2019/20 – Q1
Performance Measures Report

HALIFAX
TRANSIT

Contents

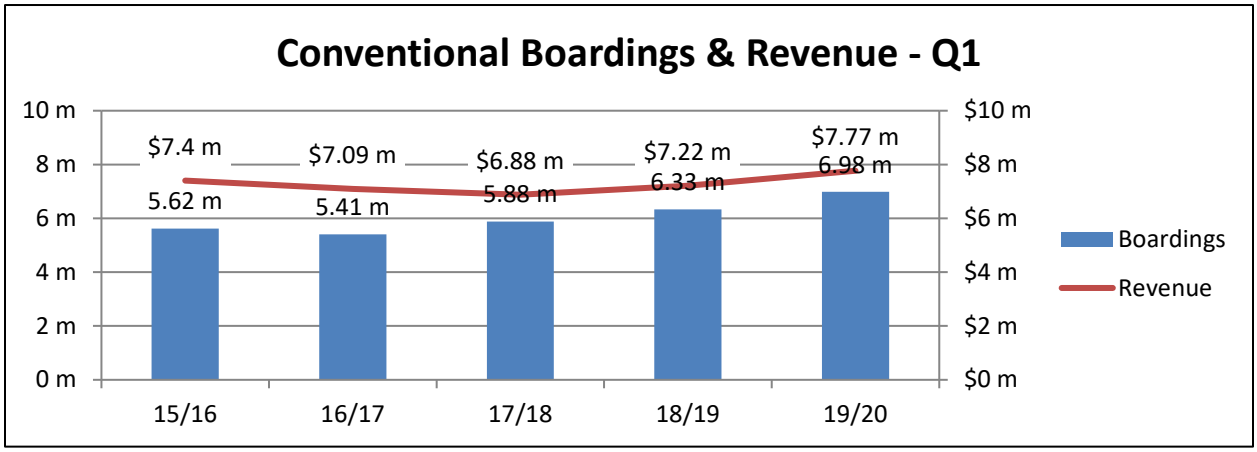
Boardings & Revenue

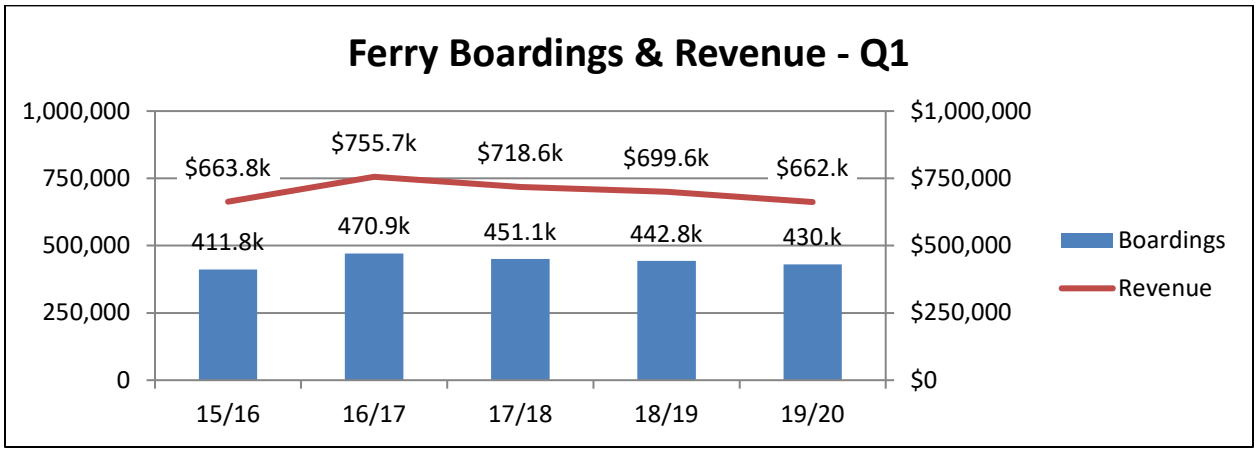
Revenue and boardings are reported to demonstrate how well transit services were used over the quarter, in comparison to the same quarter the previous year.

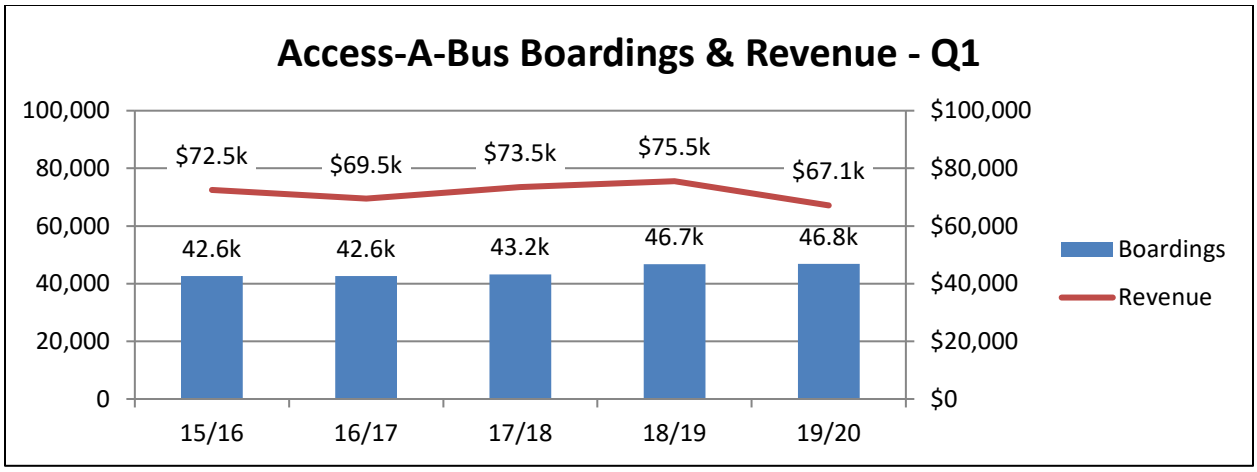
By installing Automatic Passenger Counter (APC) systems throughout the network in the 2017/18 fiscal year, Halifax Transit is now able to track the number of boardings by counting passengers entering the bus at each stop, instead of estimating boardings from revenue. Therefore, the data source for boardings 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.

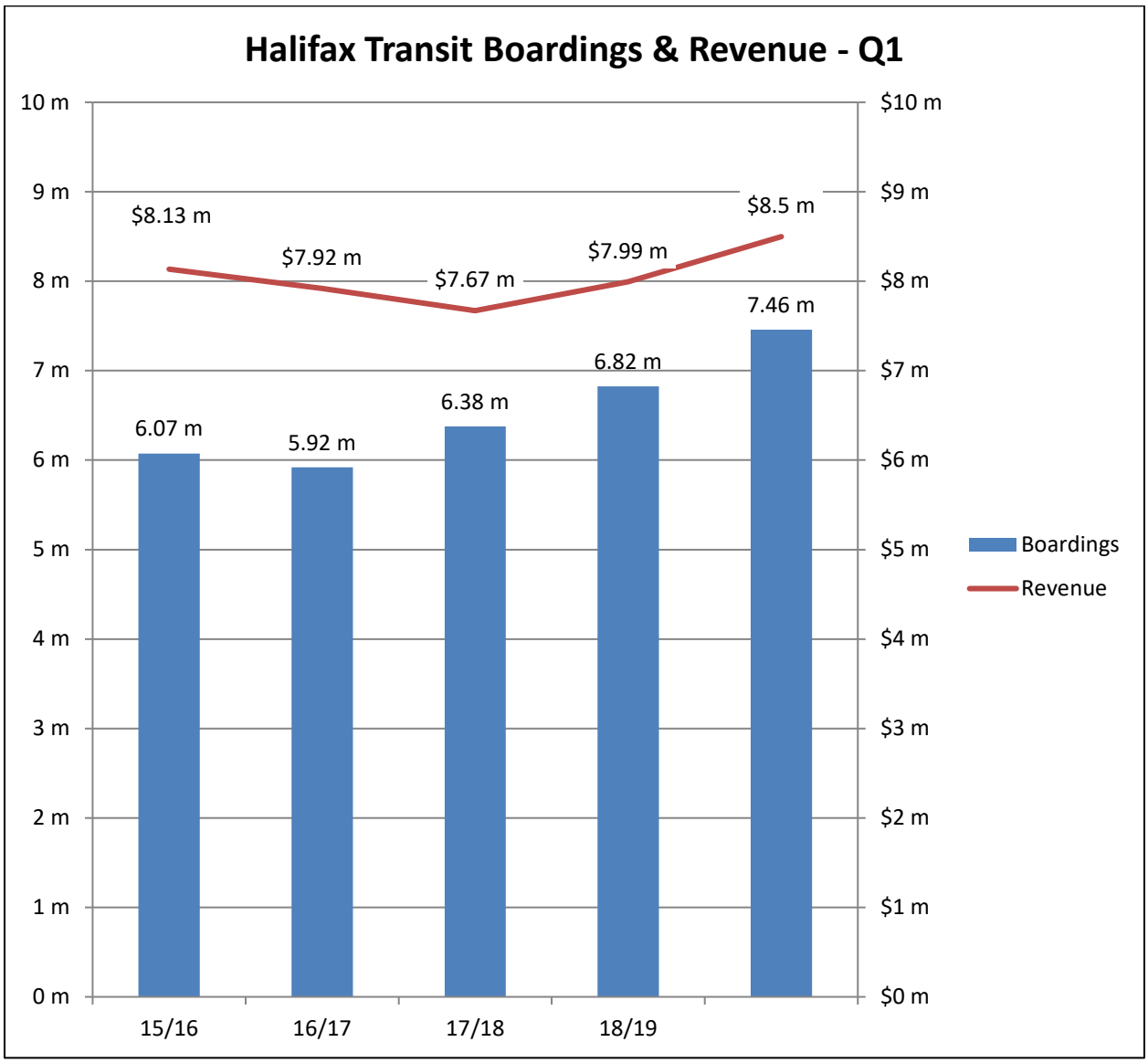
In the first quarter, Conventional boardings increased 10% from this quarter last year, Ferry boardings dropped 2.9% and Access-A-Bus boardings increased slightly by 0.2%. Overall, system wide boardings increased this quarter by 9.3% compared to last year. Overall revenue this quarter increased 6.3% 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



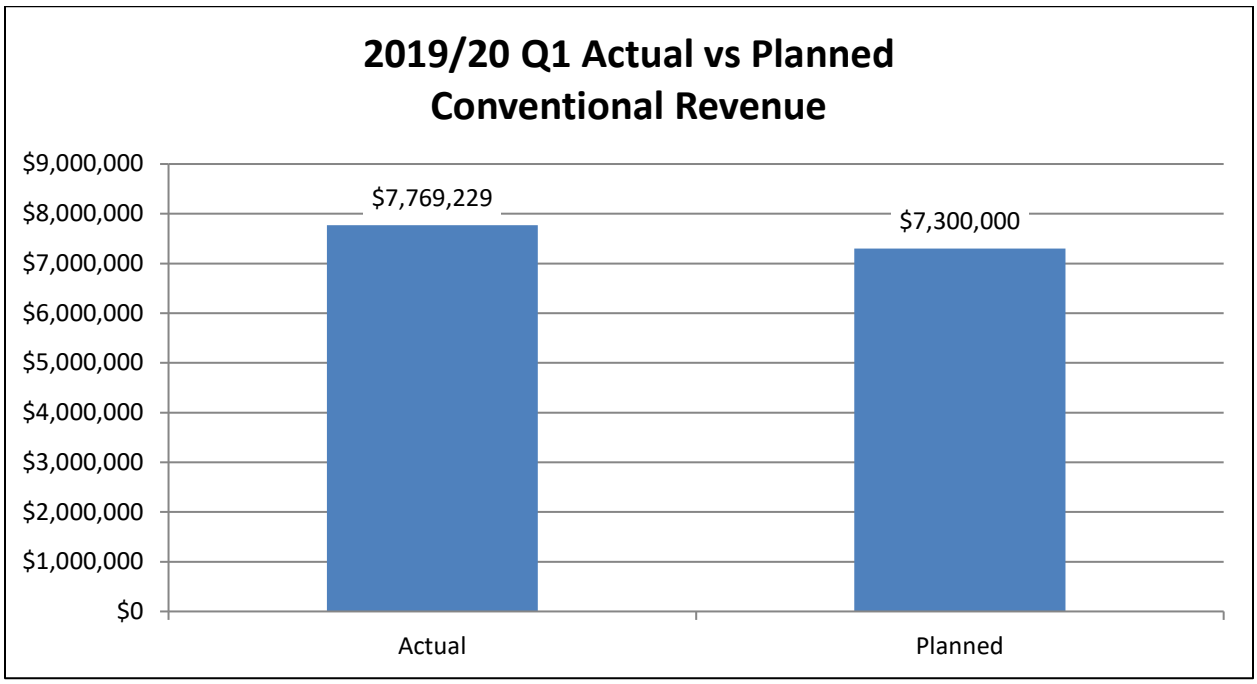


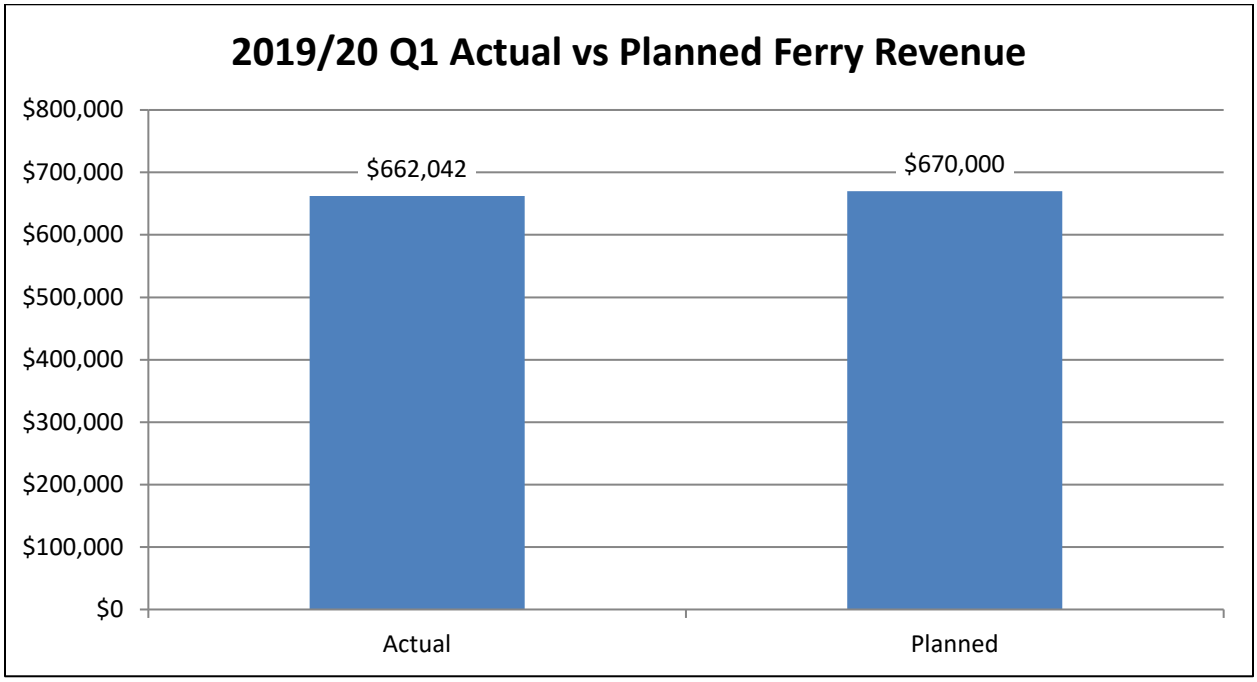

Access-A-Bus Boardings & Revenue - Q1
100,000
80,000
60,000
40,000
20,000
0
$100,000
$80,000
$60,000
$40,000
$20,000
$0
$72.5k
$69.5k
$73.5k
$75.5k
$67.1k
42.6k
42.6k
43.2k
46.7k
46.8k
15/16
16/17
17/18
18/19
19/20
Boardings
Revenue

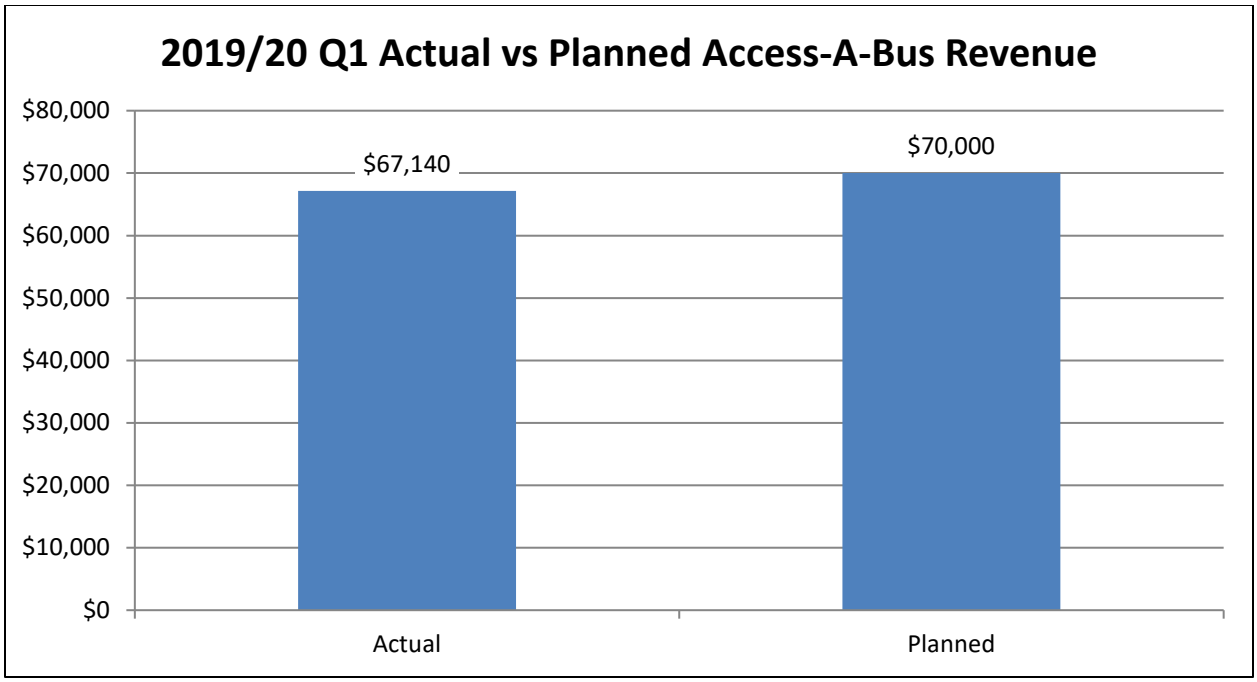

Halifax Transit Boardings & Revenue - Q1
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
1 m
0 m
$10 m
$9 m
$8 m
$7 m
$6 m
$5 m
$4 m
$3 m
$2 m
$1 m
$0 m
$8.13 m
$7.92 m
$7.67 m
$7.99 m
$8.5 m
6.07 m
5.92 m
6.38 m
6.82 m
7.46 m
15/16
16/17
17/18
18/19
Boardings
Revenue

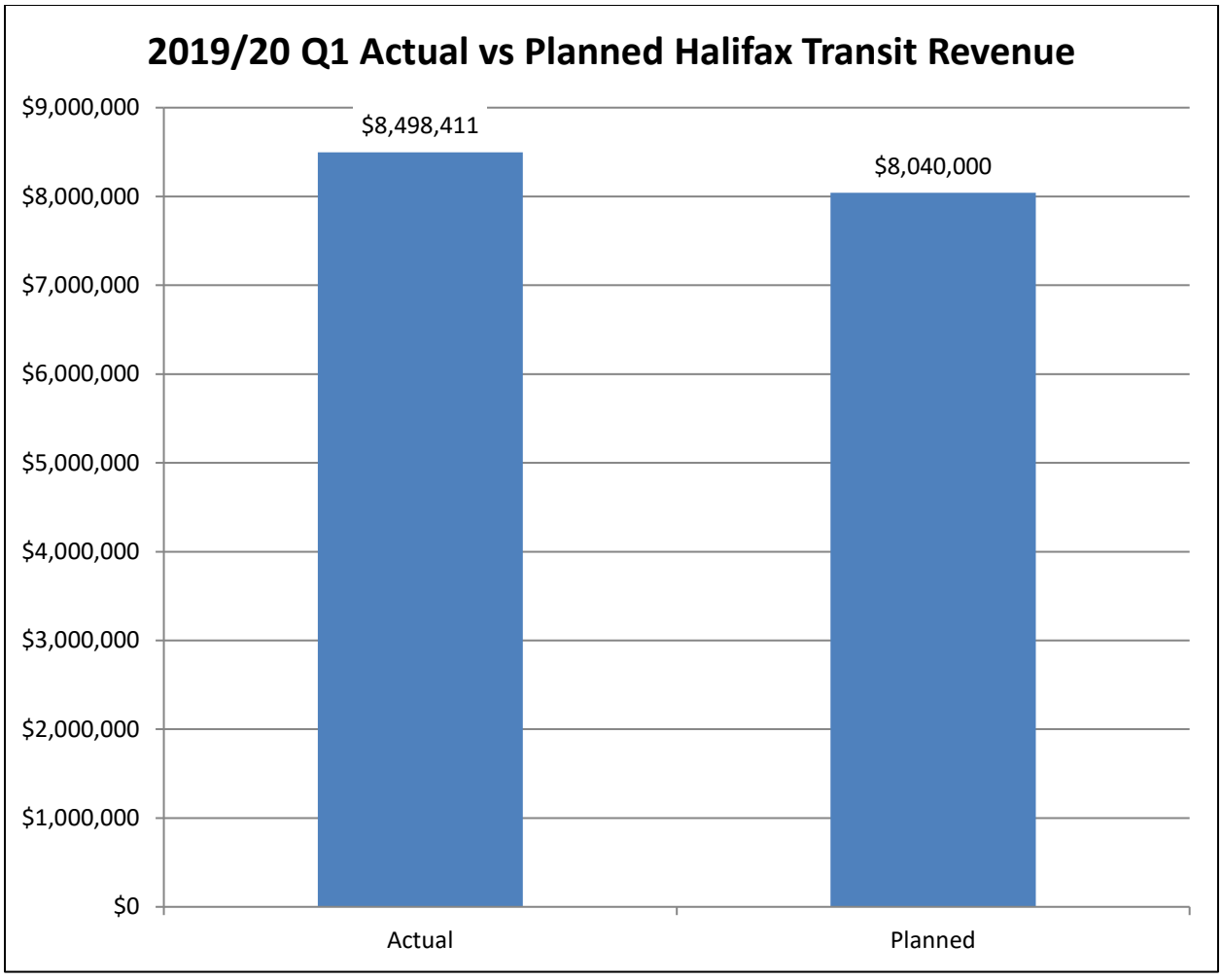
Revenue – Actual vs. Planned

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 first quarter increased 7.6% from this time last year and is trending 6% above the planned amount. Ferry revenue to date decreased 5.4% from last year and is trending 1.2% below the planned amount. Access-A-Bus revenue to date has decreased 11% and is trending 4.3% below the planned amount. Overall revenue to date has increased 6.3% from this time last year and stands at 5.4% higher than the planned amount.






2019/20 Q1 Actual vs Planned Access-A-Bus Revenue
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
$67,140
$70,000
Actual
Planned


2019/20 Q1 Actual vs Planned Halifax Transit Revenue
$9,000,000
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
$8,498,411
$8,040,000
Actual
Planned

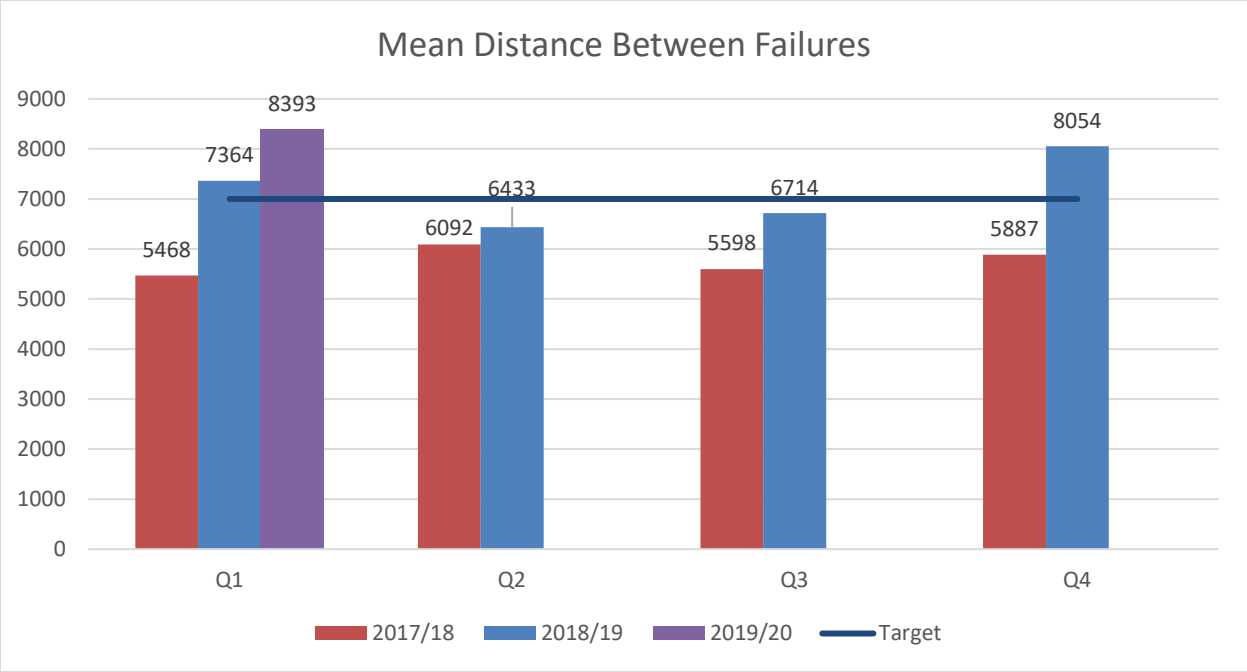
Mean Distance Between Failures

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 has been successfully met, the target in 2018, we will be increasing the target 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.

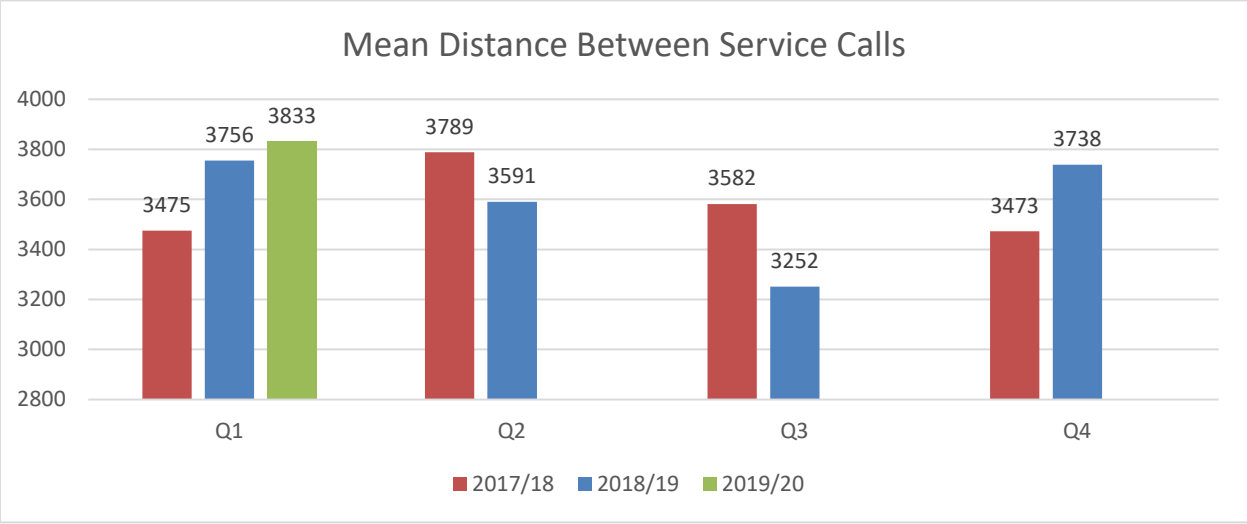
For the first quarter of 2019, the MDBF for conventional transit was 8,393 kms. This is equivalent to a 13.97% improvement from the first quarter of previous year (2018). Bus Maintenance will continue to monitor this KPI and further develop quality initiatives to decrease aftertreatment and cooling system defects.



Mean Distance Between Service Calls

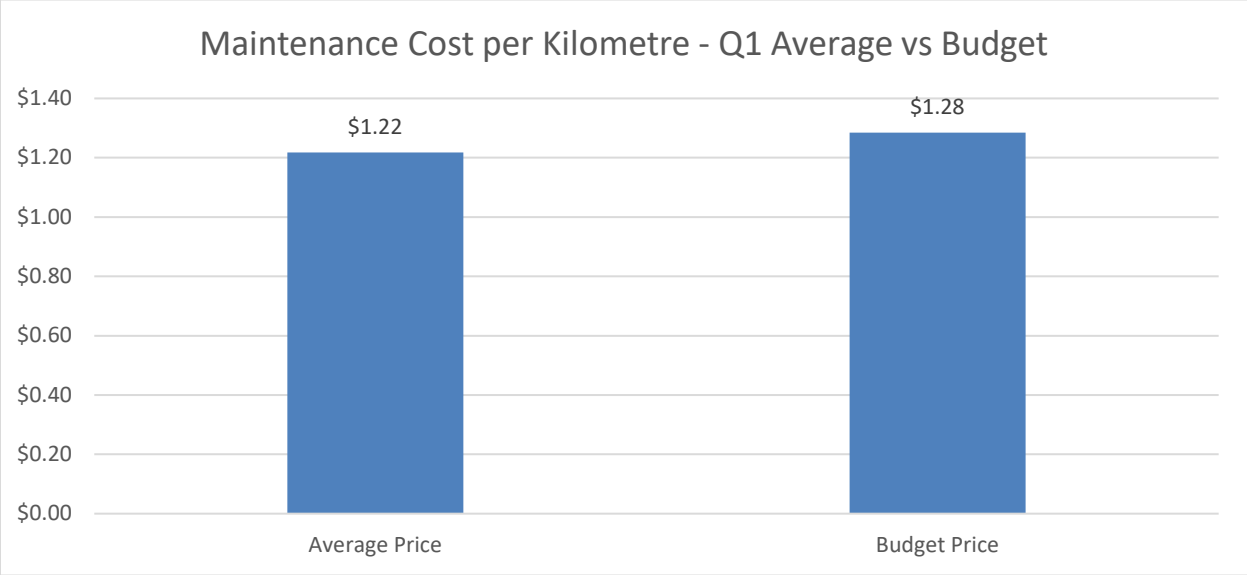
In order to continue monitoring the number of maintenance service calls, this will be reflected as a separate metric; Mean Distance Between Service Calls (MDBS). This number will reflect the distance in kilometres covered on average between maintenance service calls. This number includes all instances 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 first quarter of 2019, the MDBS for conventional transit was 3,833 kms. In comparison to the first quarter of 2018/19 (3,756 kms), this is an improvement of 2%. For the first quarter of 2019, the MDBS for Access-A-Bus service was 38,879 kms. Bus Maintenance will continue to monitor this metric in order to reduce service calls.



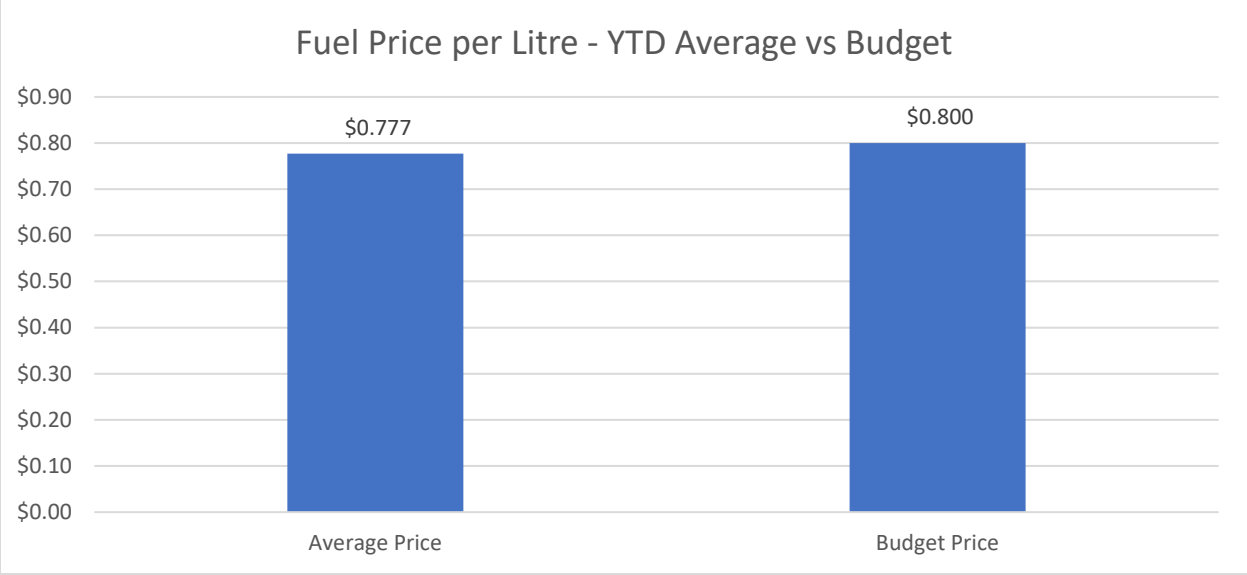
Bus Maintenance Cost – Quarter Average vs Budget

In the first quarter maintenance costs were $1.22/km, while the budgeted maintenance cost was $1.28/km. Therefore, in the first quarter the average cost per km was under budget by $0.07/km or 5.5%.



Fuel Price – Year to Date Average vs Budget

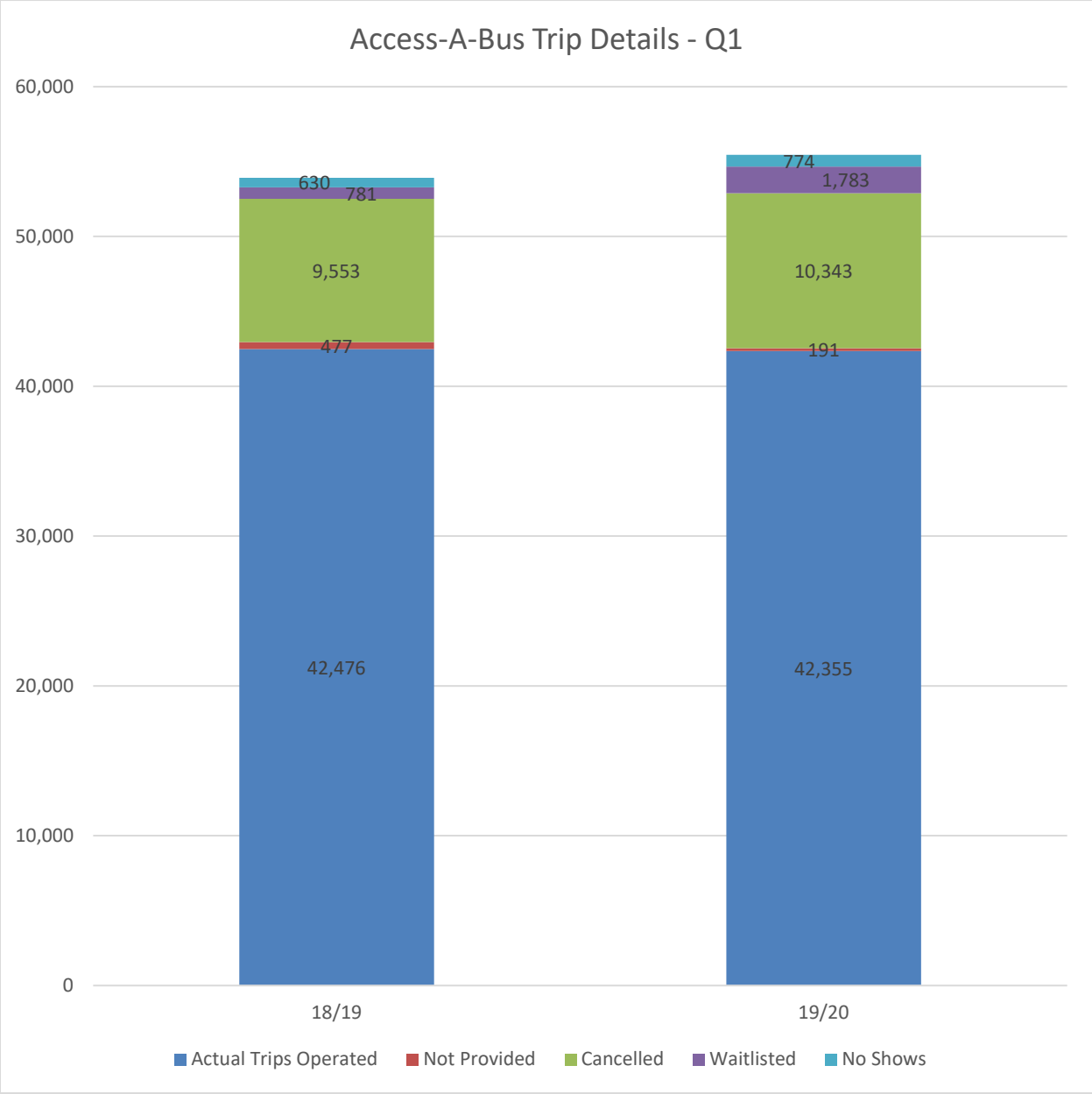
The budgeted fuel price for 2019/20 was set at 80 cents/litre. In the first quarter, the average fuel price to date was 78 cents/litre, 2 cents lower than the budgeted cost per litre.



Access-A-Bus Trip Details

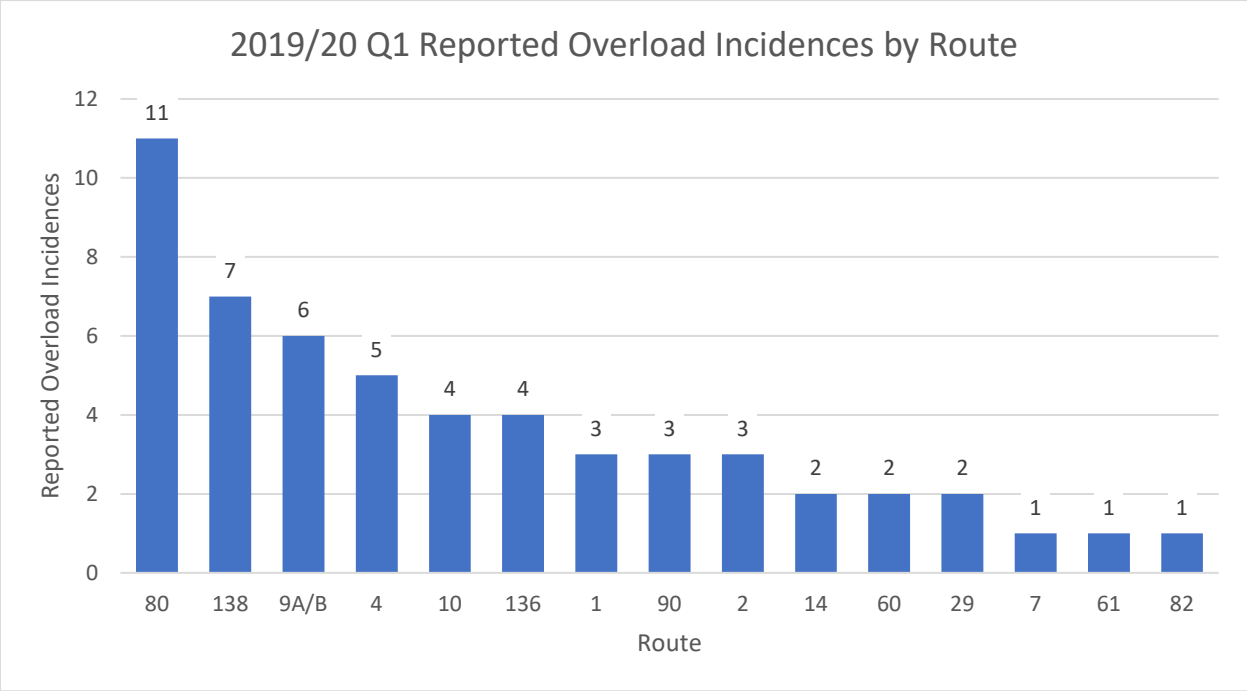
Access-A-Bus trip details are tracked monthly to provide an indication of efficiency in Access-A-Bus usage and booking. In April 2018 Access-A-Bus completed a scheduling software upgrade and process improvement review. After introducing these new, standardized processes, scheduling effectiveness has 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.

In the first quarter of 2019/20, 121 fewer trips were operated compared to first quarter last year, a decrease of 0.3%. The waitlist increased by 128% this quarter compared to last year, due to an increase in late cancellations and no shows. No shows and late cancellations are particularly challenging to fill, having little to no time to fill these bookings with passengers from the waitlist.



Passenger Overloads

Halifax Transit tracks overloads that are reported to help match scheduling requirements to passenger demands. The following graph shows the most commonly overloaded routes during the quarter. This does not include all overloads, as many go unreported for a number of reasons. Work is underway to improve the reporting process to ensure the data provides a more accurate reflection of actual conditions.

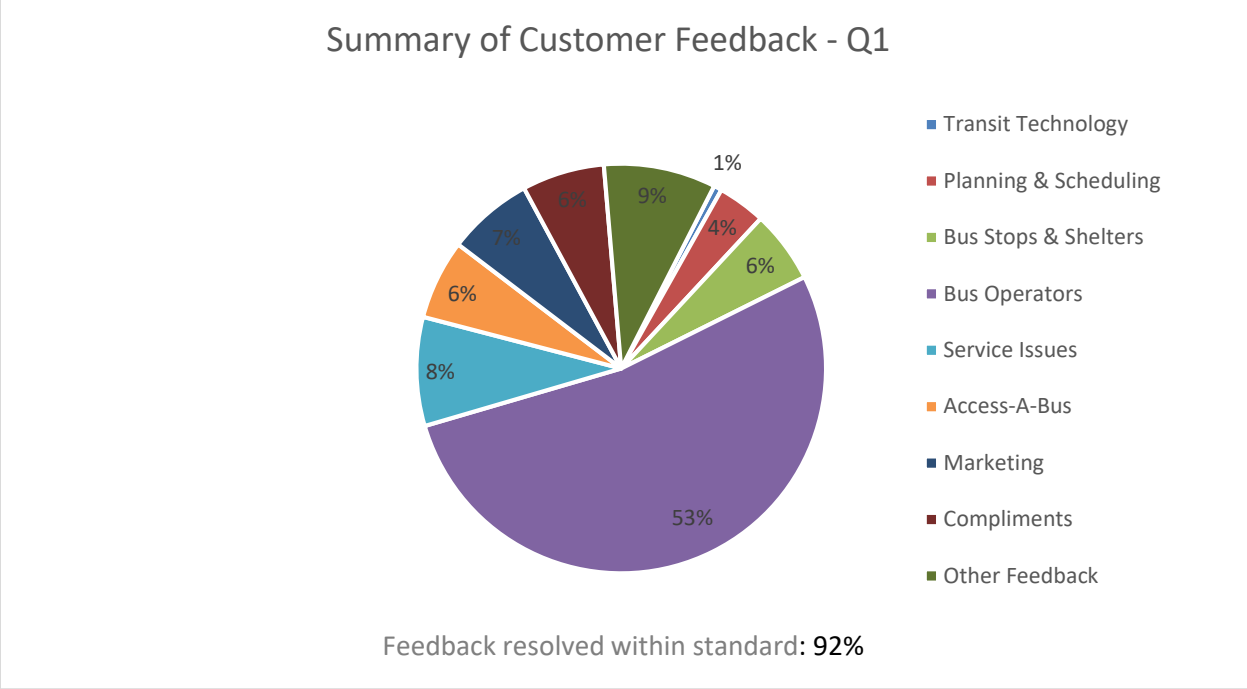


Customer Service – All Services

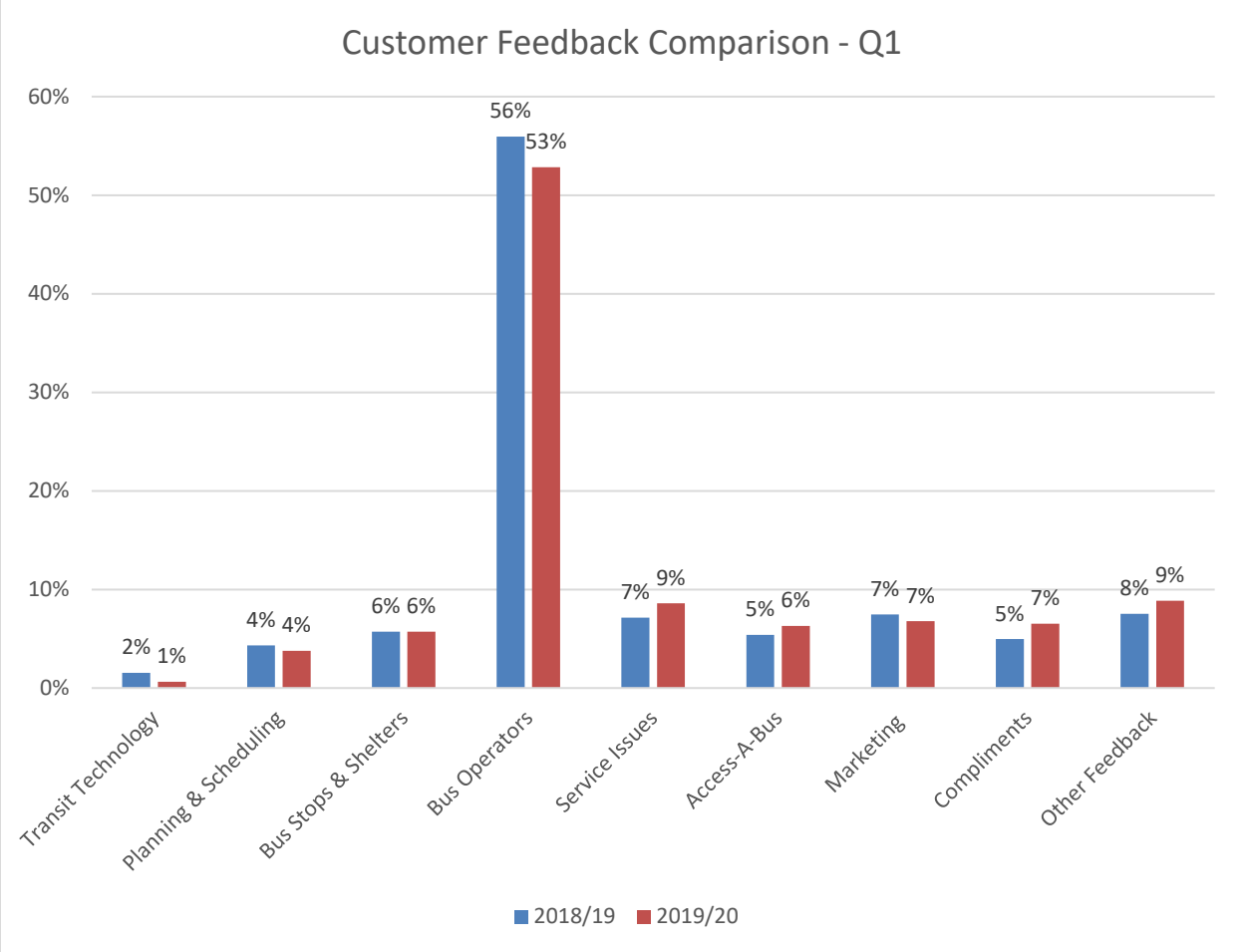
Customer service statistics are measured monthly using the Hansen Customer Relationship Management software along with Crystal Reports. Feedback is first categorized by subject matter and then divided into two categories: feedback resolved within service standard and feedback resolved outside service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

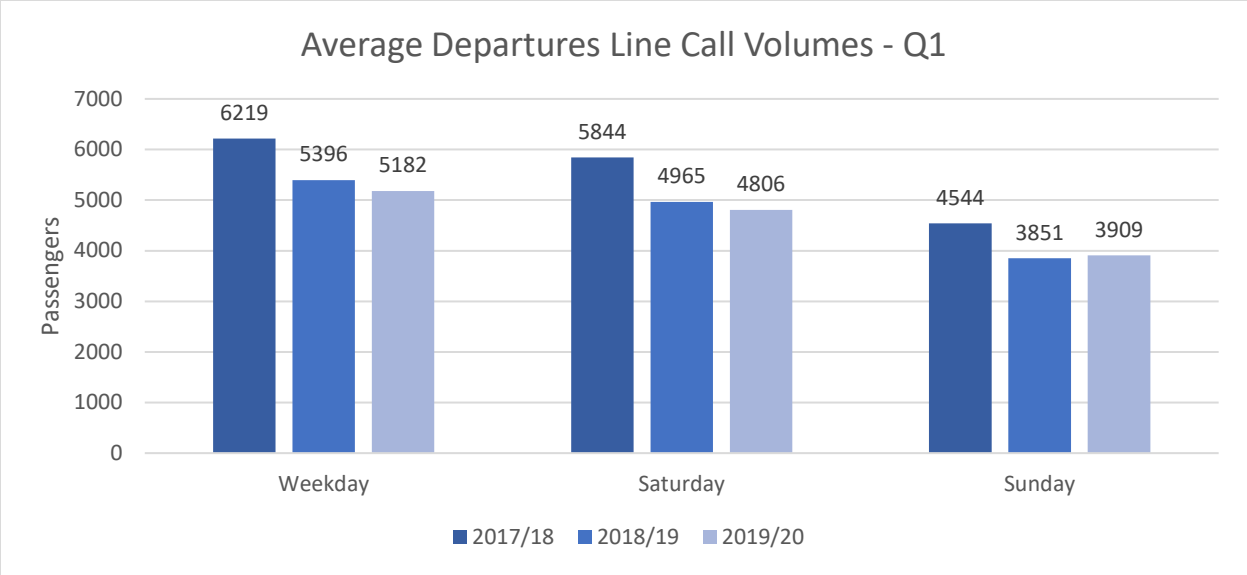
This quarter, 53% of feedback received was related to bus operators, the remaining 47% is comprised of feedback regarding service issues, planning and scheduling, bus stops and shelters, marketing, compliments and other miscellaneous comments. Halifax Transit aims to address 90% of feedback within service standard. This quarter 92% 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 first quarter of 2019/20, average call volumes were lower than this time last year for both weekdays as well as for Saturdays and Sundays.



Feedback resolved within standard: 92%





Boardings & Passengers per Hour

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 first quarter were 97,169 ± 6,790 (7.0% variance). Average Saturday boardings this quarter were 55,490 ± 5,791 (10.4% variance). Average Sunday boardings this quarter were 38,803 ± 5,648 (14.6% variance).

New routes implemented on August 20, 2018 as part of the *Moving Forward Together Plan* are not comparable to individual routes they have replaced and as such are not compared by route. Boardings by route comparisons for the following routes will resume in the second quarter of 2019/20.

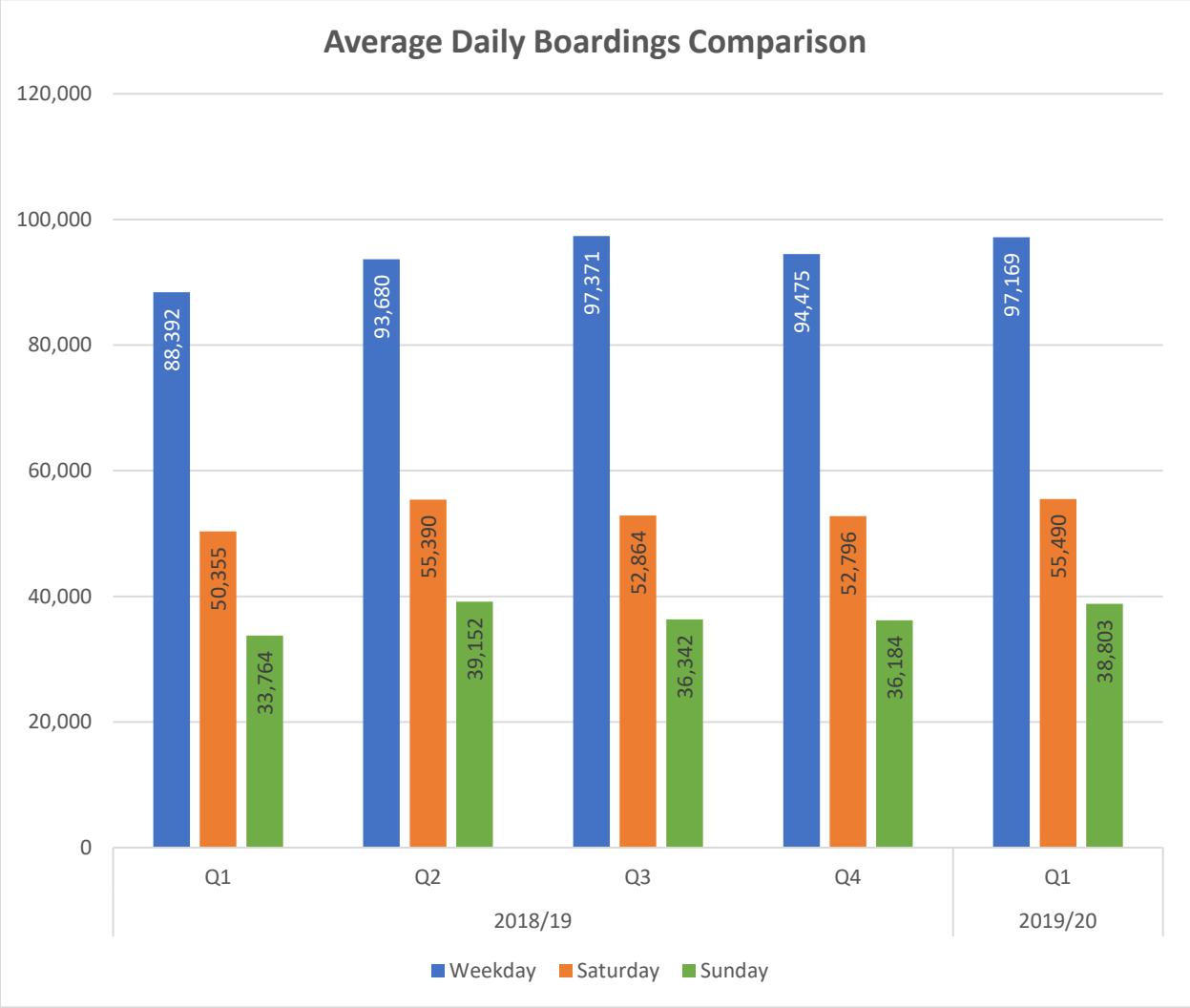
Corridor Routes:
- 2 Fairview
- 3 Crosstown
- 4 Universities

Local Routes:
- 21 Timberlea
- 28 Bayers Lake
- 30 Clayton Park West
- 39 Flamingo

Express Routes:
- 123 Timberlea Express
- 135 Flamingo Express
- 136 Farnham Gate Express
- 137 Clayton Park Express
- 138 Parkland Express

Rural Route:
- 433 Tantallon

Average Daily Boardings by Service Day



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

Q1 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	9,265	59	9,610	62	7,169	64	8,044	70	4,914	58	4,595	53
2 (new)			4,717	44			4,535	45			2,303	30
2 (removed)	2,600	43			2,023	38			1,009	33		
3 (new)			6,587	44			3,767	44			3,412	36
4 (new)			4,468	36			2,117	42			1,549	34
4 (removed)	2,296	38			1,787	31			1,124	35		
5	114	31	114	27								
7	4,569	40	5,026	45	3,205	34	3,741	40	1,845	36	1,870	35
9A/B	5,882	34	6,864	41	3,335	45	4,085	56	2,521	35	2,710	38
9A	3,946	36	4,644	43	1,643	46	1,944	55	1,119	32	1,152	33
9B	1,936	31	2,220	38	1,692	44	2,141	56	1,402	38	1,558	42
10	4,467	41	4,681	44	2,739	37	3,487	47	1,799	37	1,913	39
11	93	40	128	53								
14	2,327	37	2,484	39	1,135	34	1,367	40	1,007	35	935	31
15	208	14	215	14	129	11	162	16	126	10	148	12
16 (removed)	1,091	23			659	15						
17 (removed)	1,139	29										
18 (removed)	1,625	27			1,287	26			694	27		
21	1,180	27	1,002	34	672	18	869	25	323	18	475	26
22	555	16	648	20	456	13	488	15	331	9	365	11
23 (removed)	361	20										
28 (new)			1,429	39			1,445	35			575	31
29	2,608	28	3,154	35	1,488	24	1,974	32	1,224	20	1,268	21
30A/B (new)			852	24			580	17			299	15
30A (new)			469	25			304	18			129	11
30B (new)			383	22			276	16			170	20
39 (new)			1,194	26			937	19			384	18
41	1,128	38	1,264	38								
42 (removed)	1,136	31										
51	1,024	43	1,108	47	584	35	618	37	315	37	305	34

Q1 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
52 (removed)	5,841	49			4,092	43			3,781	43		
53	1,304	50	1,271	50	787	52	837	55	384	50	333	40
54	744	34	847	40	460	30	591	38	254	26	249	25
55	393	18	401	19	207	13	273	18	187	12	182	12
56	851	24	953	29	875	25	1,141	32	588	18	582	18
57	556	13	535	13	264	9	284	9	135	8	138	8
58	692	25	719	26	422	23	507	27	352	20	325	19
59	1,967	25	1,955	25	766	33	809	35	486	20	487	21
60	2,490	33	2,743	37	1,751	44	1,971	49	1,258	44	1,193	42
61	2,185	28	2,229	29	1,054	27	1,233	32	912	24	876	23
62	800	25	830	27	515	23	569	25	278	17	268	17
63	711	40	781	44								
64	323	30	587	32								
65	241	14	258	16	93	7	105	8	49	8	51	8
66	1,448	23	1,547	26	483	30	517	32	345	22	284	18
68	1,269	26	1,389	29	785	28	848	29	492	18	504	18
72	1,340	29	1,382	30	950	20	1,090	23	511	19	468	17
80	4,031	33	4,251	34	3,423	33	3,798	36	2,726	29	2,514	28
81	1,264	24	1,414	27								
82	962	21	980	21	228	10	248	11	101	9	98	9
83	154	12	149	11	85	9	92	10	45	10	40	9
87	1,324	30	1,256	28	1,034	21	1,237	25	543	18	523	18
88	80	14	94	16	57	11	75	14	20	9	22	9
89	436	19	529	25								
90	1,148	24	1,280	27	746	17	957	21	473	19	418	16
400	234	18	197	16	82	12	81	11	62	9	55	7
401	139	11	154	13								
433 (new)	168	23	51	10								
Alderney	3,427	114	3,350	112	4,114	235	4,049	231	2,170	124	2,879	165
Woodside	2,207	105	2,139	102								

Express Service Peak Boardings and Passengers per Trip

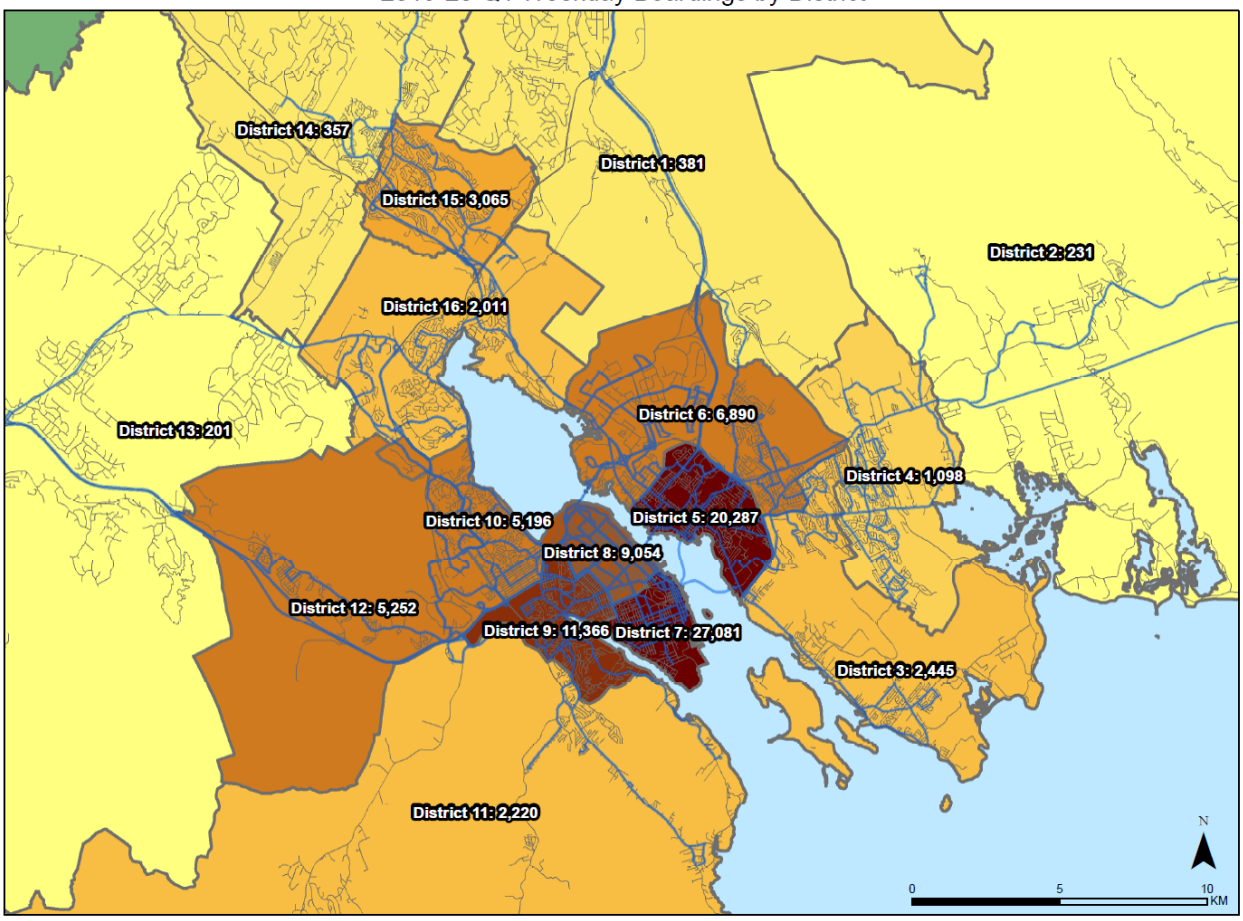
Q1 Comparison - Average Daily Peak Boardings by Route				
Route	Weekday			
	18/19		19/20	
	Boardings	Pass/Trip	Boardings	Pass/Trip
31 (removed)	275	31		
32	451	25	451	25
33 (removed)	153	38		
34 (removed)	680	40		
35 (removed)	260	29		
78	82	6	87	6
79	94	8	85	7
84	892	33	852	31
85	115	29	118	30
123 (new)			285	20
135 (new)			531	38
136 (new)			596	37
137 (new)			365	31
138 (new)			538	39
159	519	17	553	18
185	729	23	738	23
194	126	16	152	19
196	116	29	113	28
320	188	16	216	18
330	309	14	376	18
370	116	10	103	9

Boardings by District

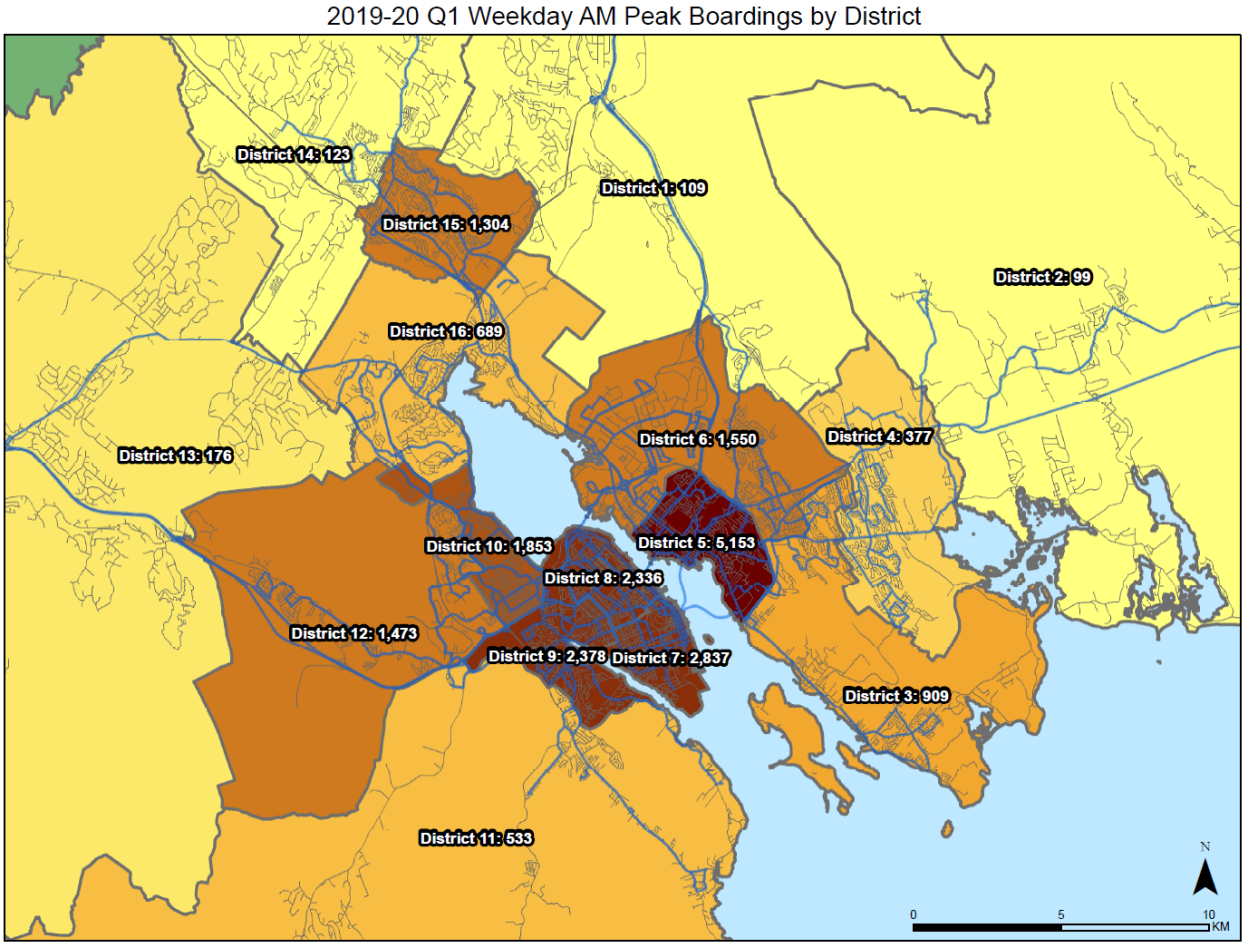
To assist in visualizing where ridership demands exist, boardings have been mapped by district. The all-day boardings map illustrates typical boardings over an entire service day, whereas the AM Peak Period map represents boardings during the morning peak period only and therefore generally illustrates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

Weekday Boardings by District – All Day

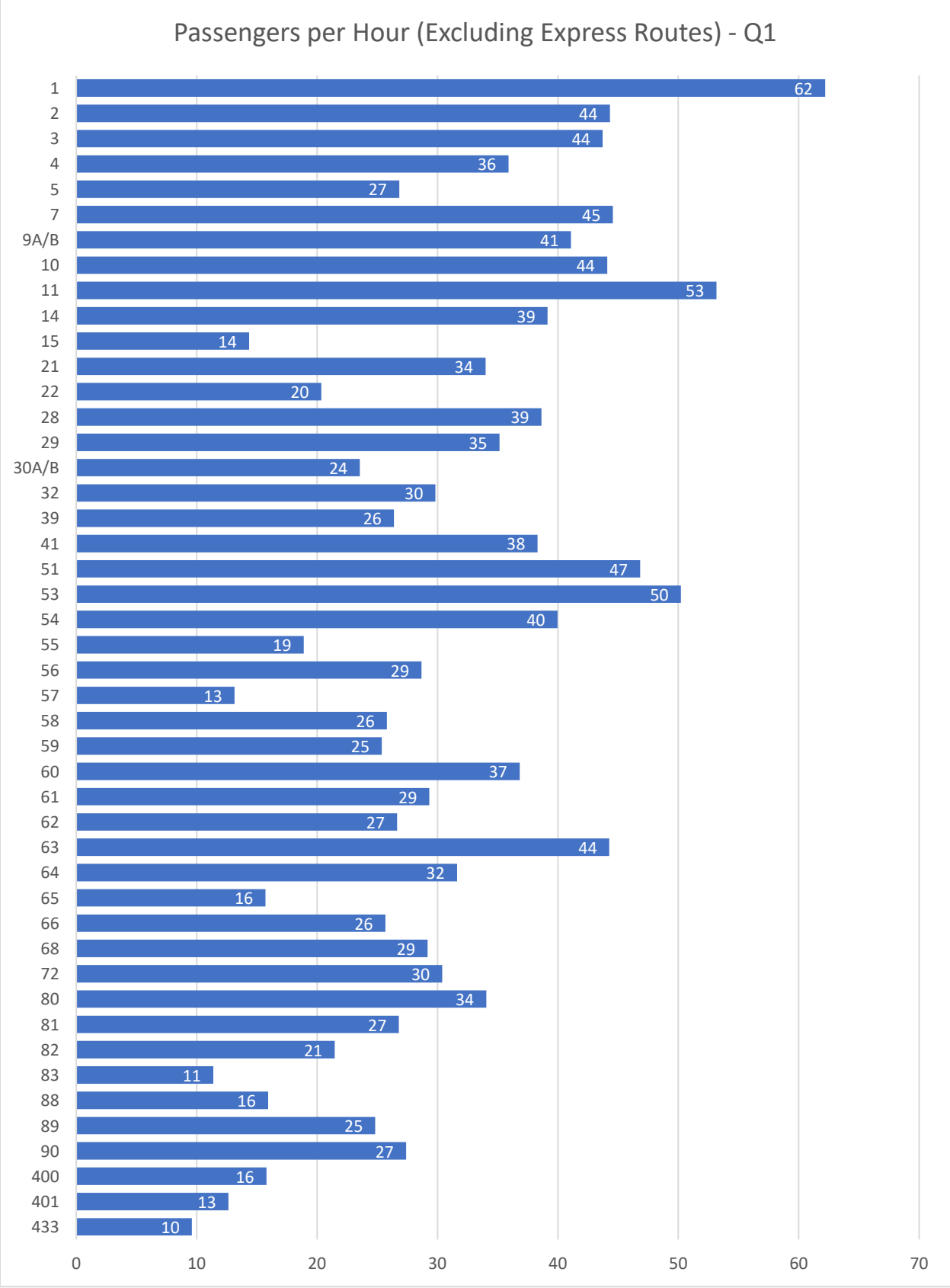
2019-20 Q1 Weekday Boardings by District



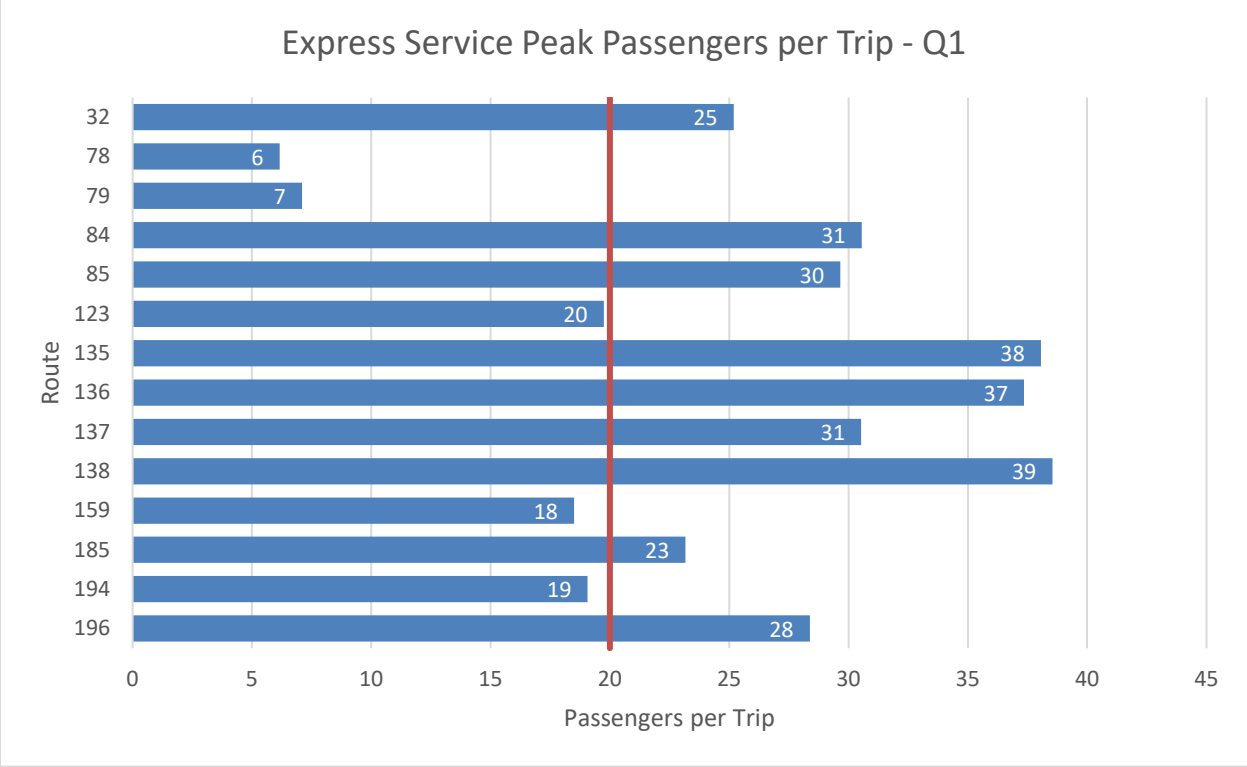
Weekday Boardings by District – AM Peak Period



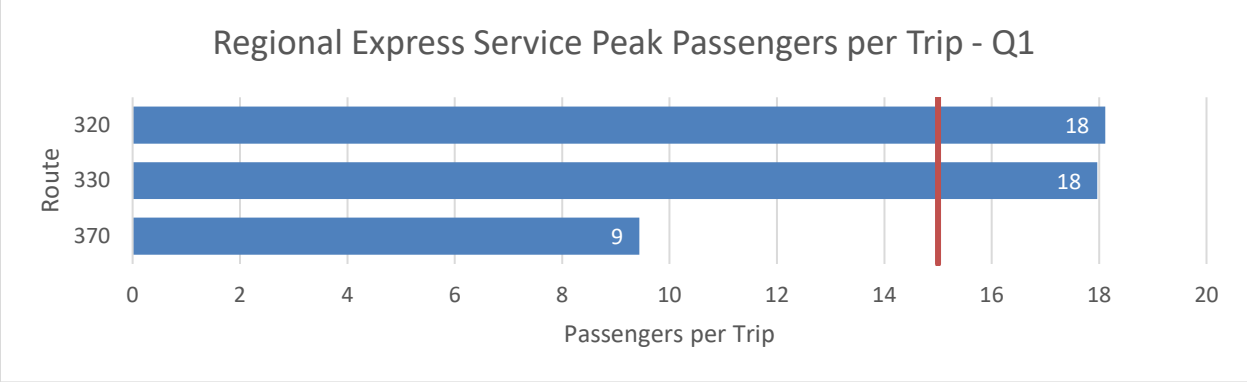
Passengers per Hour by Route



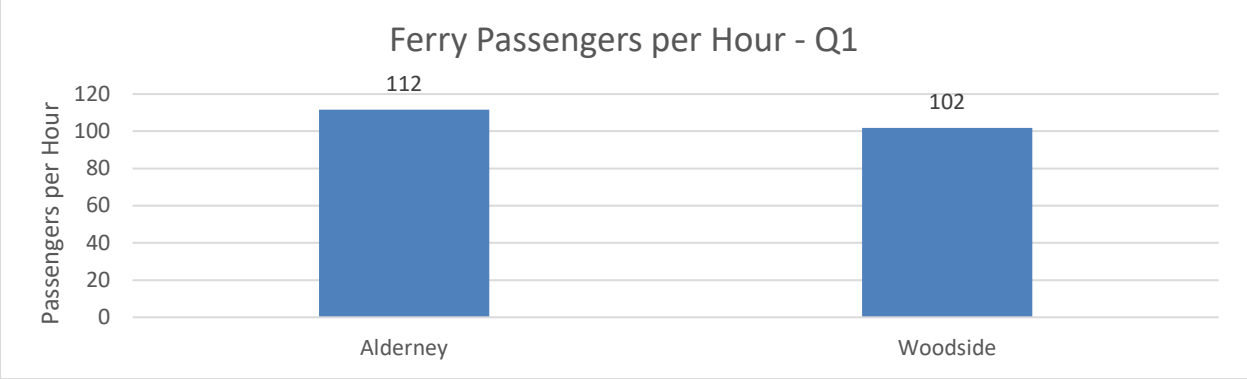
Express Service Peak Passengers per Trip by Route



Regional Express Peak Passengers per Trip by Route



Ferry Passengers per Hour



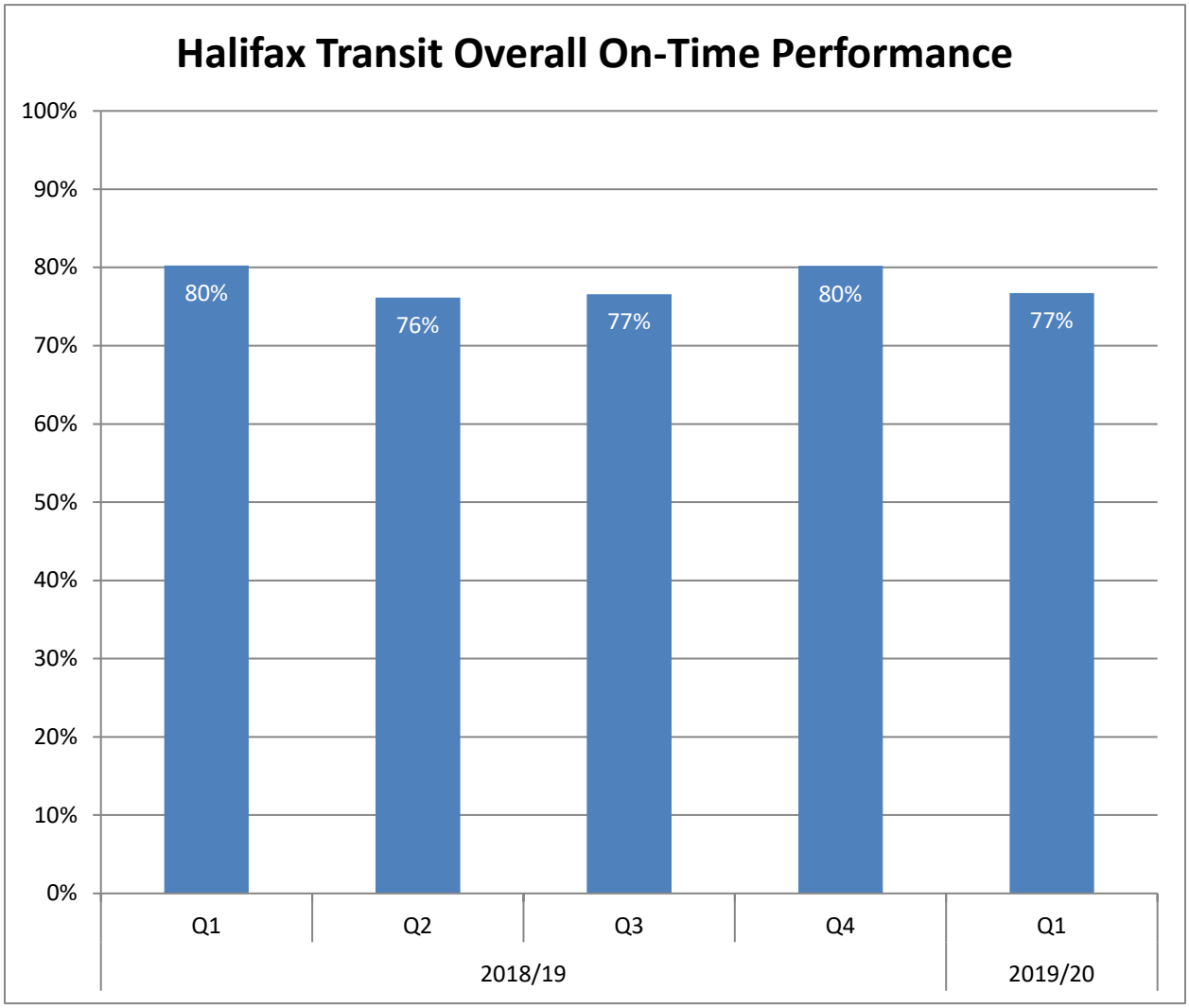
On-Time Performance

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.

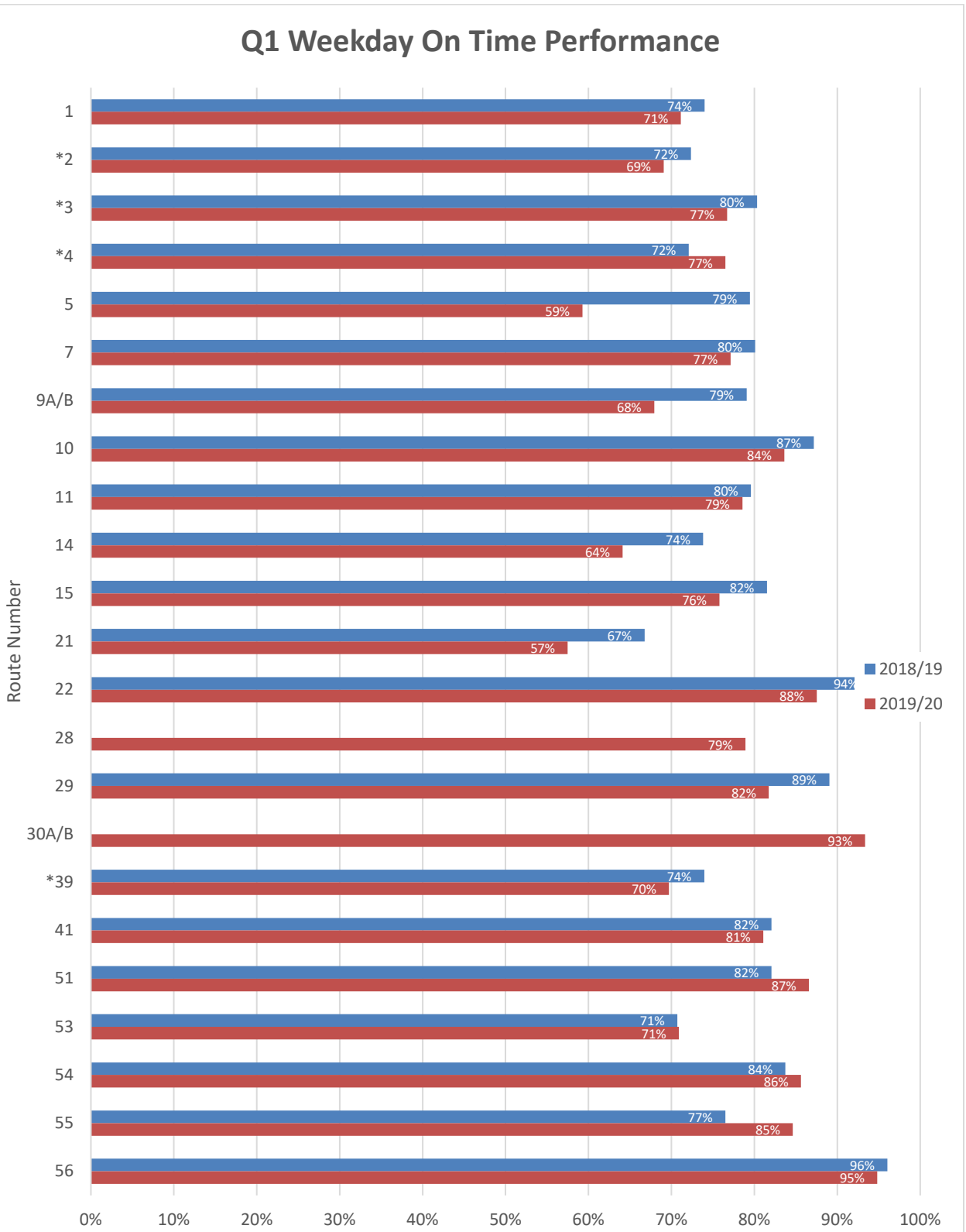
Transit industry standard targets for on-time performance tend to range between 85% and 90%, although service types are not always comparably grouped, nor are schedule adherence definitions consistent between agencies. Halifax Transit will analyze on-time performance across the network in order to establish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

Compared to the first quarter last year, on-time performance dropped from 80% to 77%. 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.

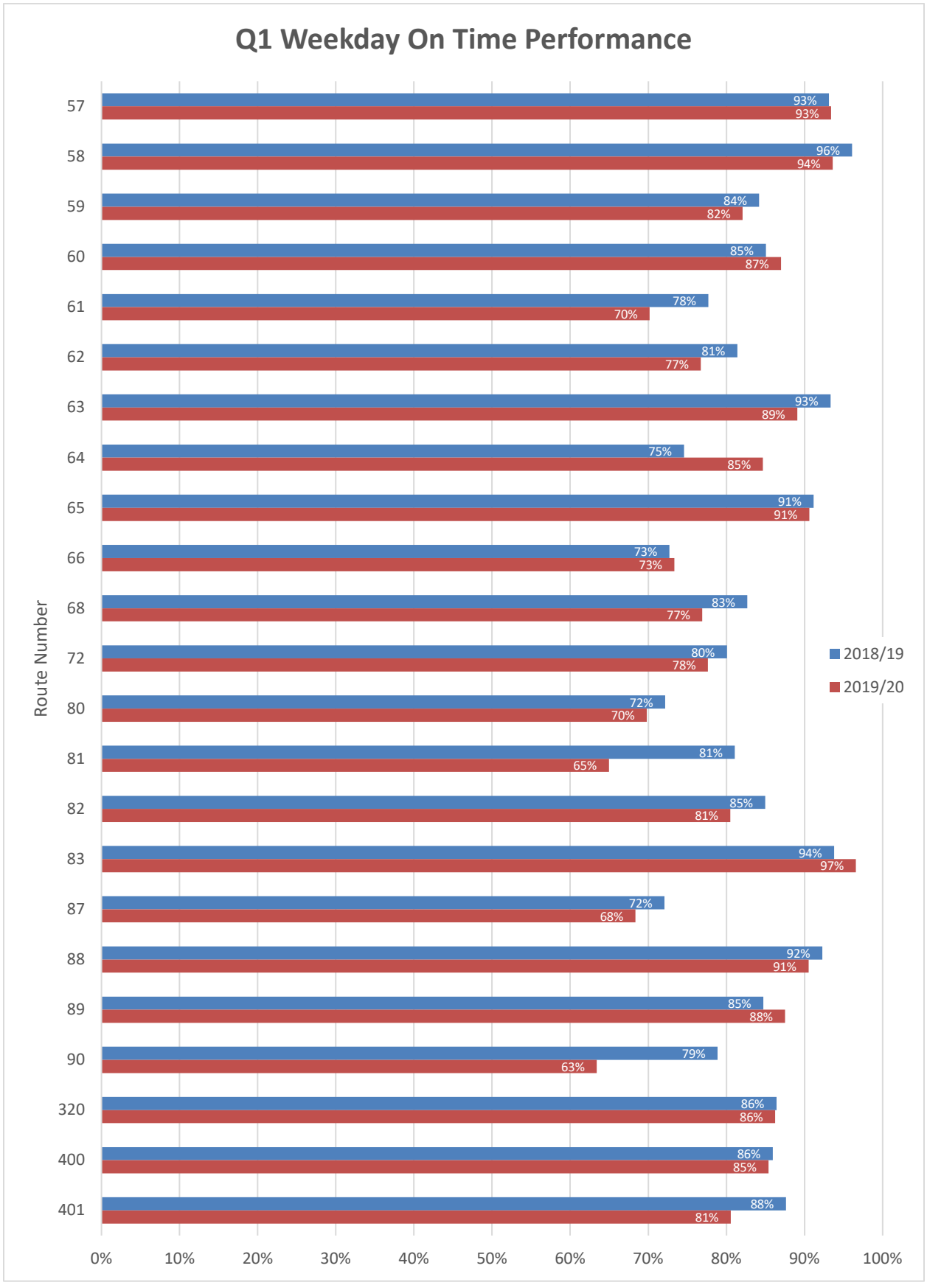
Overall Network On-Time Performance



Weekday On-Time Performance



** Route 2 is compared to former Route 2; Route 3 to former Route 52; Route 4 to former Routes 17, 18 and 42; and Route 39 to former Route 16.*


Q1 Weekday On Time Performance
Route Number
57
58
59
60
61
62
63
64
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66
68
72
80
81
82
83
87
88
89
90
320
400
401
93%
93%
96%
94%
84%
82%
85%
87%
78%
70%
81%
77%
93%
89%
75%
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91%
73%
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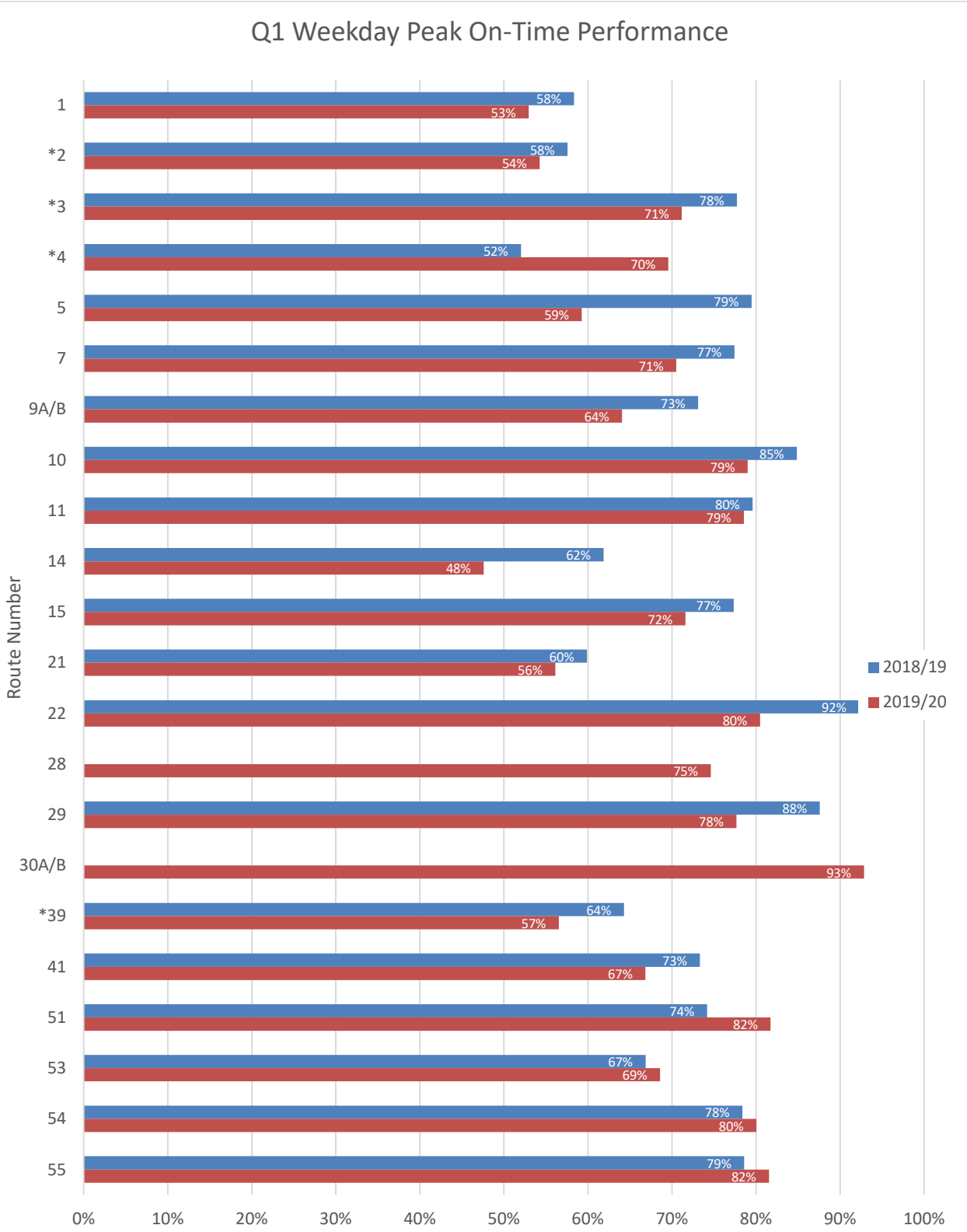
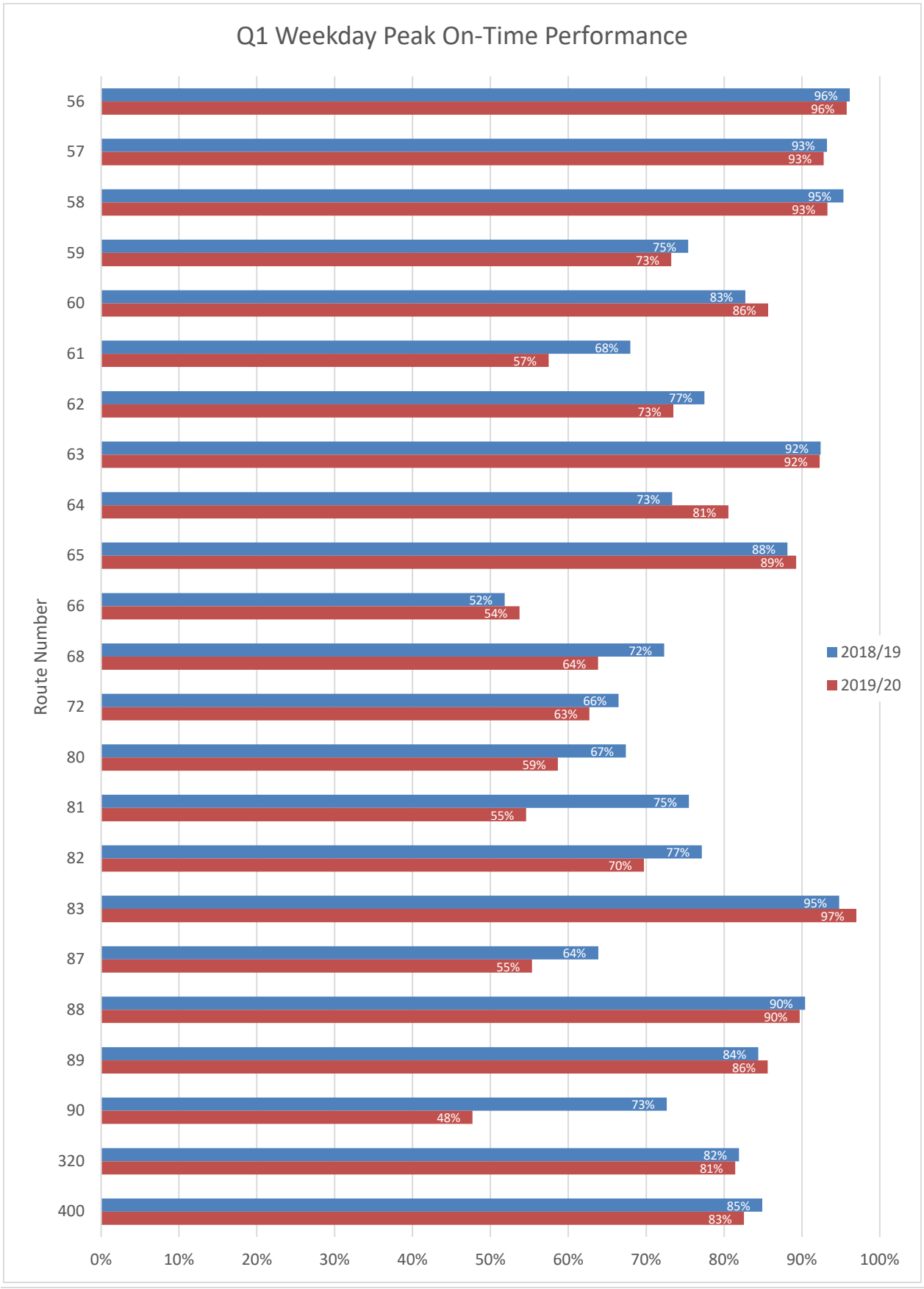
77%
80%
78%
72%
70%
81%
65%
85%
81%
94%
97%
72%
68%
92%
91%
85%
88%
79%
63%
86%
86%
86%
85%
88%
81%
2018/19
2019/20
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

Weekday Peak Period On-Time Performance



** Route 2 is compared to former route 2; Route 3 to former Route 52; Route 4 to former Routes 17, 18 and 42; and Route 39 to former Route 16.*


Q1 Weekday Peak On-Time Performance
Route Number
56
57
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84%
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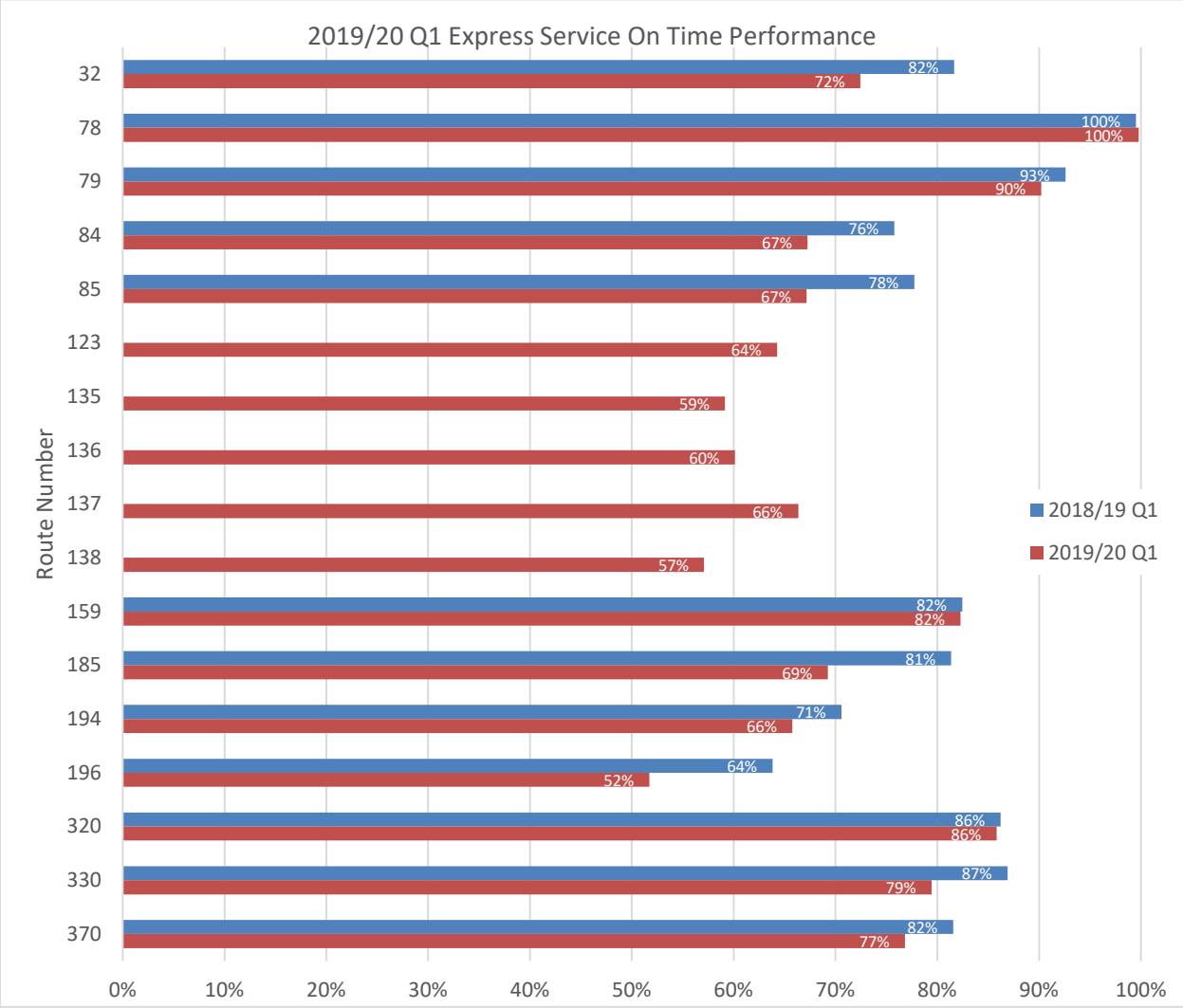
73%
48%
82%
81%
85%
83%
2018/19
2019/20
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

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 below graph 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 first quarter, the total loss of service was 881 hours and 27 minutes, this equates to 0.42% of the revenue hours for the quarter.