
82 85% 84%
83 96% 96%
87 70% 65%
88 96% 89%
89 90% 86%
90 66% 60%
320 83% 86%
400 88% 86%
401 86% 78%
433 58% 51%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
2018/19
2019/20

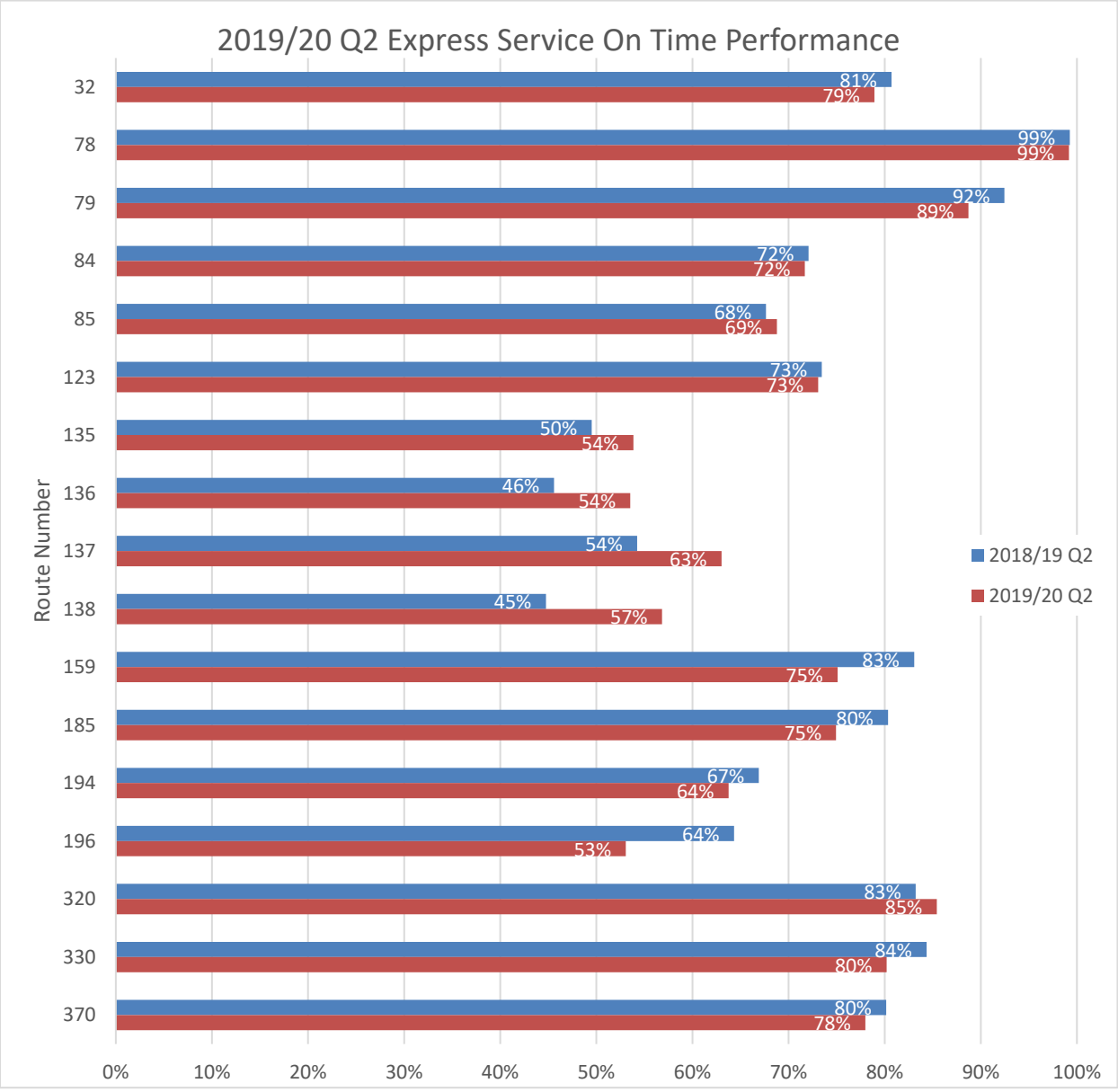
Weekday Peak Period On-Time Performance


Q2 Weekday Peak On-Time Performance
Route Number
57 88% 93%
58 89% 89%
59 71% 67%
60 85% 81%
61 59% 57%
62 76% 68%
63 93% 90%
64 82% 83%
65 83% 85%
66 46% 55%
68 64% 54%
72 61% 61%
80 61% 60%
81 59% 59%
82 71% 74%
83 93% 96%
87 56% 59%
88 90% 89%
89 86% 83%
90 51% 53%
320 79% 81%
400 90% 85%
401 80% 77%
433 50% 53%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
2018/19
2019/20

Express Service On-Time Performance

On-time performance demonstrates the percentage of time-point arrivals that are between one minute early and three minutes late. When route schedules are created, the variability of travel times between timepoints is taken into account. Generally, routes are scheduled at the higher end of observed travel times in order to be on time. This means that on some trips, buses will layover at timepoints to avoid departing early. Schedules for express routes were created based on shorter travel times to keep buses moving toward destinations and prevent them from laying over.

The graph below demonstrates on-time performance for express routes based on timepoints at the beginning and end of the routes, as well as any terminals and park and rides. This includes Scotia Square, Summer Street, and the future Wrights Cove Terminal location on Marketplace Drive, but does not include other on-street timepoints.



Loss Of Service

Loss of service is the total number of scheduled service hours that were not completed. If a trip was able to be filled or partially filled by a standby bus, that time would not be included in this figure. In the second quarter, the total loss of service was 3675 hours and 25 minutes, this equates to 1.77% of the revenue hours for the quarter. Halifax Transit cancelled service in response to Hurricane Dorian September 7th and 8th, when this data is removed, the loss of service total for the quarter is 2739 hours and 45 minutes which is 1.32% of the quarterly revenue hours. The table below shows the total loss of service for each month in the light red with the impact of Hurricane Dorian in the dark red.