2020/21 – Q1
Performance Measures Report

HALIFAX
TRANSIT

Contents

COVID-19 Pandemic Data Impacts

The onset of the COVID-19 pandemic in early 2020 resulted in the need to rapidly implement emergency service adjustments to the weekday schedules. Data collection was temporarily disrupted due to these emergency service reductions, while bus schedules were unable to be synchronized with technology solutions. Consequently, data reporting tied to the weekday schedules was impacted between March 23rd and May 4th. During this period boardings data was unavailable and was estimated, based on March 20th boarding data. Schedule adherence data for weekdays during this period was also unavailable and instead covers May 4th through June 30th. Fare collection ceased on March 18th and resumed August 1st. Full service bus schedules resumed August 31st. Ferry service increased September 8th, and again October 26th, but continued to run at a reduced schedule.

Boardings & Revenue

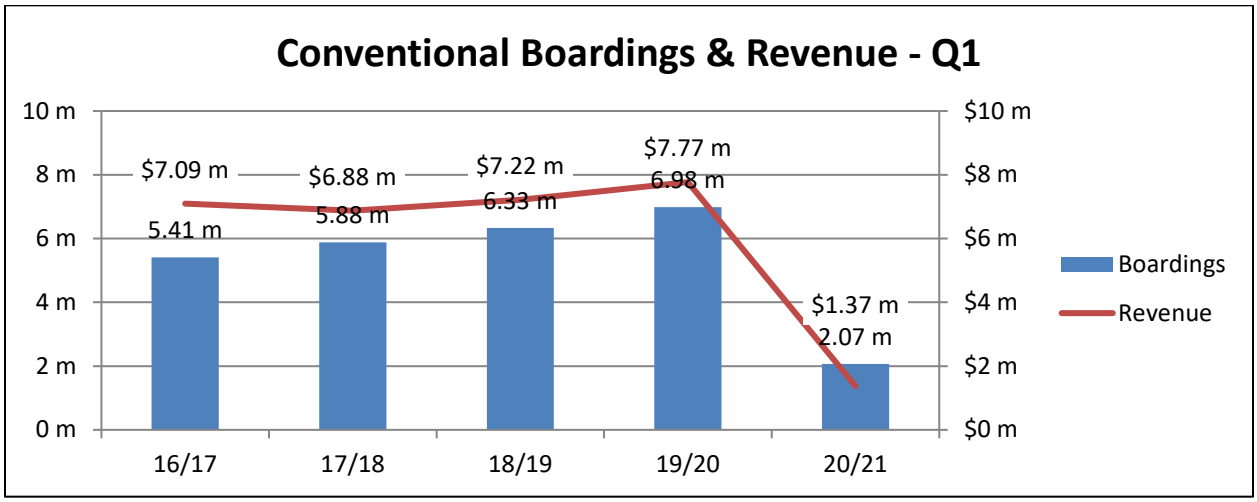
Revenue and boardings are reported to demonstrate how well transit services were used over the quarter, in comparison to the same quarter the previous year.

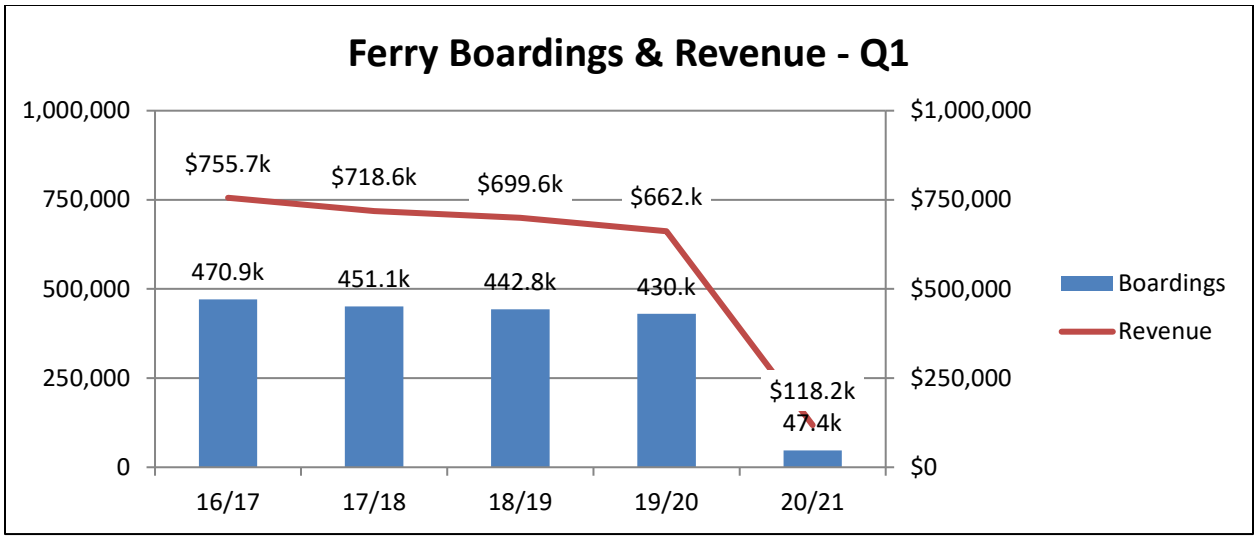
By installing Automatic Passenger Counter (APC) systems throughout the network in the 2017/18 fiscal year, Halifax Transit is now able to track the number of boardings by counting passengers entering the bus at each stop, instead of estimating boardings from revenue. Therefore, the data source for boardings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

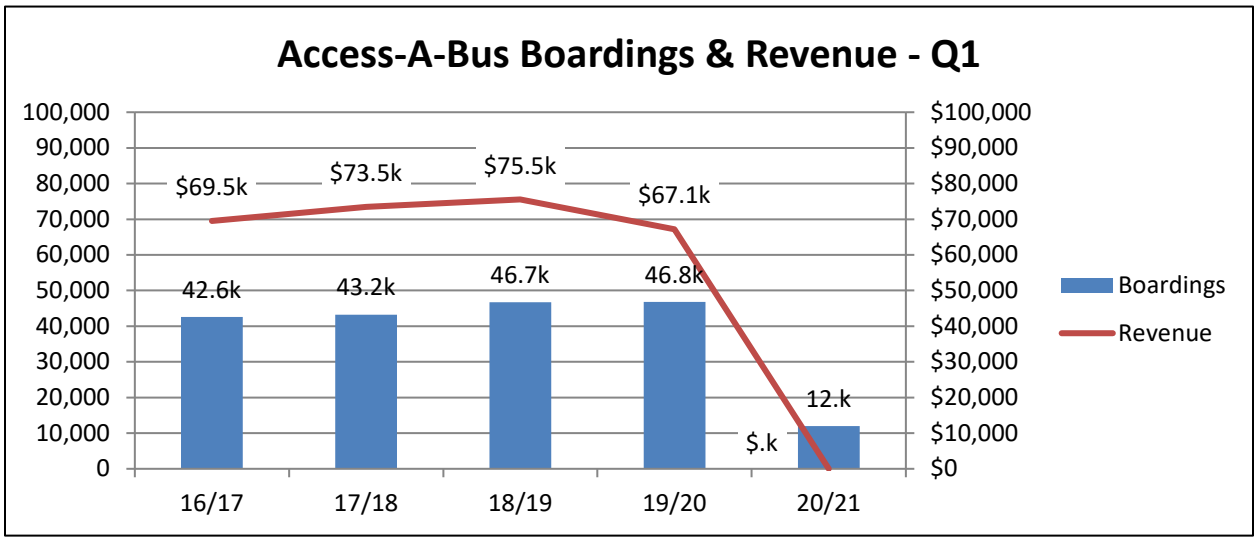
COVID-19 had a significant impact in the first quarter of 2020/21. Fare collection resumed mid second quarter on August 1, 2020. Revenue in the first quarter is attributable to the Department of Community Services Passes and UPasses for April and May.

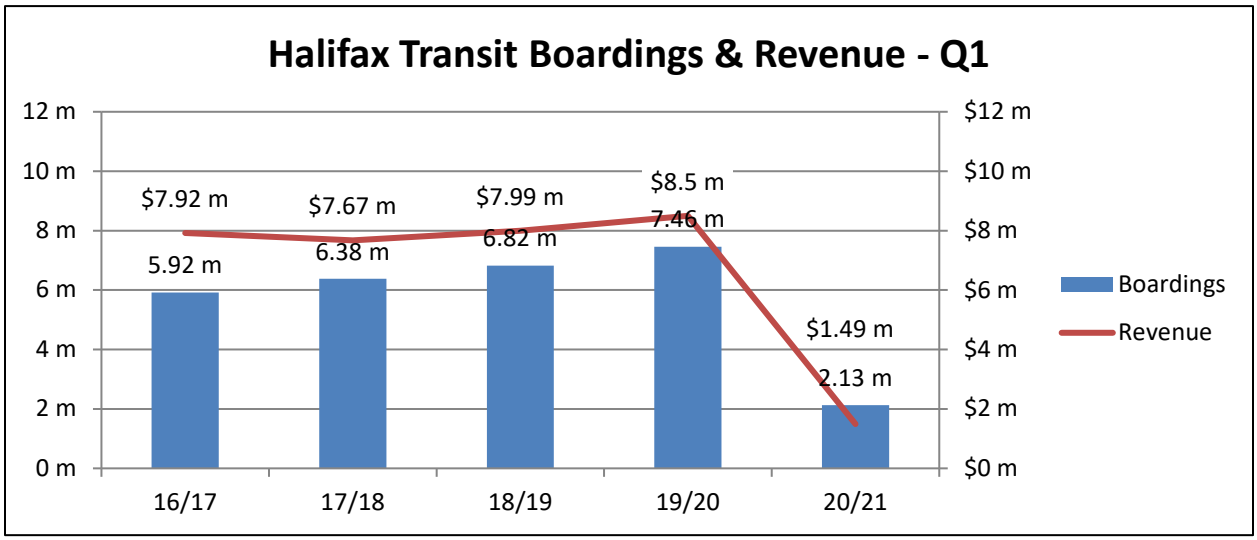
Conventional boardings decreased 70.4% from this quarter last year, Ferry boardings decreased 89% and Access-A-Bus boardings decreased 74.4%. Overall, system wide boardings decreased this quarter by 71.5% compared to last year. Overall revenue this quarter decreased 82.5% from last year. Decreases in boardings are attributable to COVID-19.

Historical Boardings & Revenue




Ferry Boardings & Revenue - Q1
1,000,000
750,000
500,000
250,000
0
$1,000,000
$750,000
$500,000
$250,000
$0
$755.7k
$718.6k
$699.6k
$662.k
$118.2k
470.9k
451.1k
442.8k
430.k
47.4k
16/17
17/18
18/19
19/20
20/21
Boardings
Revenue

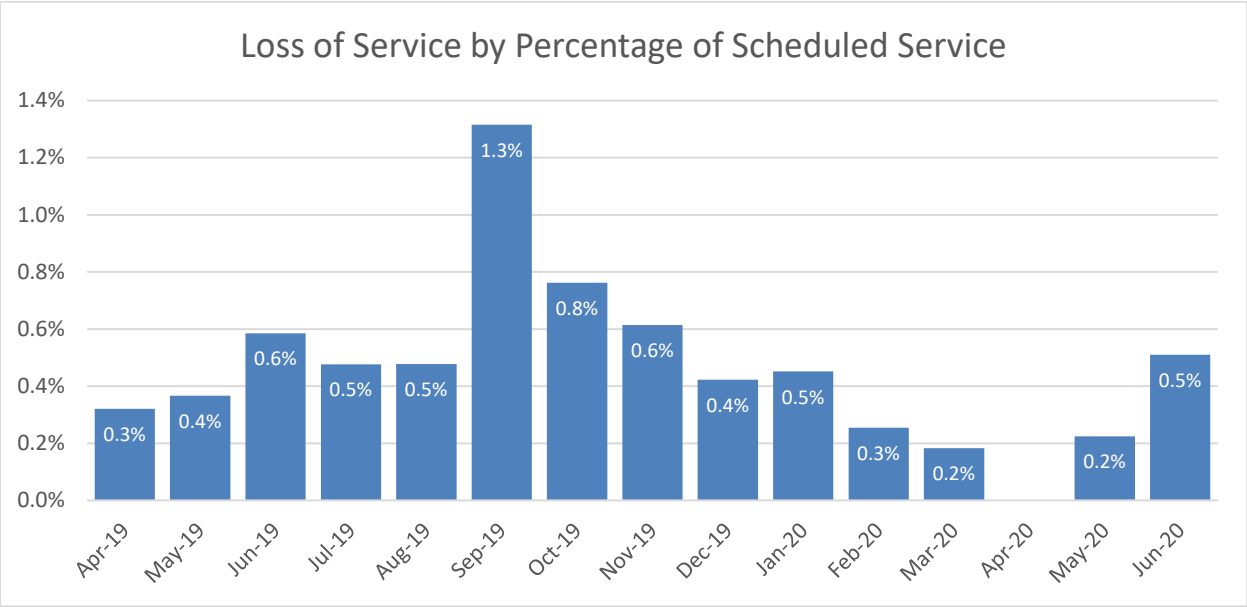

Access-A-Bus Boardings & Revenue - Q1
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
$100,000
$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
$69.5k
$73.5k
$75.5k
$67.1k
$.k
42.6k
43.2k
46.7k
46.8k
12.k
16/17
17/18
18/19
19/20
20/21
Boardings
Revenue


Halifax Transit Boardings & Revenue - Q1
12 m
10 m
8 m
6 m
4 m
2 m
0 m
$12 m
$10 m
$8 m
$6 m
$4 m
$2 m
$0 m
$7.92 m
$7.67 m
$7.99 m
$8.5 m
$1.49 m
5.92 m
6.38 m
6.82 m
7.46 m
2.13 m
16/17
17/18
18/19
19/20
20/21
Boardings
Revenue

Loss of Service

Loss of service represents the total number of scheduled bus 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 474 hours and 36 minutes, which is 0.44% of the quarterly revenue hours. The table below shows the total loss of service for each month.

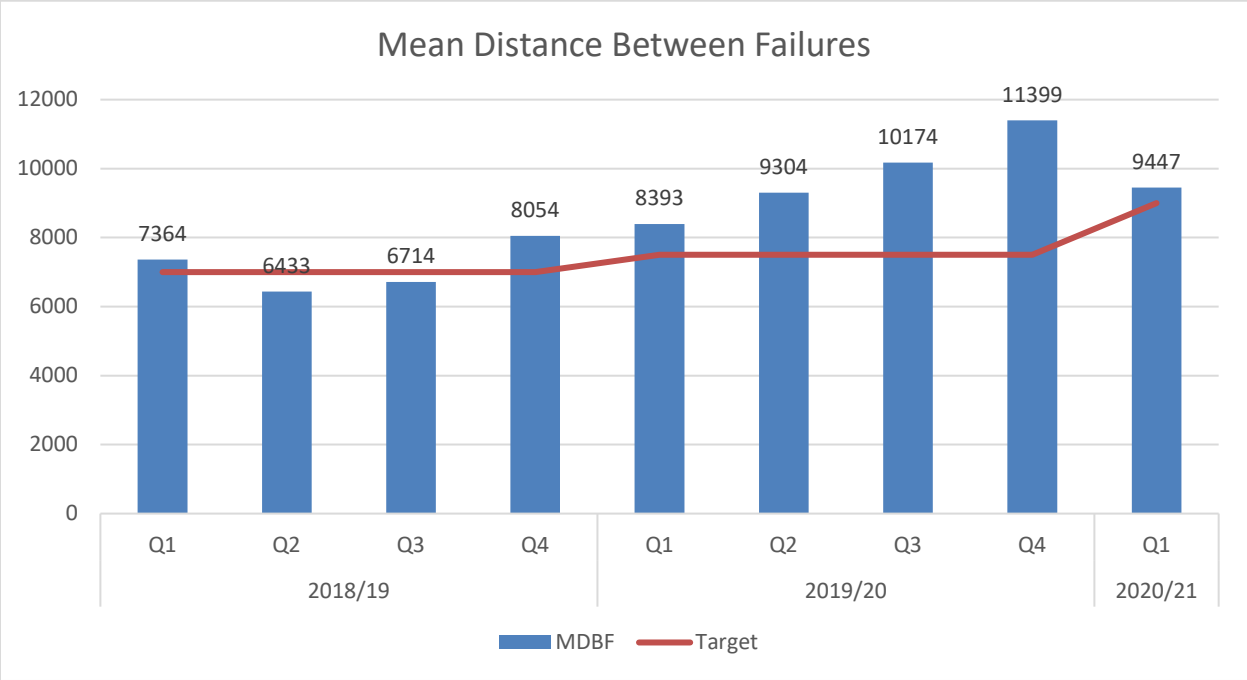


Mean Distance Between Failures

Halifax Transit's Mean Distance Between Failures (MDBF) is the distance in kilometres 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 has set a target of 9,000 kms for 2020/21, an improvement of 20% from the prior year. 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.

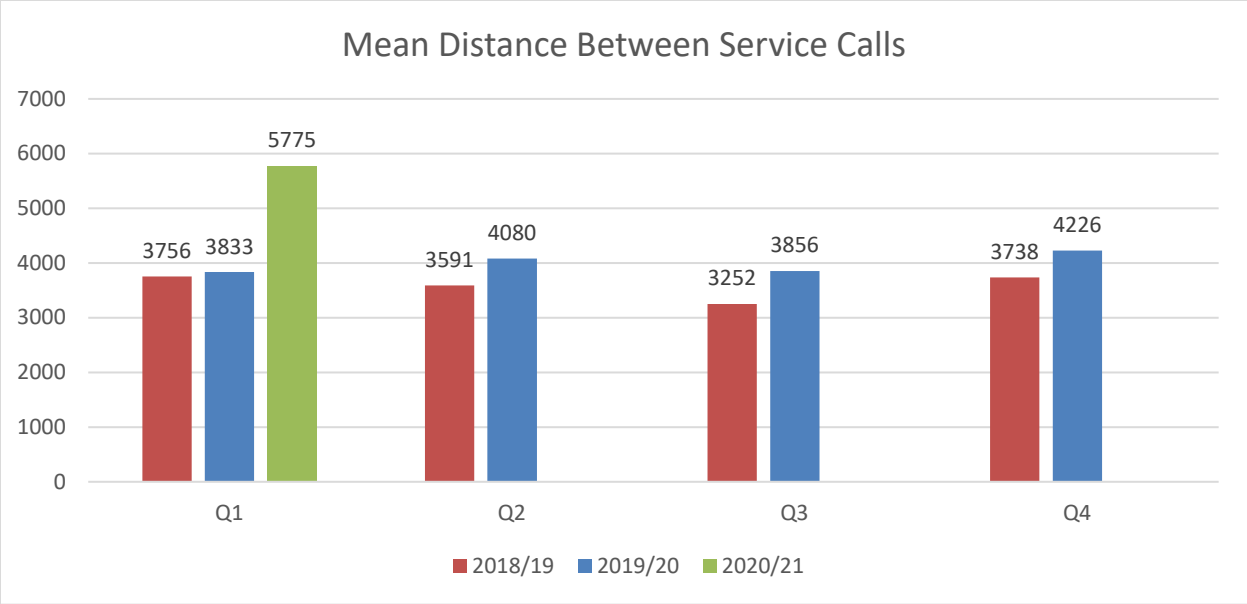
For the first quarter of 2020/21, the MDBF for conventional transit was 9,447 kms. This is equivalent to a 13% improvement from the first quarter of the previous year (2019/20). Bus Maintenance will continue to monitor this KPI and has implemented new preventative maintenance measures to reduce aftertreatment and cooling system defects.



Mean Distance Between Service Calls

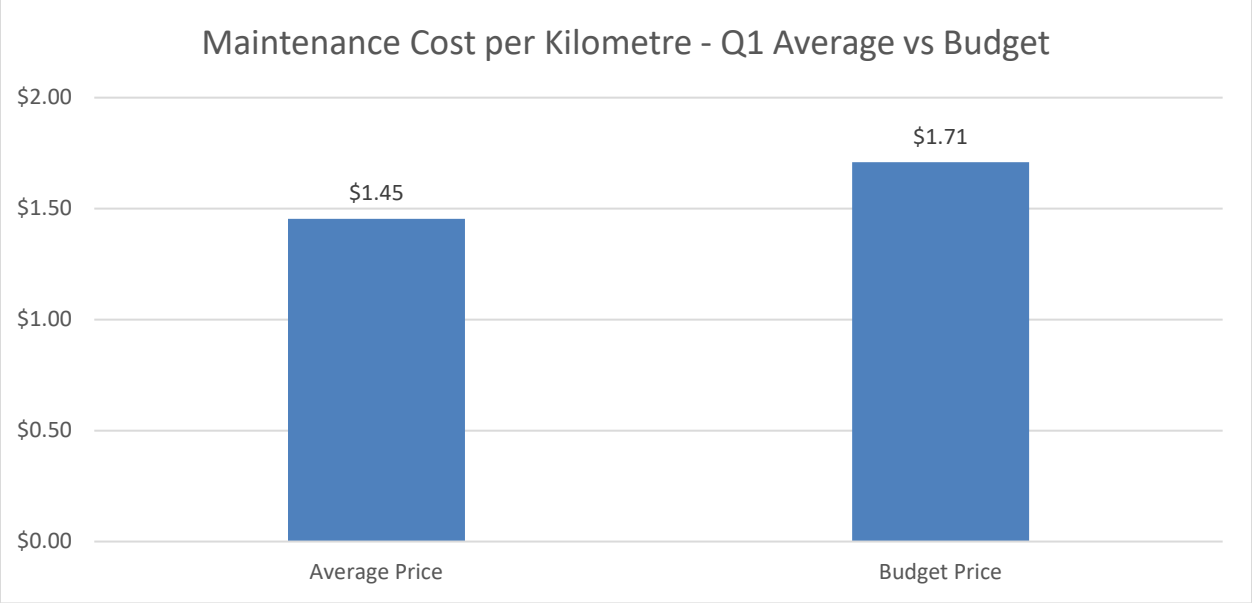
Mean Distance Between Service Calls (MDBS) reflects the average distance in kilometres covered between maintenance service calls. This metric includes all instances of service calls, including issues with secondary equipment, passenger-related events and damages to the bus resulting from minor accidents.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

For the first quarter of 2020/21, the MDBS for conventional transit was 5,775 kms. In comparison to the first quarter of 2019/20 (3,833), this is an improvement of 51%. Overall, the Mean Distance Between Service Calls has improved by 45% in 2020/21 over 2019/20. Therefore, bus reliability for conventional transit continues to improve significantly.The MDBS for Access-A-Bus service was 29,138 kms. Bus Maintenance will continue to monitor this metric in order to reduce service calls.



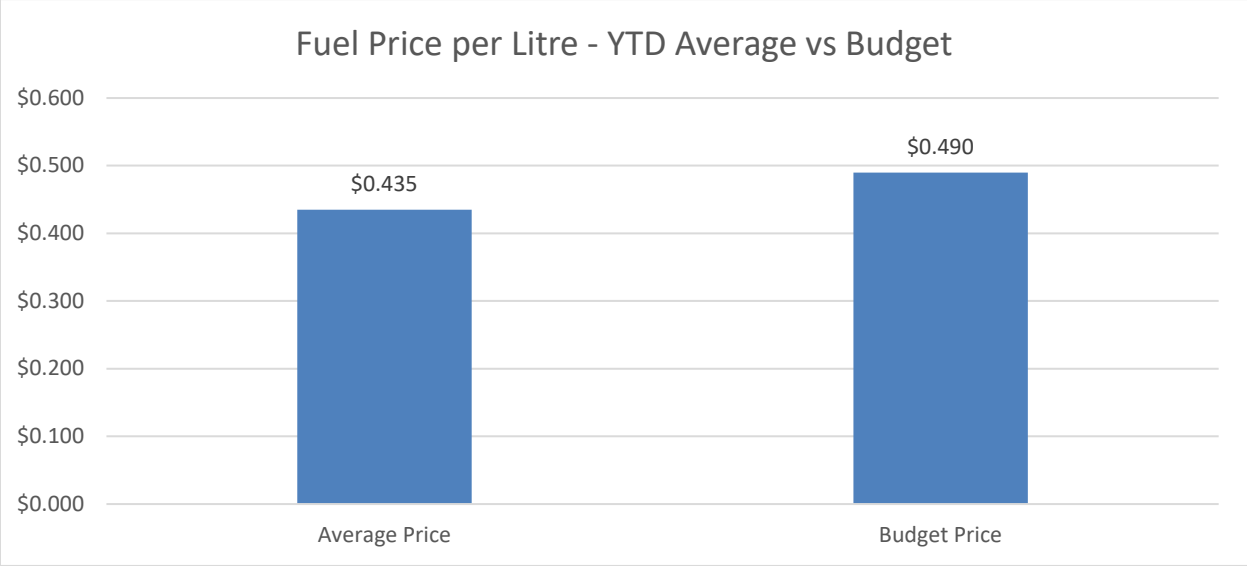
Bus Maintenance Cost – Quarter Average vs Budget

In the first quarter maintenance costs were $1.45/km, while the budgeted maintenance cost was $1.71/km. The first quarter maintenance costs do not include the cost of daily disinfecting activities of buses (outsourced services and most materials). These were applied to the COVID-19 cost centre M381. Therefore, in the first quarter the average cost per km was under budget by $0.26/km. The surplus is mostly attributed to vacant positions within Bus Maintenance and inaccuracies presented by unknowns due to COVID-19. In addition, the number of kilometres actually travelled was greater than the budgeted kilometres accounting for a portion of the gap as well as seasonal fluctuations which typically render lower maintenance costs during the spring. Bus Maintenance will continue to strengthen the budgeting process to improve accuracy of future budgets.



Fuel Price – Year to Date Average vs Budget

The budgeted fuel price for 2020/21 was set at 49 cents/litre. In the first quarter, the average fuel price was 44 cents/litre, 5 cents lower than the budgeted cost per litre.

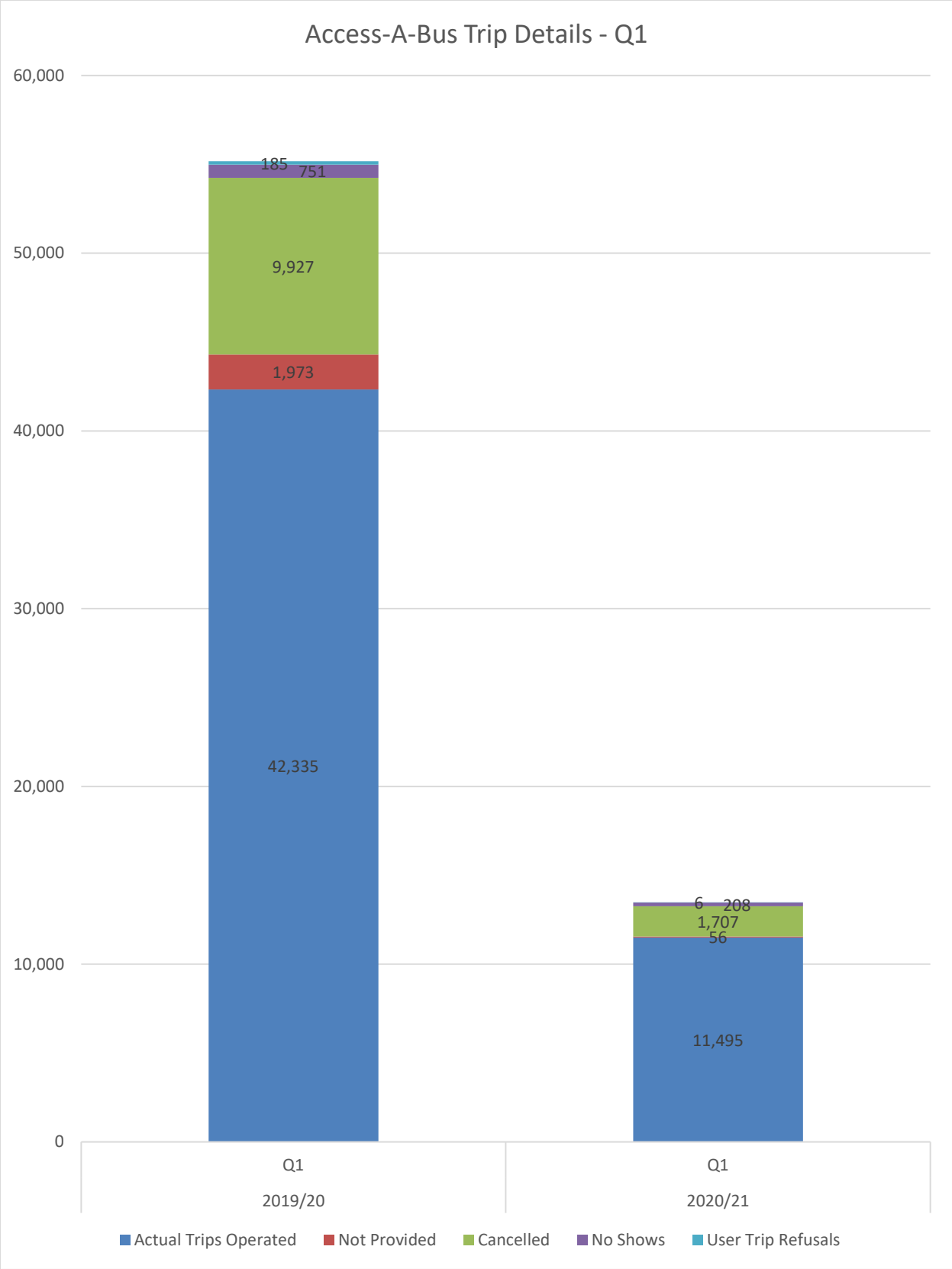


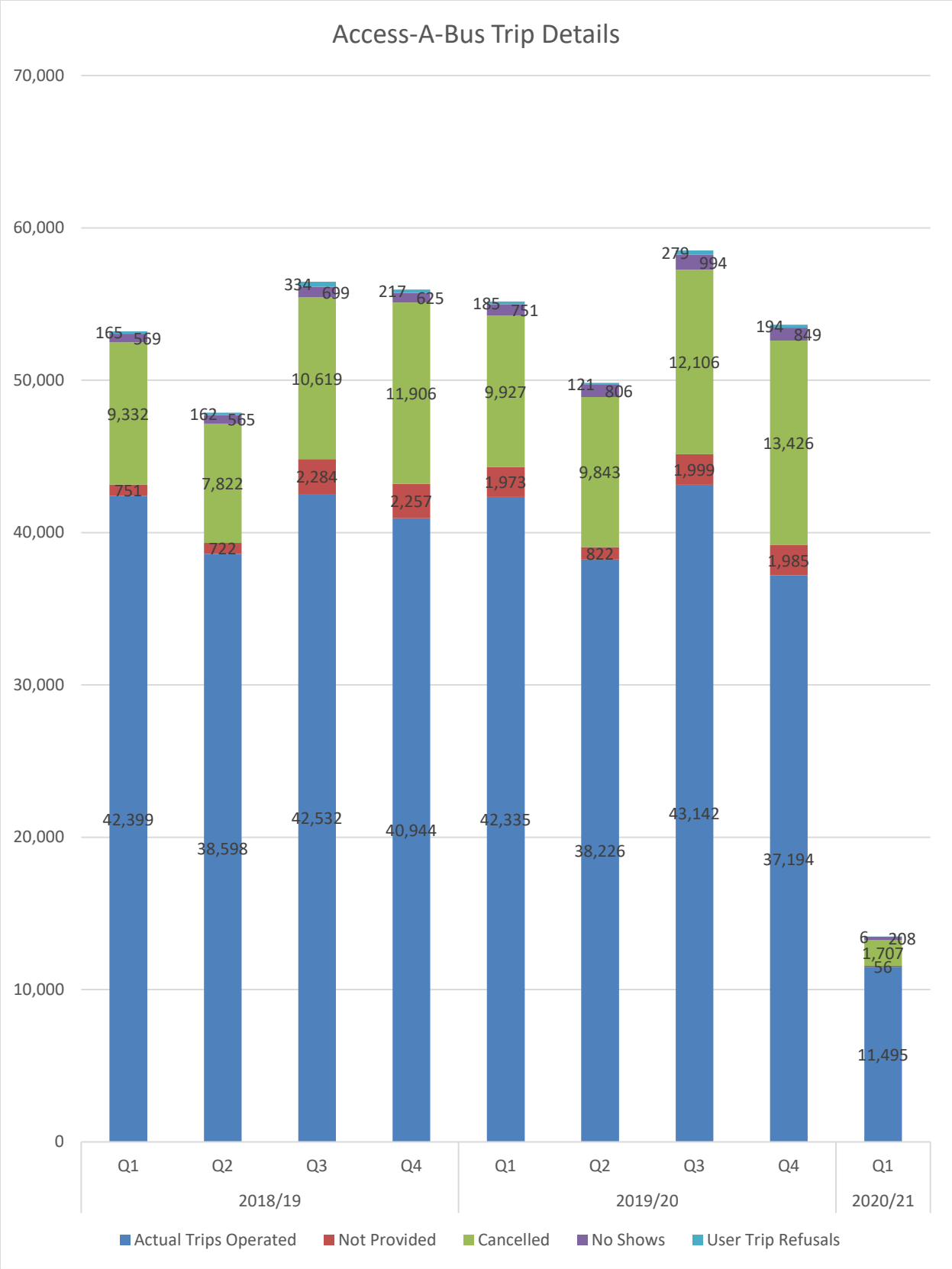
Access-A-Bus Trip Details

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 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 further revision to the reporting categories would more accurately reflect the service and passenger experience and would better align with the key performance indicators. The category previously reported as “Waitlisted” will be reported as “Not Provided” and includes requested trips that could not be provided within the quarter. Those trips that were previously reported as “Not Provided” were erroneous and are now removed from the requested trip totals. A new category has been included; “User Trip Refusals” and includes any trips where the customer declined a booking that was offered within a half hour of their desired trip time. Analysis and interpretation of the new data set resulting from the 2018 software upgrade is ongoing. 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.

In the first quarter of 2020/21 the COVID-19 pandemic continued to affect ridership significantly. 30,840 fewer trips were operated compared to the first quarter last year, a decrease of 19%. The trips that were not provided decreased by 32%, compared to this quarter last year.


Access-A-Bus Trip Details - Q1
60,000
50,000
40,000
30,000
20,000
10,000
0
185
751
9,927
1,973
42,335
6
208
1,707
56
11,495
Q1
2019/20
Q1
2020/21
Actual Trips Operated
Not Provided
Cancelled
No Shows
User Trip Refusals

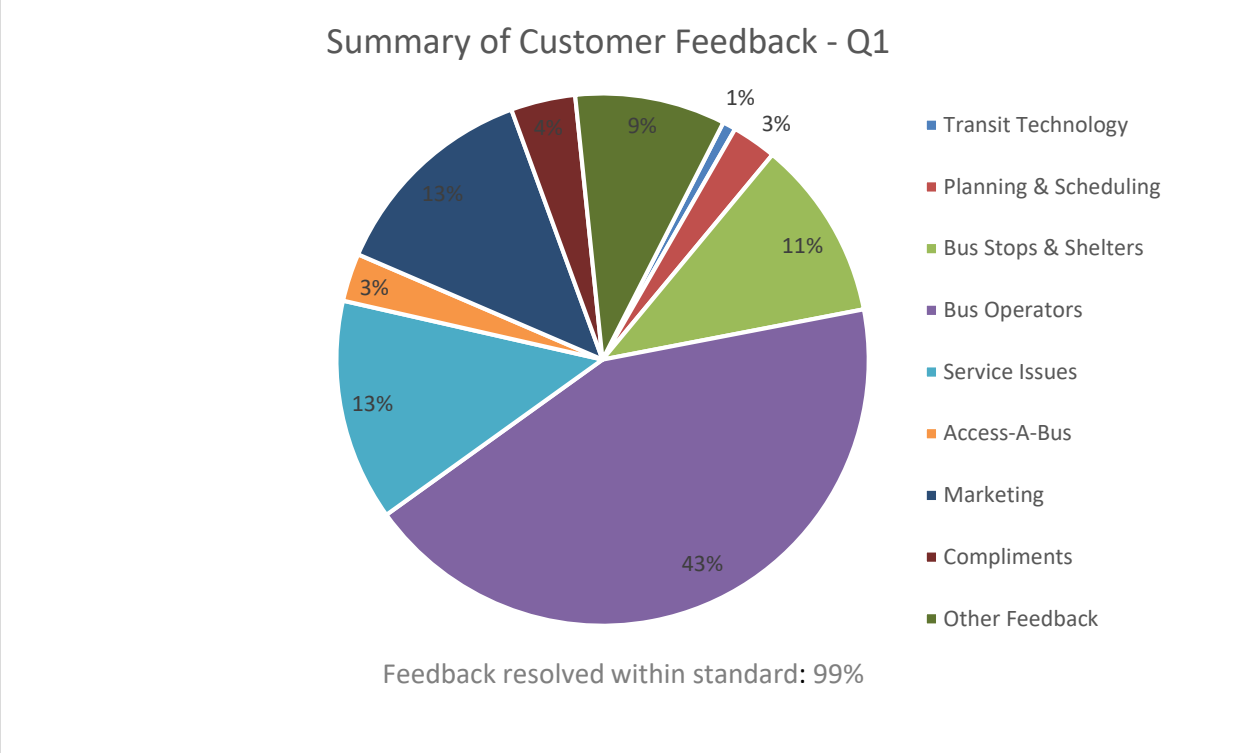

Access-A-Bus Trip Details
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
2018/19
2019/20
2020/21
165
569
9,332
751
42,399
162
565
7,822
722
38,598
334
699
10,619
2,284
42,532
217
625
11,906
2,257
40,944
185
751
9,927
1,973
42,335
121
806
9,843
822
38,226
279
994
12,106
1,999
43,142
194
849
13,426
1,985
37,194
6
208
1,707
56
11,495
Actual Trips Operated
Not Provided
Cancelled
No Shows
User Trip Refusals

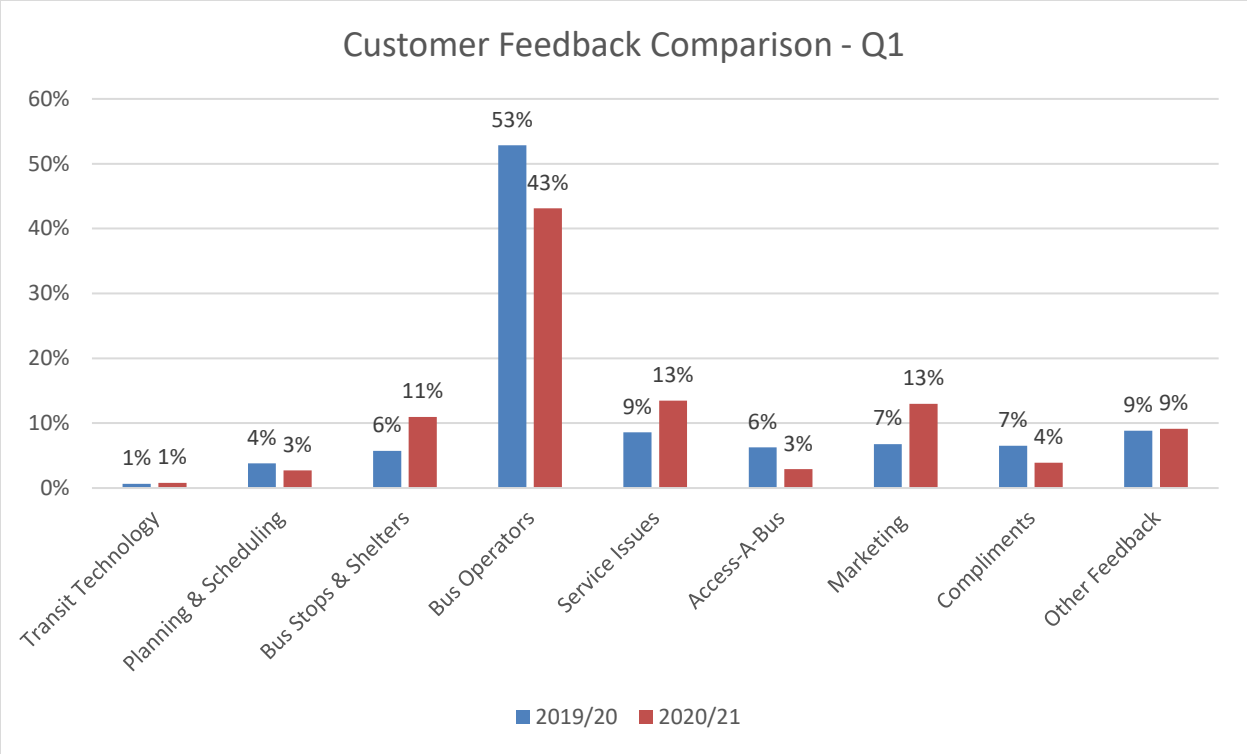
Customer Service – All Services

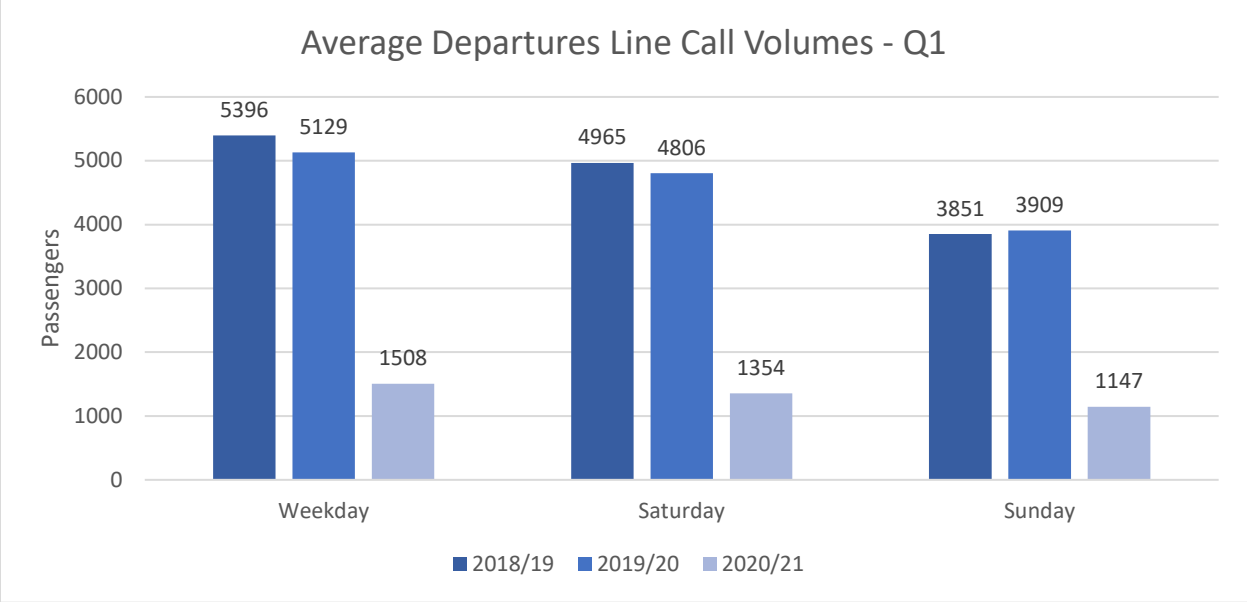
Customer service statistics are measured monthly using the Hansen Customer Relationship Management software along with Crystal Reports. Feedback is first categorized by subject matter and then divided into two categories: feedback resolved within service standard and feedback resolved outside service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

In the first quarter, 43% of feedback received was related to bus Operators. The remaining 57% 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 99% 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 2020/21, average call volumes were significantly lower than this time last year for weekdays as well as for Saturdays and Sundays, due to reduced ridership resulting from the COVID-19 pandemic.




Customer Feedback Comparison - Q1
60%
50%
40%
30%
20%
10%
0%
1% 1%
4% 3%
6% 11%
53% 43%
9% 13%
6% 3%
7% 13%
7% 4%
9% 9%
Transit Technology
Planning & Scheduling
Bus Stops & Shelters
Bus Operators
Service Issues
Access-A-Bus
Marketing
Compliments
Other Feedback
2019/20
2020/21


Average Departures Line Call Volumes - Q1
Passengers
6000
5000
4000
3000
2000
1000
0
5396
5129
1508
4965
4806
1354
3851
3909
1147
Weekday
Saturday
Sunday
2018/19
2019/20
2020/21

Service Utilization

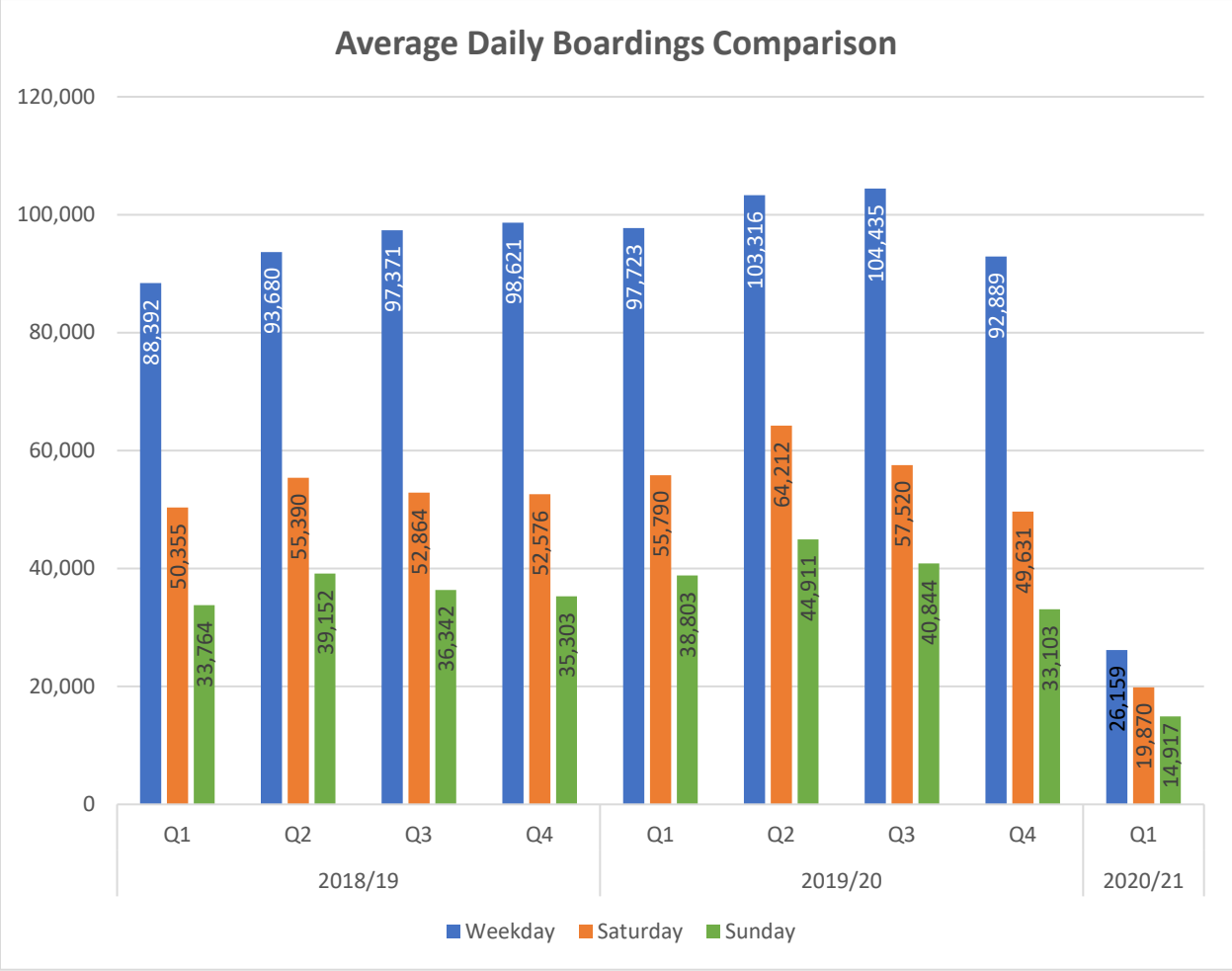
Automatic Passenger Counter (APC) data is now being been used to report bus ridership statistics. The APCs provide data within a 90% degree of accuracy. Boardings by Route demonstrate passenger usage during the past quarter. APC data has been collected since September 2016. The standard deviation is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

The onset of the COVID-19 pandemic in early 2020 resulted in the need to rapidly implement emergency service adjustments to the weekday schedules. Data collection was temporarily disrupted due to these emergency service reductions, while bus schedules were unable to be synchronized with technology solutions. Consequently, data reporting tied to the weekday schedules was impacted between March 23rd and May 4th. During this period boardings data was unavailable and was estimated, based on March 20th boarding data.

Boardings

Average weekday boardings in the third quarter were 26,159 ± 7,596 (29% variance). Average Saturday boardings this quarter were 19,870 ± 7,191 (36.2% variance). Average Sunday boardings this quarter were 14,917 ± 3,841 (25.8% variance).

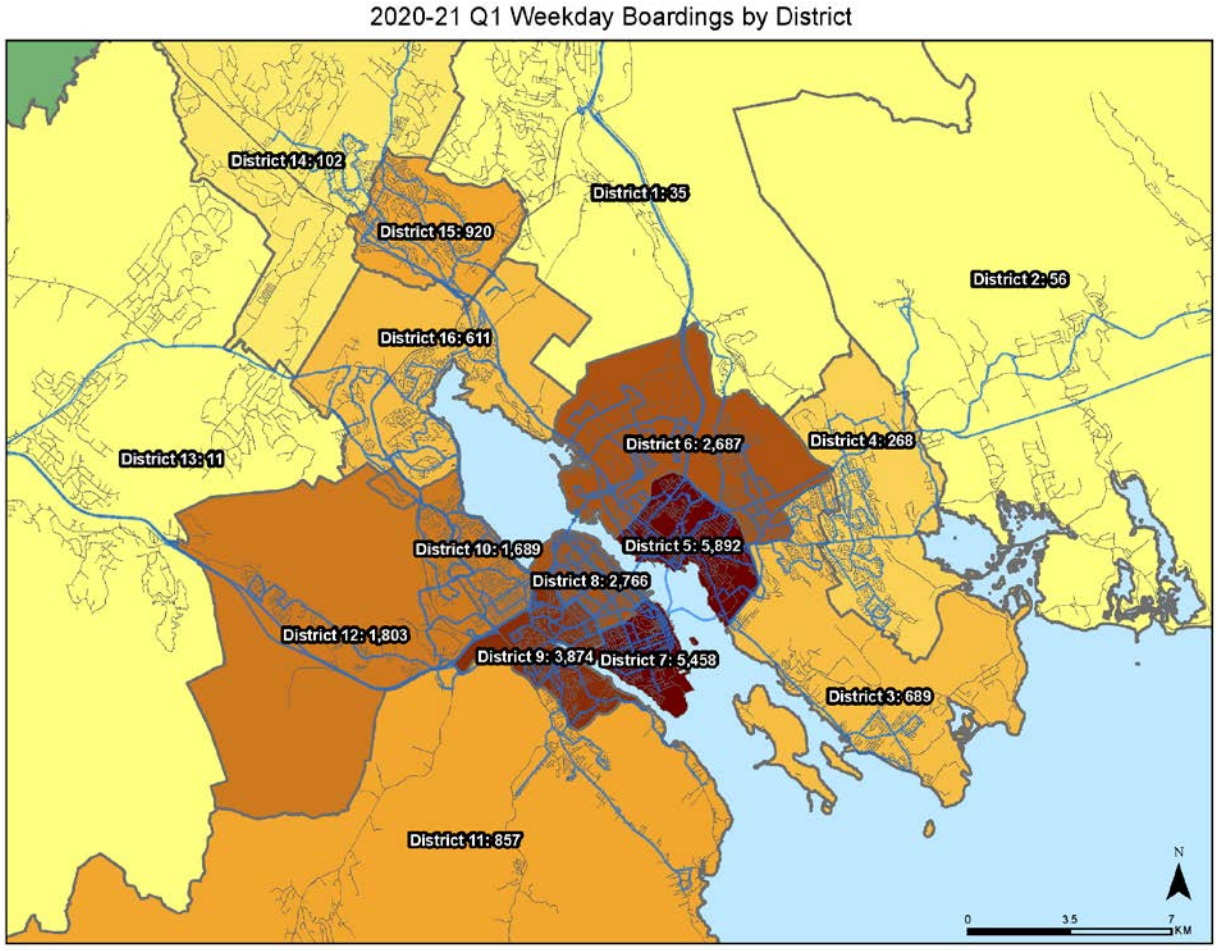
Average Daily Boardings by Service Day



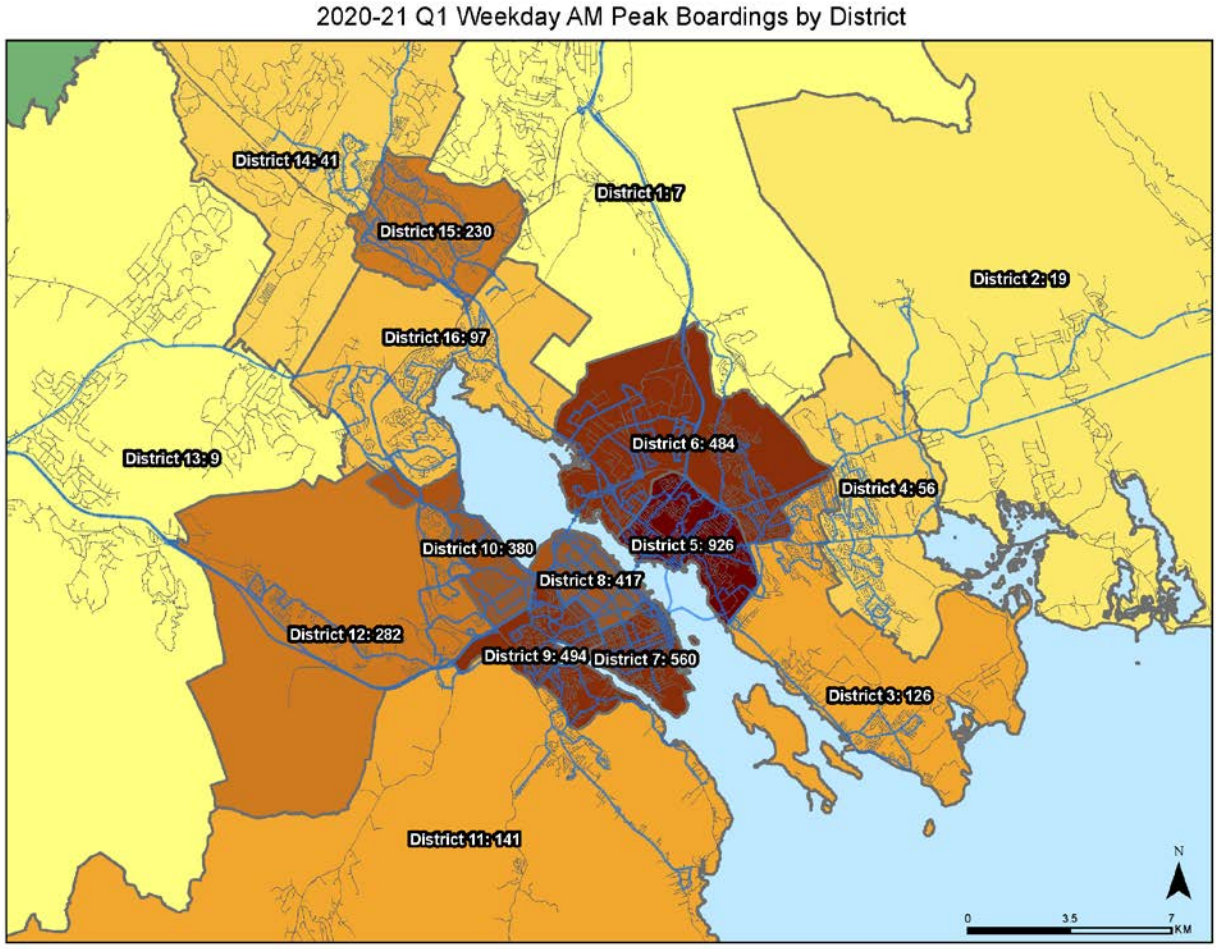
Boardings by District

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



Weekday Boardings by District – AM Peak Period



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.

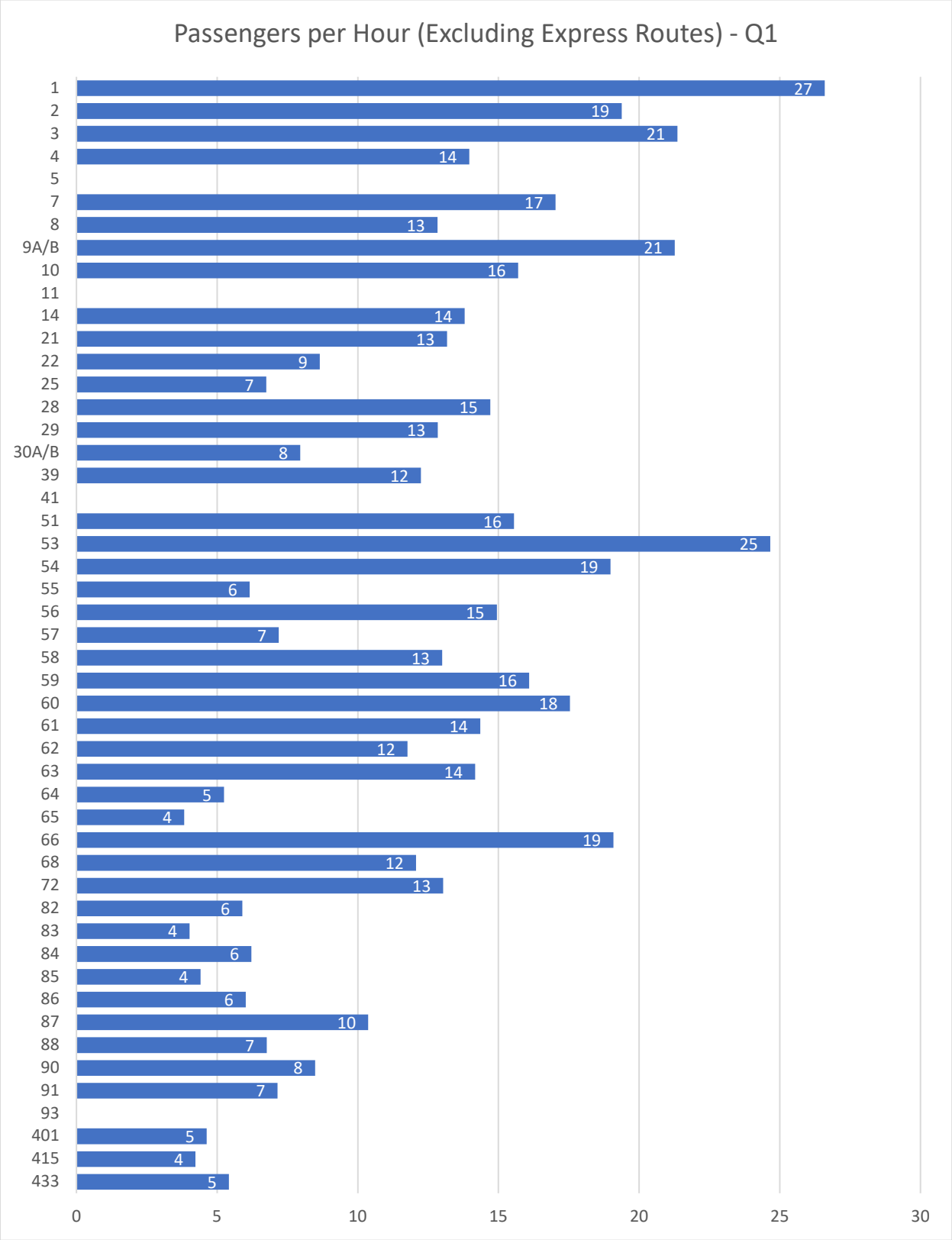
All weekday data for Q1 represents May 4th to June 30th. Following March 20th, 2020, weekday data for boardings and hours was unavailable due to emergency schedule adjustments.

Boardings & Passengers per Hour

Q1 Comparison - Average Daily Boardings by Route												
Route	Weekday				Saturday				Sunday			
	19/20		20/21		19/20		20/21		19/20		20/21	
	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr
1	9,610	62	3,165	27	8,044	70	2,221	20	4,595	53	1,753	21
2	4,717	44	2,054	19	4,535	45	1,736	17	2,303	30	1,190	17
3	6,587	44	2,120	21	3,767	44	1,585	18	3,412	36	1,909	20
4	4,468	36	903	14	2,117	42	615	13	1,549	34	604	13
7	5,026	45	1,645	17	3,741	40	1,186	13	1,870	35	825	16
8	4,251	34	1,516	13	3,798	36	1,171	10	2,514	28	989	9
9A/B	6,864	41	2,018	21	4,085	56	1,468	20	2,710	38	1,303	18
9A	4,644	43	1,074	21	1,944	55	723	20	1,152	33	573	16
9B	2,220	38	945	21	2,141	56	746	20	1,558	42	730	20
10	4,681	44	1,126	16	3,487	47	931	13	1,913	39	822	17
11	128	53										
14	2,484	39	544	14	1,367	40	386	12	935	31	356	13
21	1,002	34	477	13	869	25	354	10	475	26	248	14
22	648	20	300	9	488	15	236	7	365	11	215	6
25			102	7			73	5			79	7
28	1,429	39	649	15	1,445	35	507	12	575	31	328	16
29	3,154	35	867	13	1,974	32	630	10	1,268	21	545	9
30A/B	852	24	269	8	580	17	229	7	299	15	148	8
30A	469	25	135	8	304	18	118	7	129	11	65	7
30B	383	22	135	8	276	16	111	6	170	20	83	10
39	1,194	26	595	12	937	19	459	9	384	18	208	10
41	1,264	38										
51	1,108	47	330	16	618	37	242	15	305	34	145	14
53	1,271	50	447	25	837	55	375	25	333	40	188	23
54	847	40	289	19	591	38	231	15	249	25	134	14
55	401	19	96	6	273	18	75	5	182	12	70	5
56	953	29	533	15	1,141	32	472	13	582	18	434	13
57	535	13	218	7	284	9	158	5	138	8	100	6
58	719	26	260	13	507	27	163	9	325	19	170	10

Q1 Comparison - Average Daily Boardings by Route												
Route	Weekday				Saturday				Sunday			
	19/20		20/21		19/20		20/21		19/20		20/21	
	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr
59	1,955	25	360	16	809	35	310	13	487	21	277	11
60	2,743	37	775	18	1,971	49	619	15	1,193	42	542	19
61	2,229	29	675	14	1,233	32	451	11	876	23	449	12
62	830	27	242	12	569	25	203	9	268	17	111	7
63	781	44	300	14								
64	587	32	238	5								
65	258	16	53	4	105	8	43	3	51	8	29	5
66	1,547	26	351	19	517	32	222	15	284	18	184	12
68	1,389	29	408	12	848	29	299	10	504	18	245	8
72	1,382	30	588	13	1,090	23	474	11	468	17	276	10
82			93	6			69	4			60	4
83			48	4			39	4			29	3
84	901	31	341	6			151	4			126	4
85			64	4			45	5			43	6
86			89	6			63	4			55	4
87	1,256	28	541	10	1,237	25	384	7	523	18	241	8
88	94	16	92	7	75	14	70	5	22	9	61	5
89	197	16			81	11			55	7		
90	1,280	27	524	8	957	21	334	5	418	16	194	6
91			186	7			126	6			146	5
93												
401	154	13	58	5								
415	215	14	29	4	162	16			148	12		
433	51	10	27	5								
Alderney	3,350	112	462	36	4,049	231	355	24	2,879	165	154	11
Woodside	2,139	102	188	20								

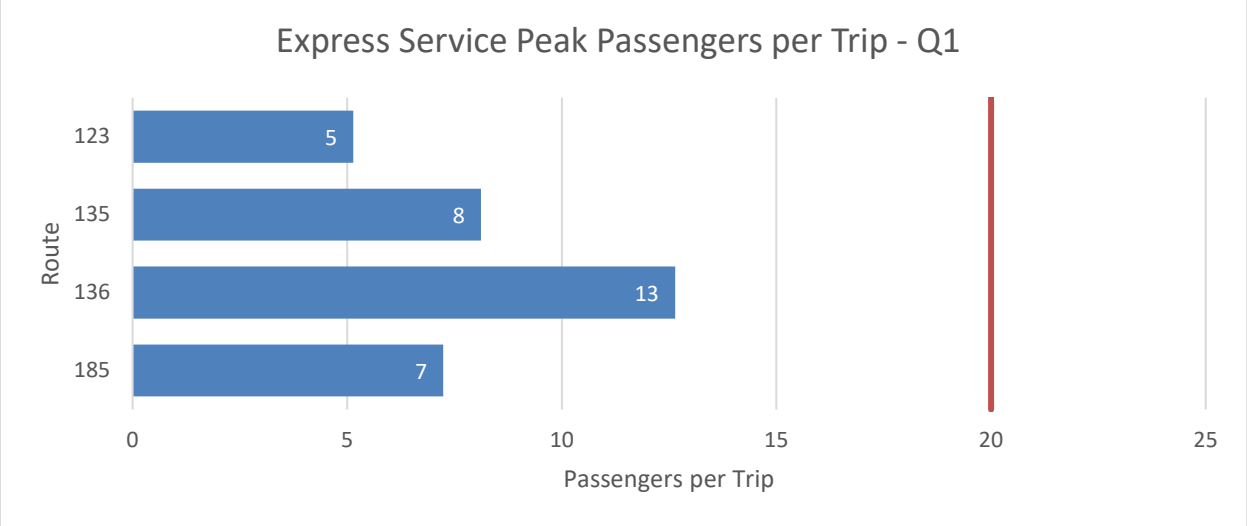
Passengers per Hour by Route



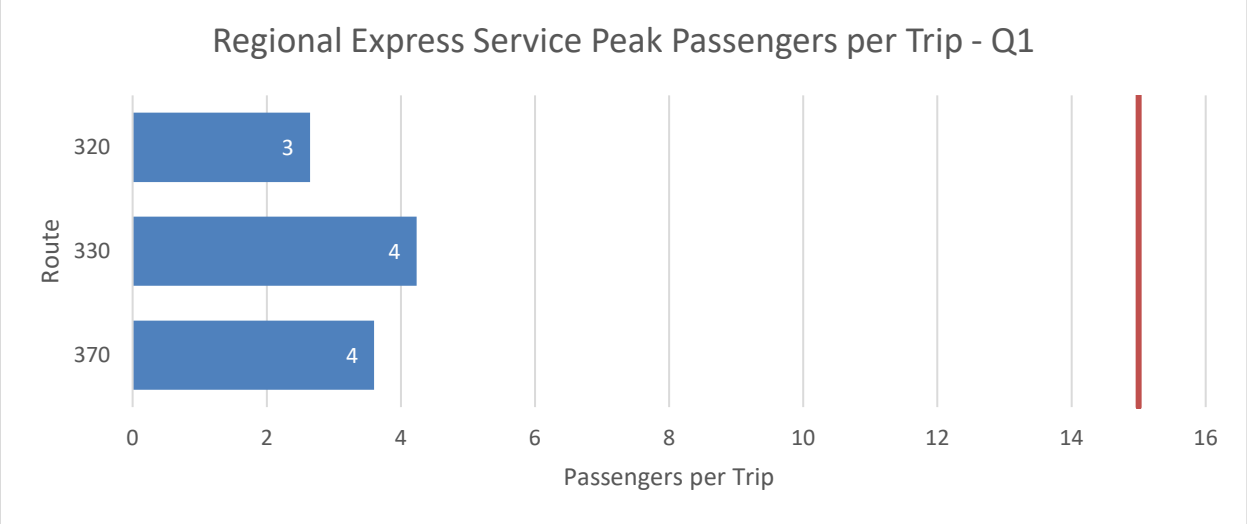
Express Service Peak Boardings and Passengers per Trip

Q1 Comparison - Average Daily Peak Boardings by Express Route				
Route	Weekday			
	19/20		20/21	
	Boardings	Pass/Trip	Boardings	Pass/Trip
123	285	20	72	5
135	531	38	114	8
136	596	37	202	13
185			188	7
320	216	18	19	3
330	376	18	40	4
370	103	9	37	4

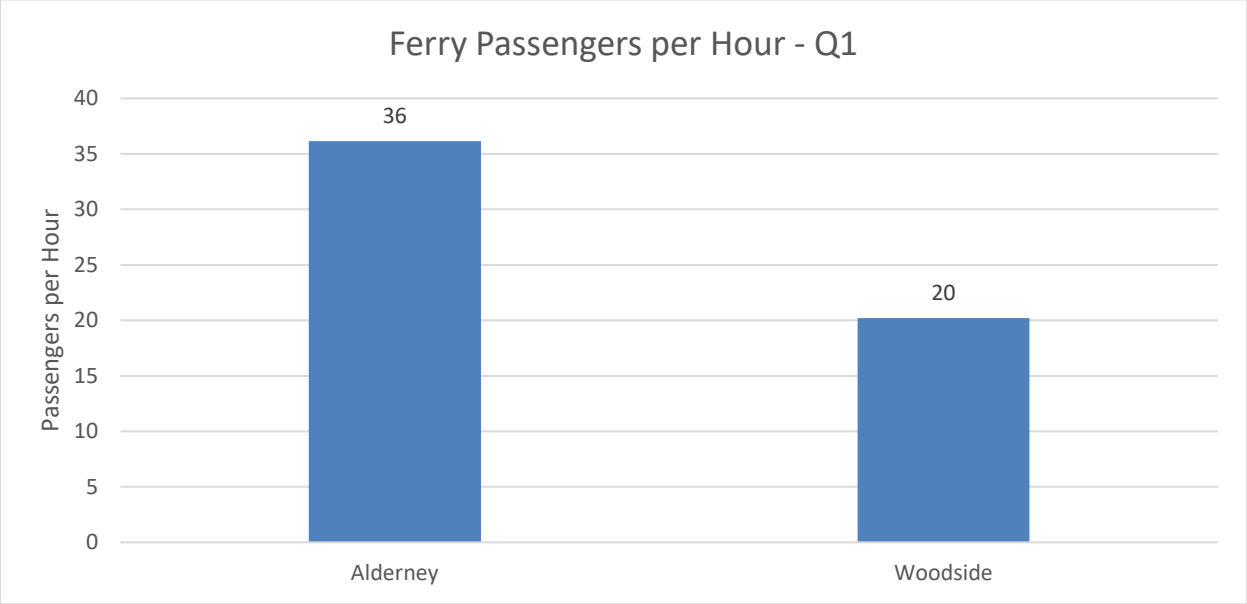
Express Service Peak Passengers per Trip by Route



Regional Express Peak Passengers per Trip by Route



Ferry Passengers per Hour

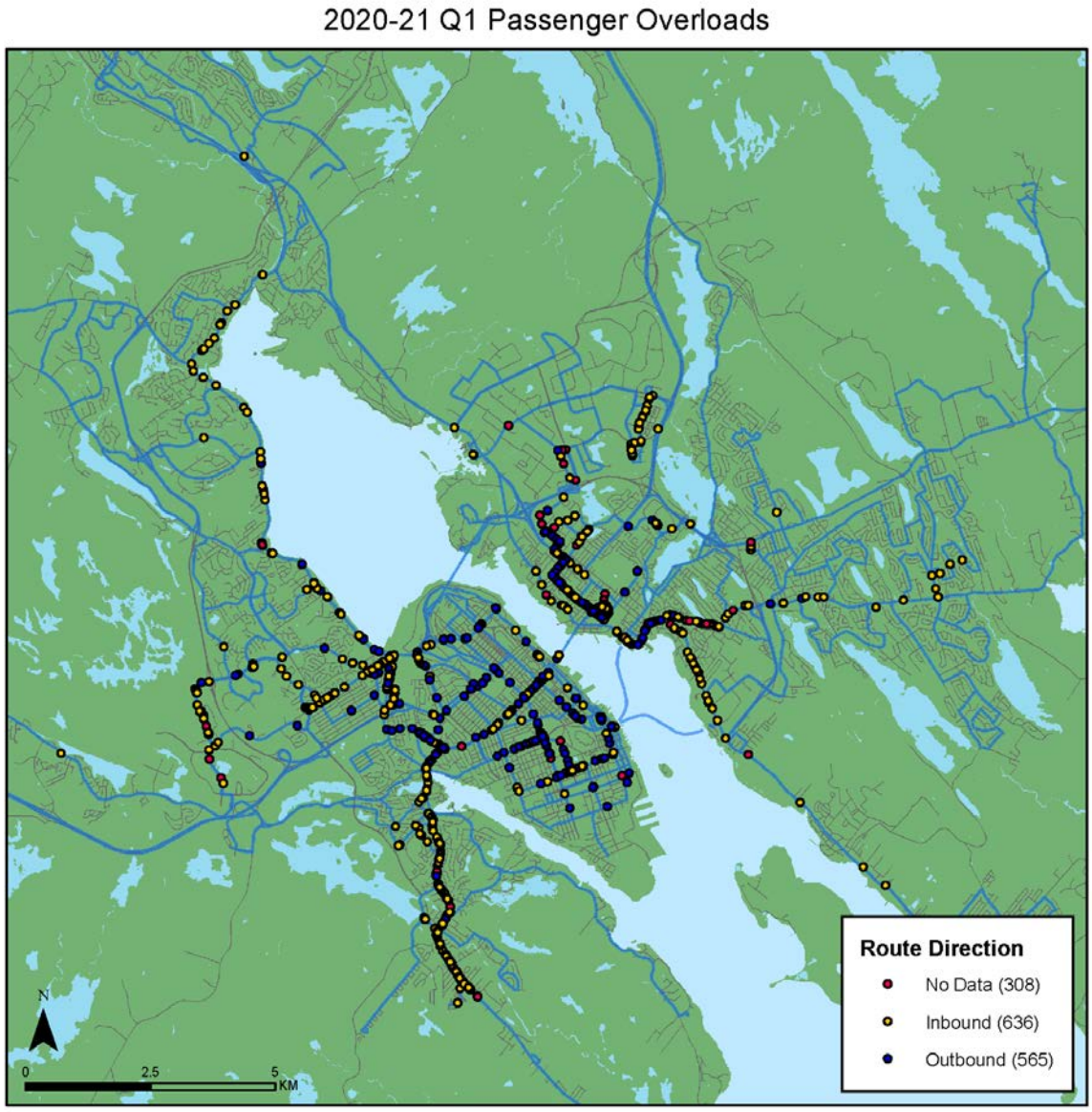


Passenger Overloads

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.

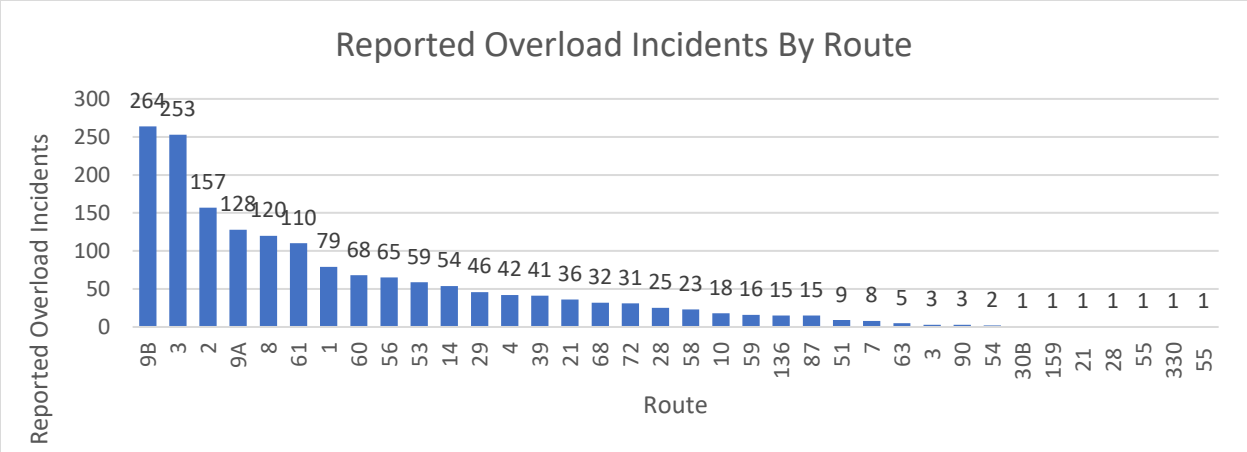
Passenger Overloads by Area

The figure below shows the locations of reported overloads during the first quarter.



Passenger Overloads by Route

The following graph shows overloaded routes during the first quarter. 1734 overloads incidents were reported during the first quarter of 2020/21. This increase resulted from significantly reduced capacity available aboard buses with the temporary physicall distancing requirements during the COVID-19 pandemic, including limits on standees and seating.



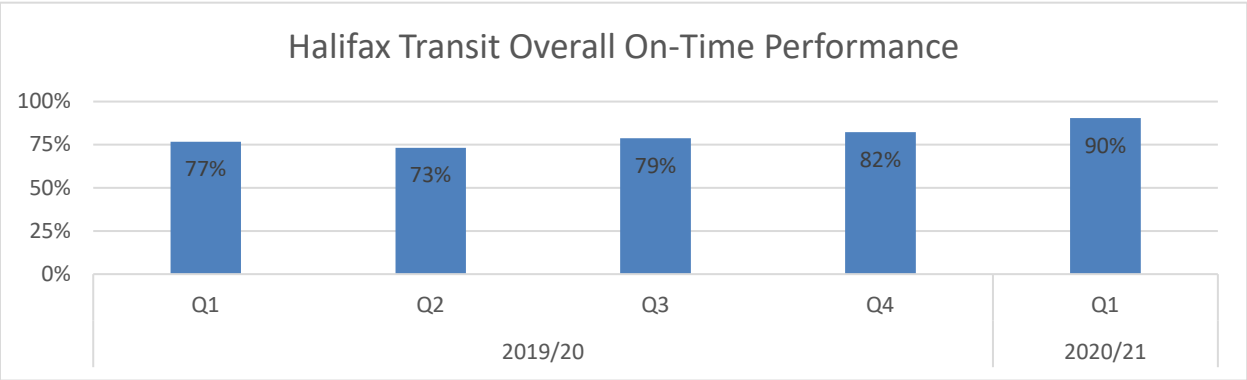
On-Time Performance

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 timepoints and have assigned and publicized scheduled arrival times. On-time performance demonstrates the percentage of observed timepoint arrivals that are between one minute early and three minutes late.

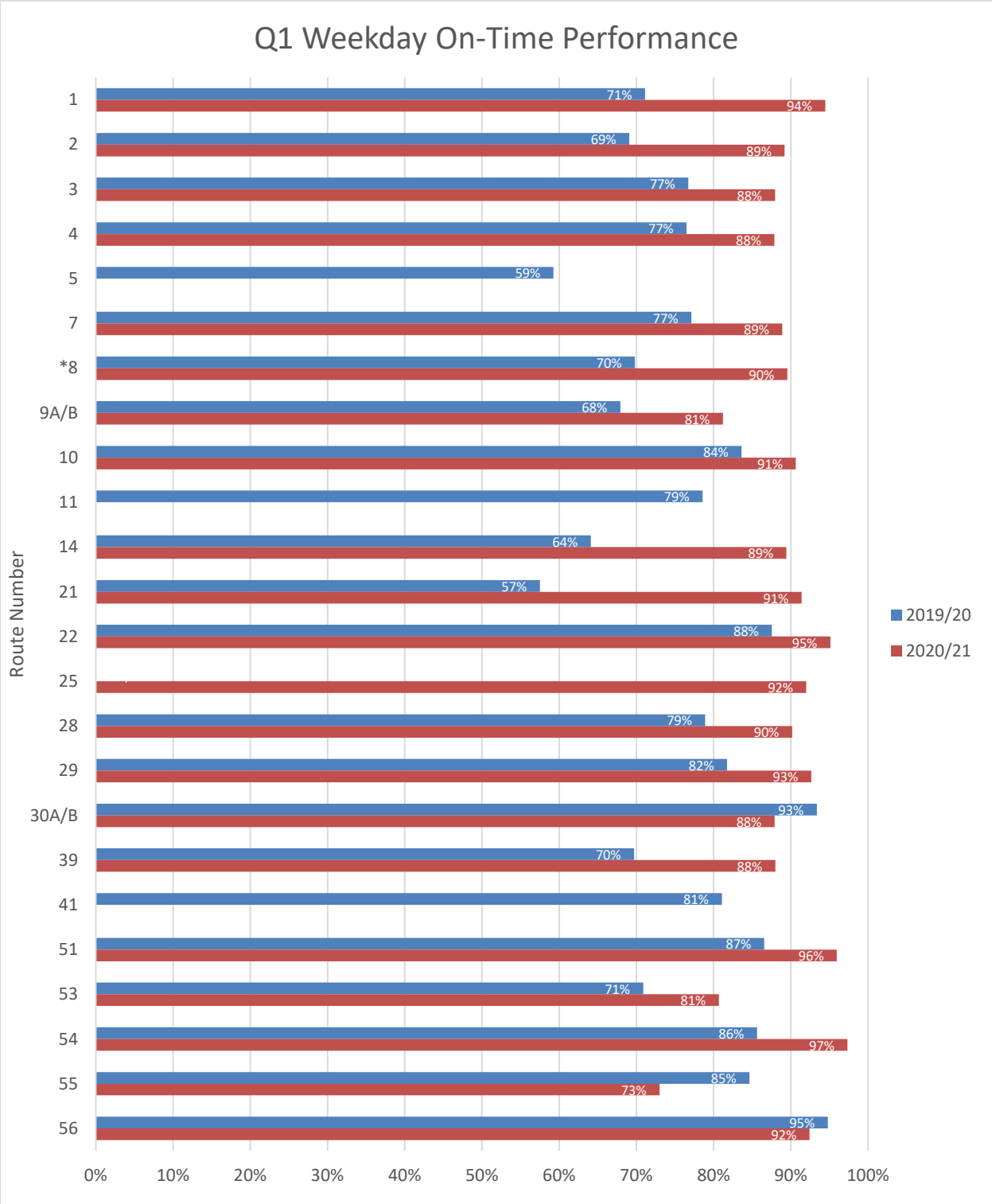
Transit industry standard targets for on-time performance tend to range between 85% and 90%, although service types are not always comparably grouped, nor are schedule adherence definitions consistent between agencies. Halifax Transit will analyze on-time performance across the network in order to establish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

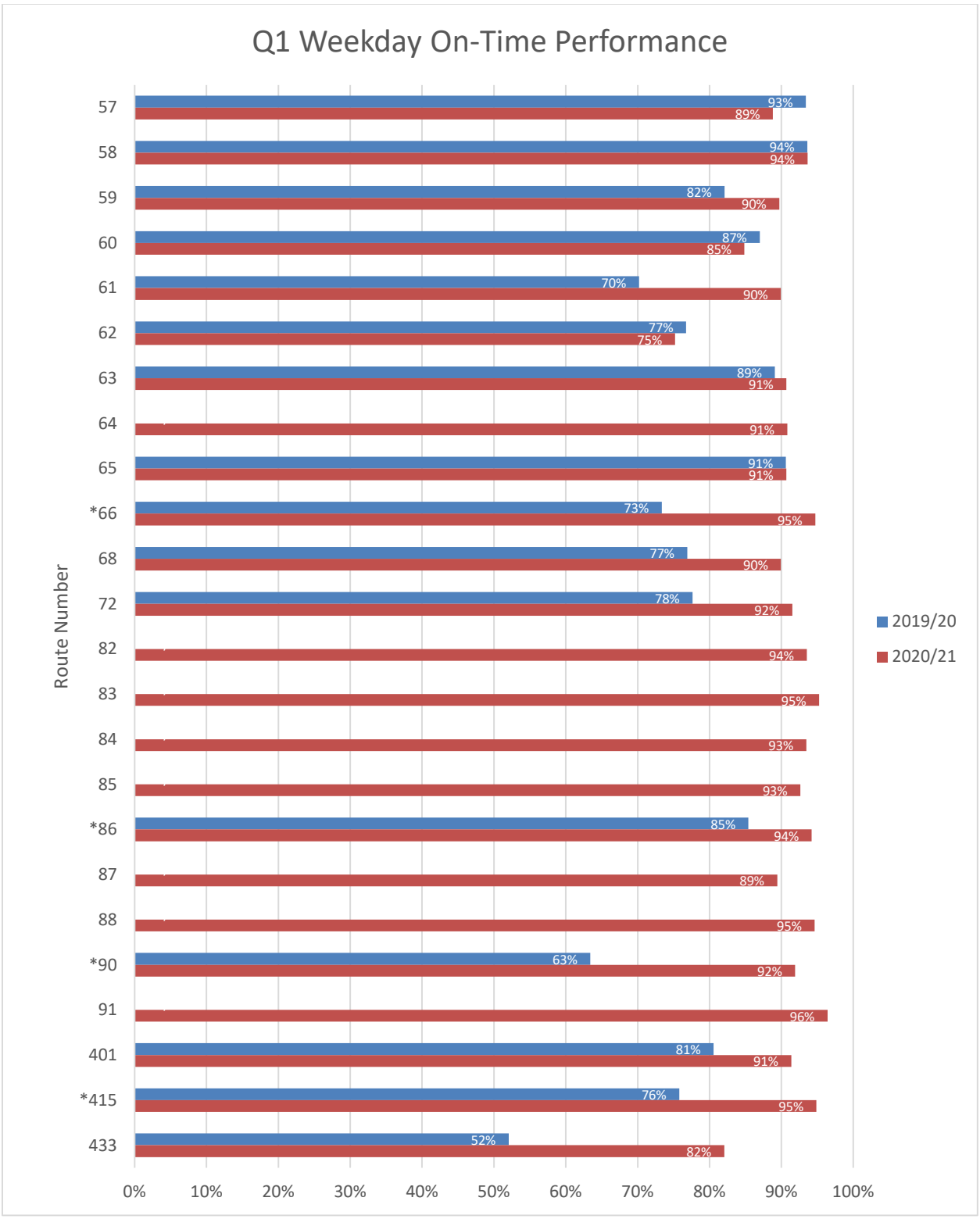
The onset of the COVID-19 pandemic in early 2020 resulted in the need to rapidly implement emergency service adjustments to the weekday schedules. Data collection was temporarily disrupted due to these emergency service reductions, while bus schedules were unable to be synchronized with technology solutions. Consequently, data reporting tied to the weekday schedules was impacted between March 23rd and May 4th. Schedule adherence data for weekdays during this period was unavailable and instead covers May 4th through June 30th. Compared to the first quarter last year, on-time performance improved 13%, from 77% to 90%. This included the implementation of new routes in November 2019, some of which were on new streets where previous transit data was unavailable.

Overall Network On-Time Performance



Weekday On-Time Performance




Q1 Weekday On-Time Performance
Route Number
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76%
95%
52%
82%
0%
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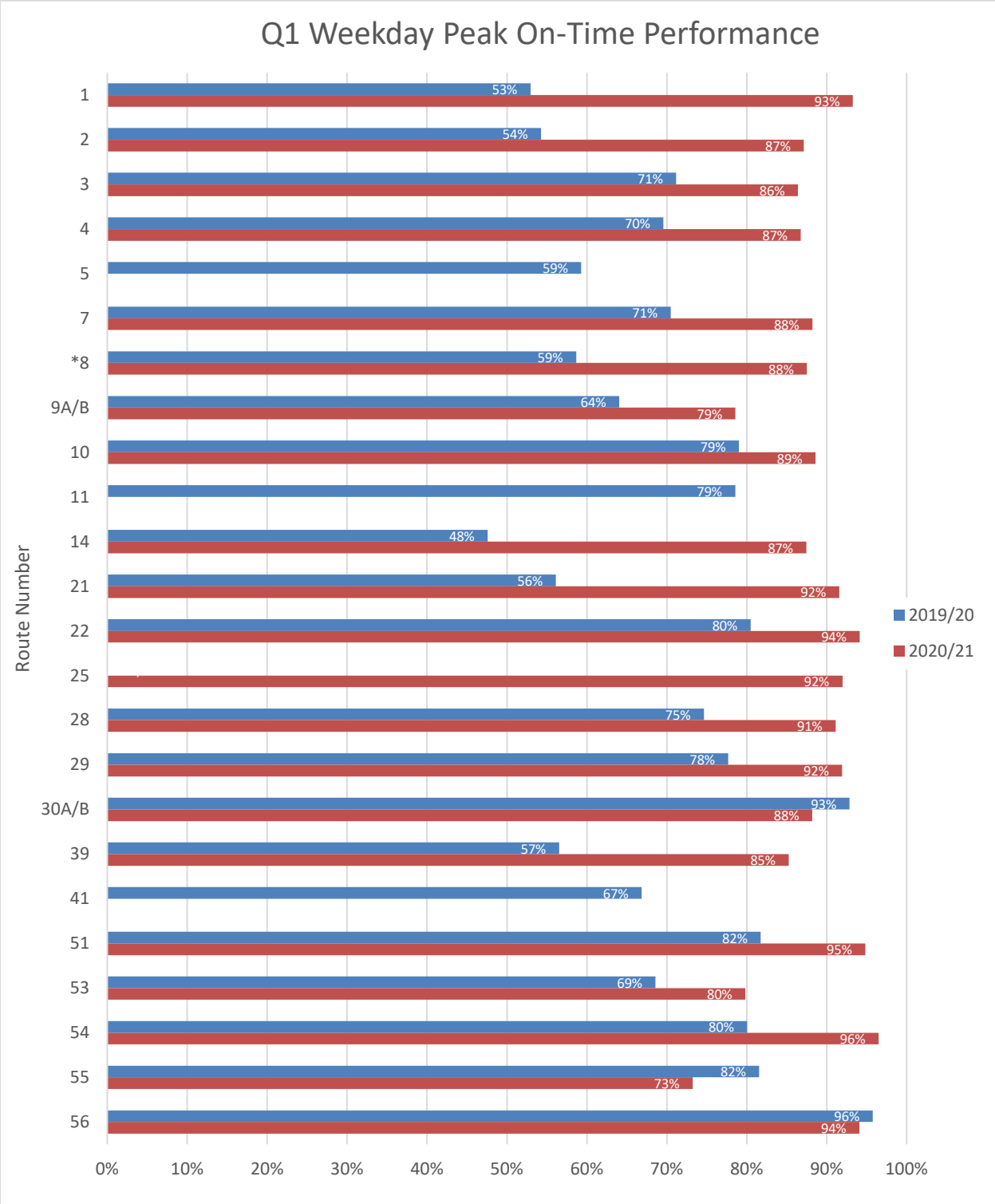
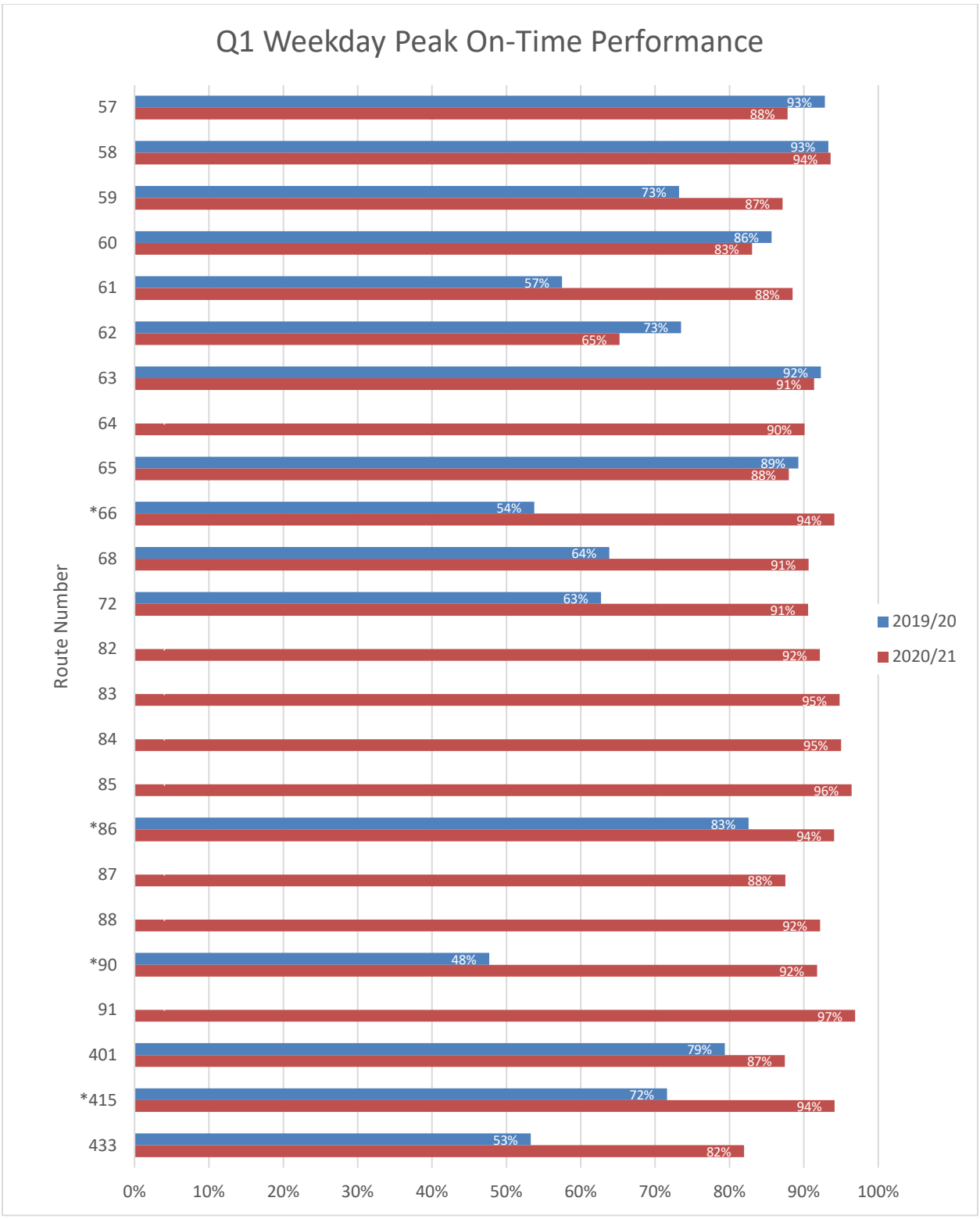
50%
60%
70%
80%
90%
100%
2019/20
2020/21

Weekday Peak Period On-Time Performance




Q1 Weekday Peak On-Time Performance
Route Number
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70%
80%
90%
100%
2019/20
2020/21

Express Service On-Time Performance

On-time performance demonstrates the percentage of timepoint 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.