2019/20 – Q4
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. 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. Fare collection ceased on March 18th, tickets and passes were no longer required to board. Schedule adherence data for weekdays during this period was also unavailable and instead covers January through to March 20th.

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.

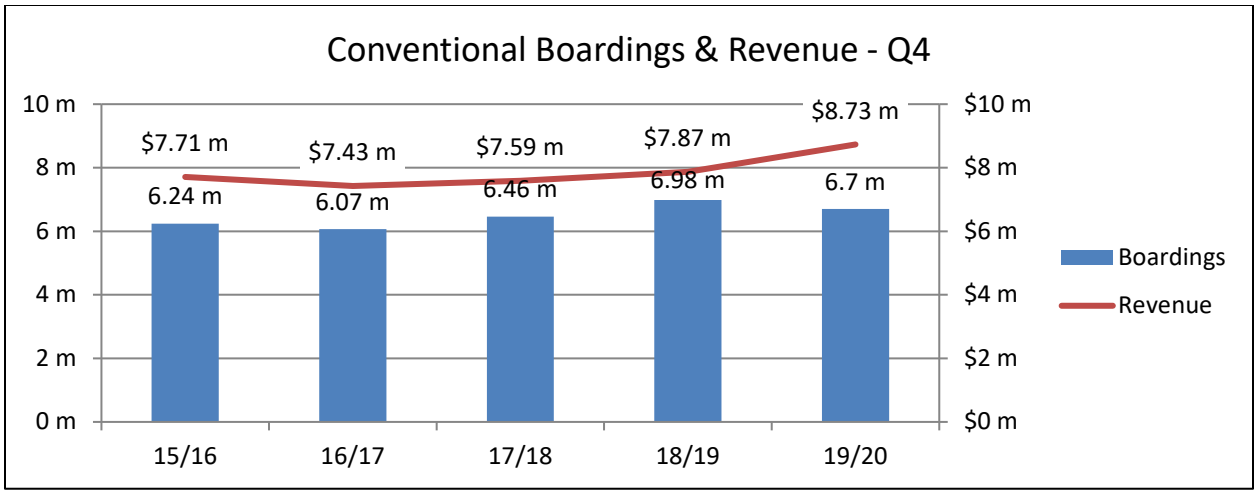
Automatic Passenger Counter (APC) systems installed throughout the network in 2017/18 enable Halifax Transit to track the number of boardings by counting passengers entering the bus at each stop, instead of estimating boardings from revenue. Therefore, the data source for boardings in the chart below 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.

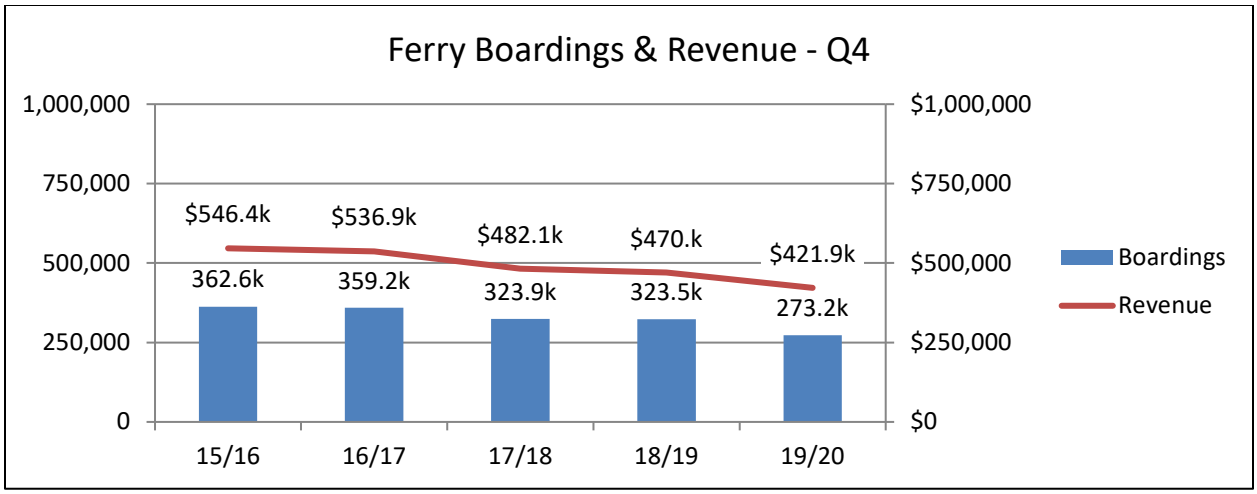
In the fourth quarter, conventional boardings decreased 4% from this quarter last year, ferry boardings decreased 15.5% and Access-A-Bus boardings decreased 10.1%. Overall, system wide boardings decreased 4.5% compared to fourth quarter last year.

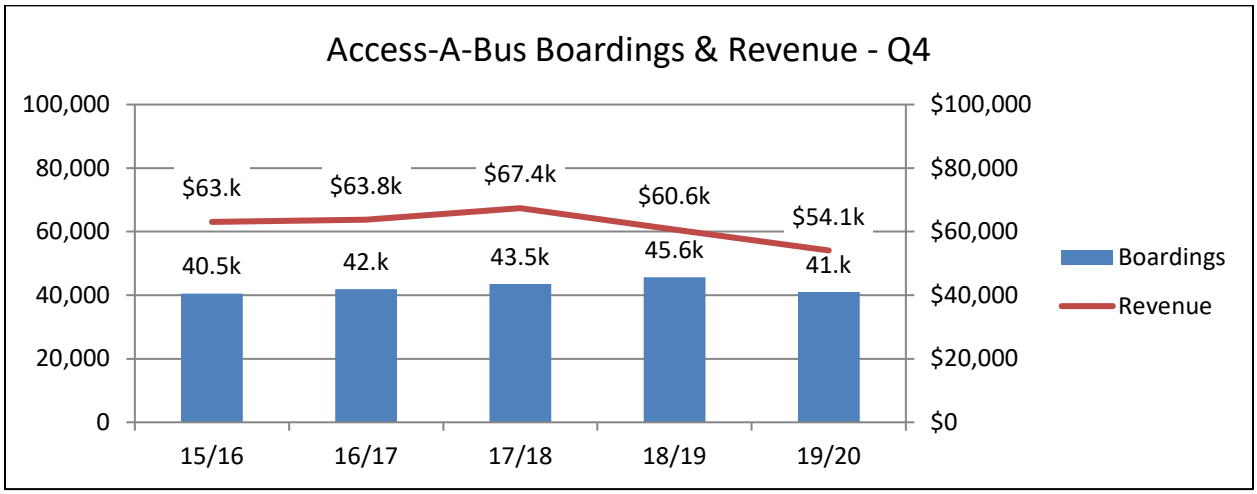
Decreases in boardings are attributable to COVID-19, prior to the pandemic, conventional boardings were on pase to increase 10.1%, ferry boardings were on pace to increase 6.7%, and Access-A-Bus boardings were on pace to increase 1.1%. Overall boardings were on pace to increase 9.9%.

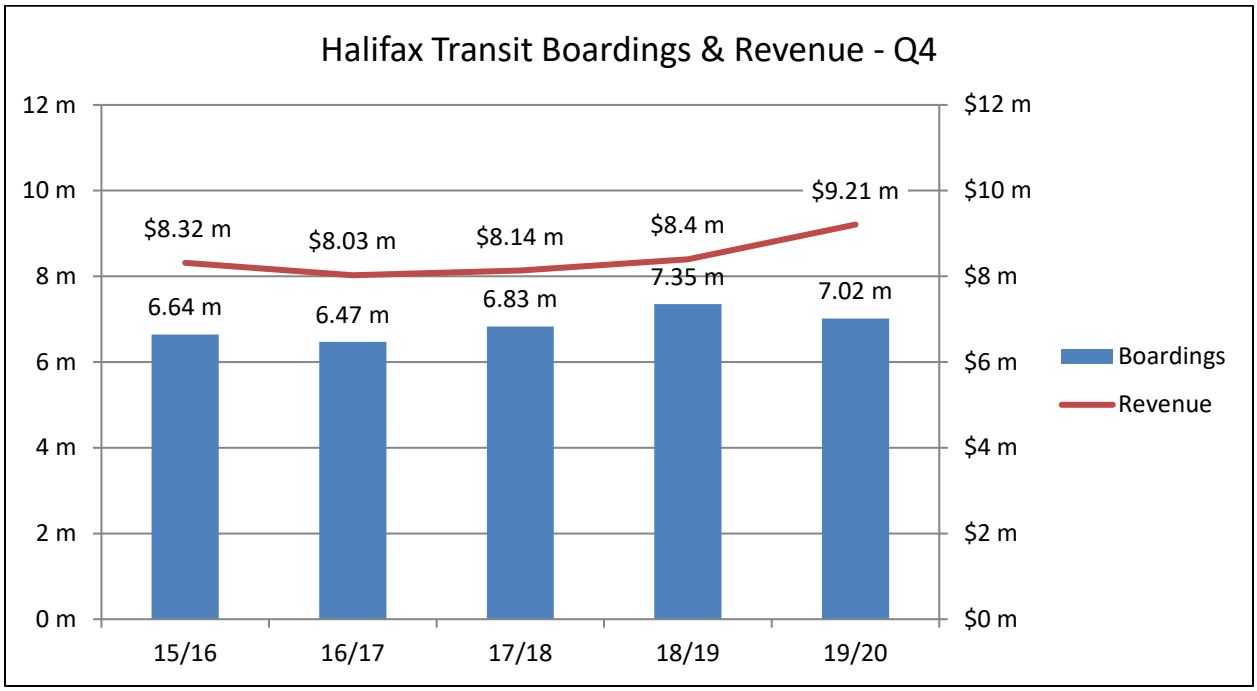
Revenue in March was largely unaffected by the pandemic. Prior to the month of March, overall revenue was on pace to increase 13.2% from this quarter last year. Overall revenue in the fourth quarter increased 9.7% from this quarter last year.

Historical Boardings & Revenue




Ferry Boardings & Revenue - Q4
1,000,000
750,000
500,000
250,000
0
$1,000,000
$750,000
$500,000
$250,000
$0
$546.4k
$536.9k
$482.1k
$470.k
$421.9k
362.6k
359.2k
323.9k
323.5k
273.2k
15/16
16/17
17/18
18/19
19/20
Boardings
Revenue

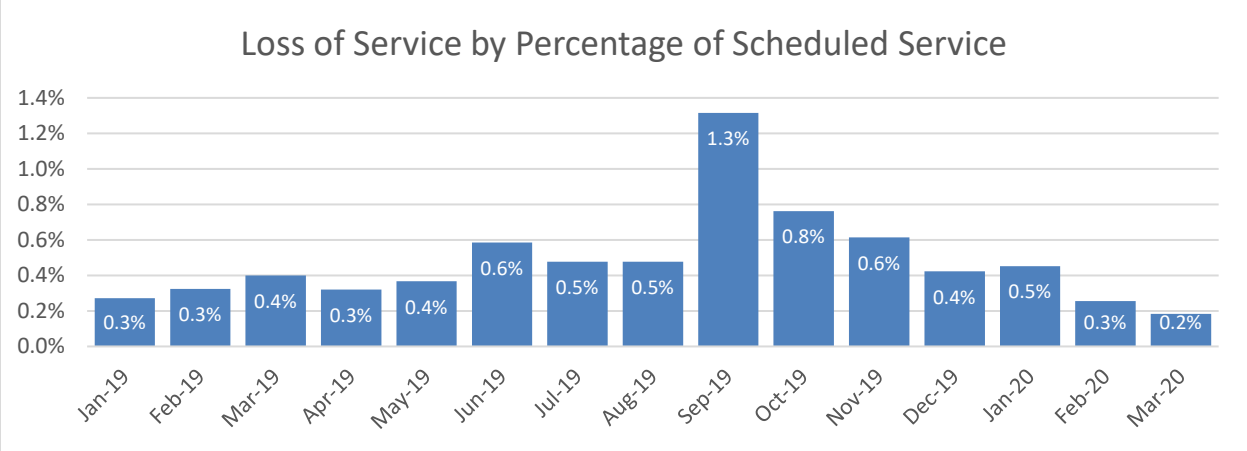

Access-A-Bus Boardings & Revenue - Q4
100,000
80,000
60,000
40,000
20,000
0
$100,000
$80,000
$60,000
$40,000
$20,000
$0
$63.k
$63.8k
$67.4k
$60.6k
$54.1k
40.5k
42.k
43.5k
45.6k
41.k
15/16
16/17
17/18
18/19
19/20
Boardings
Revenue


Halifax Transit Boardings & Revenue - Q4
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
$8.32 m
$8.03 m
$8.14 m
$8.4 m
$9.21 m
6.64 m
6.47 m
6.83 m
7.35 m
7.02 m
15/16
16/17
17/18
18/19
19/20
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 fourth quarter, the total loss of service was 609 hours, which is 0.3% of the quarterly revenue hours. The table below shows the total loss of service for each month. September 2019 figures do not include service lost due to Hurricane Dorian.

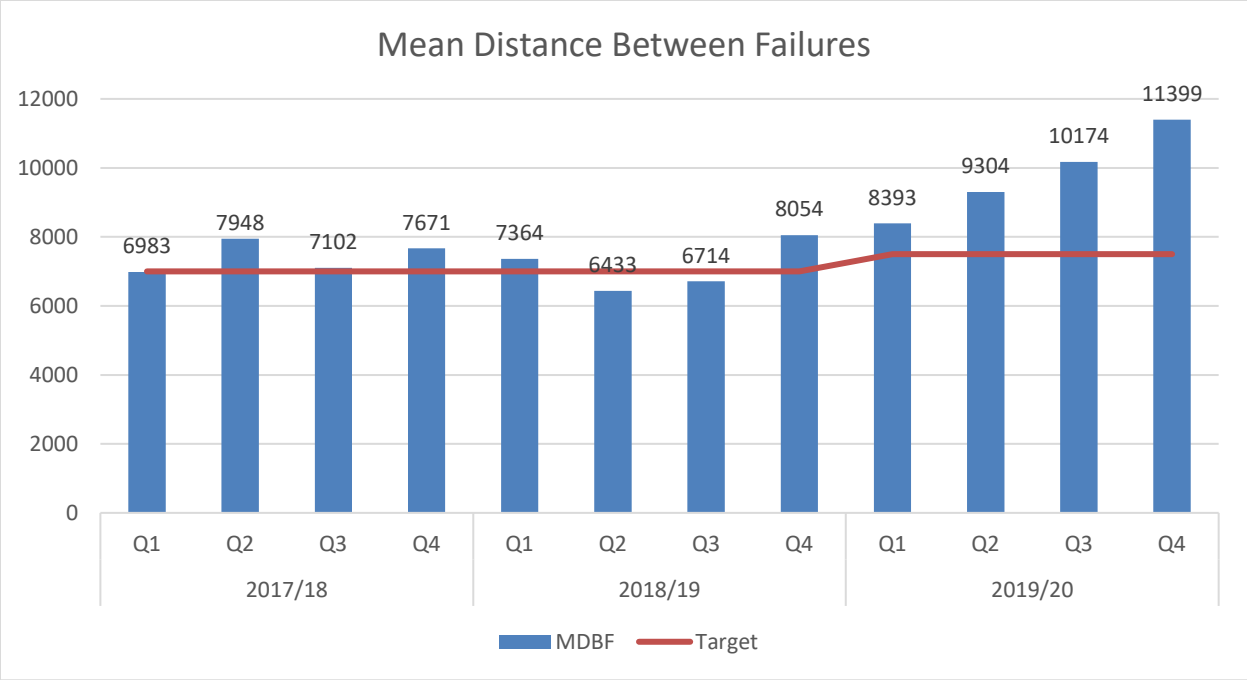


Mean Distance Between Failures

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 had set a target of 7,500 kms for 2019/20. 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 fourth quarter of 2019, the MDBF for conventional transit was 11,399 kms. This is equivalent to a 41.5% improvement from the fourth quarter of the previous year (2018/19). Bus Maintenance will continue to monitor this KPI and has implemented new preventative maintenance measures to reduce aftertreatment and cooling system defects.

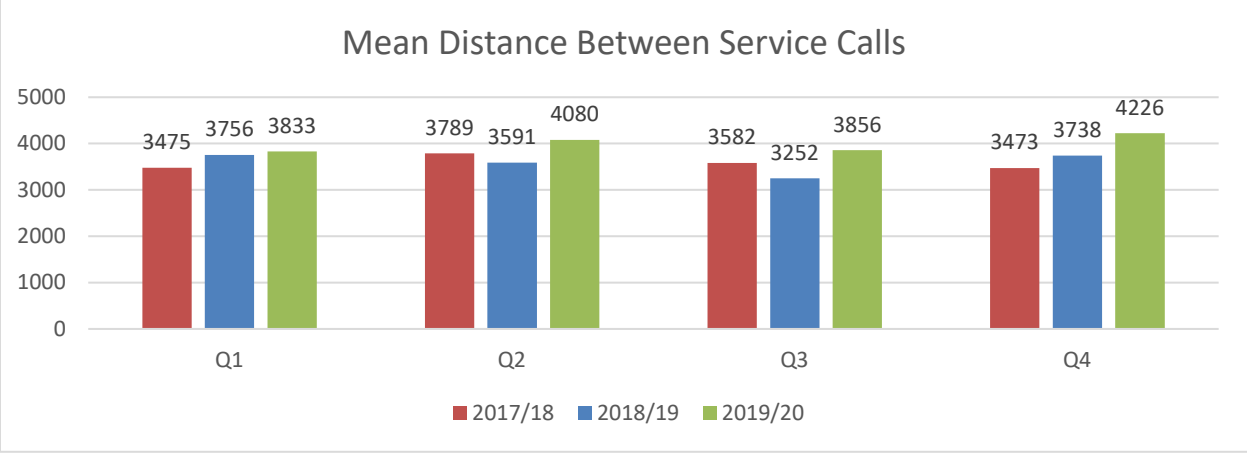


Mean Distance Between Service Calls

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.

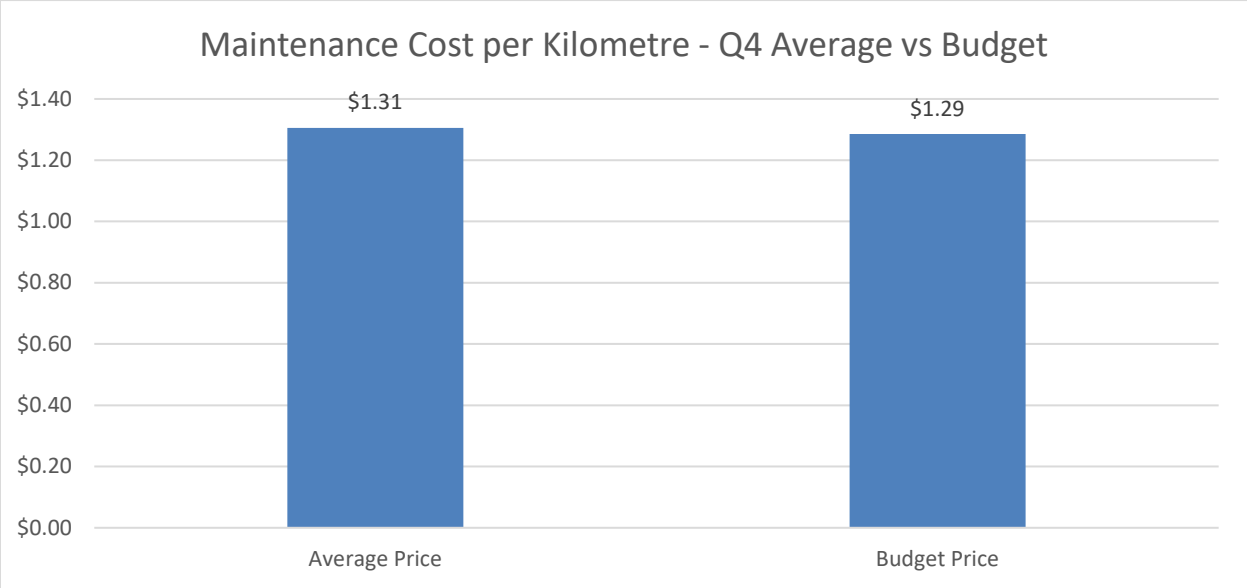
For the fourth quarter of 2019/20, the MDBS for conventional transit was 4,226 kms. In comparison to the fourth quarter of 2018/19 (3,738), this is an improvement of 13%. Overall, the Mean Distance Between Service Calls has improved by 12% in 2019/20 over 2018/19. Therefore, bus reliability for conventional transit continues to improve significantly.

For the fourth quarter of 2019/20, the MDBS for Access-A-Bus service was 97,879 kms. Bus Maintenance will continue to monitor this metric in order to reduce service calls.



Bus Maintenance Cost – Quarter Average vs Budget

In the fourth quarter maintenance costs were $1.31/km, while the budgeted maintenance cost was $1.29/km. Therefore, in the fourth quarter the average cost per km was over budget by $0.02/km. The overage is mostly attributed to seasonal fluctuations and is typical during the winter season. Bus Maintenance will continue to strengthen the budgeting process to improve accuracy of future budgets.



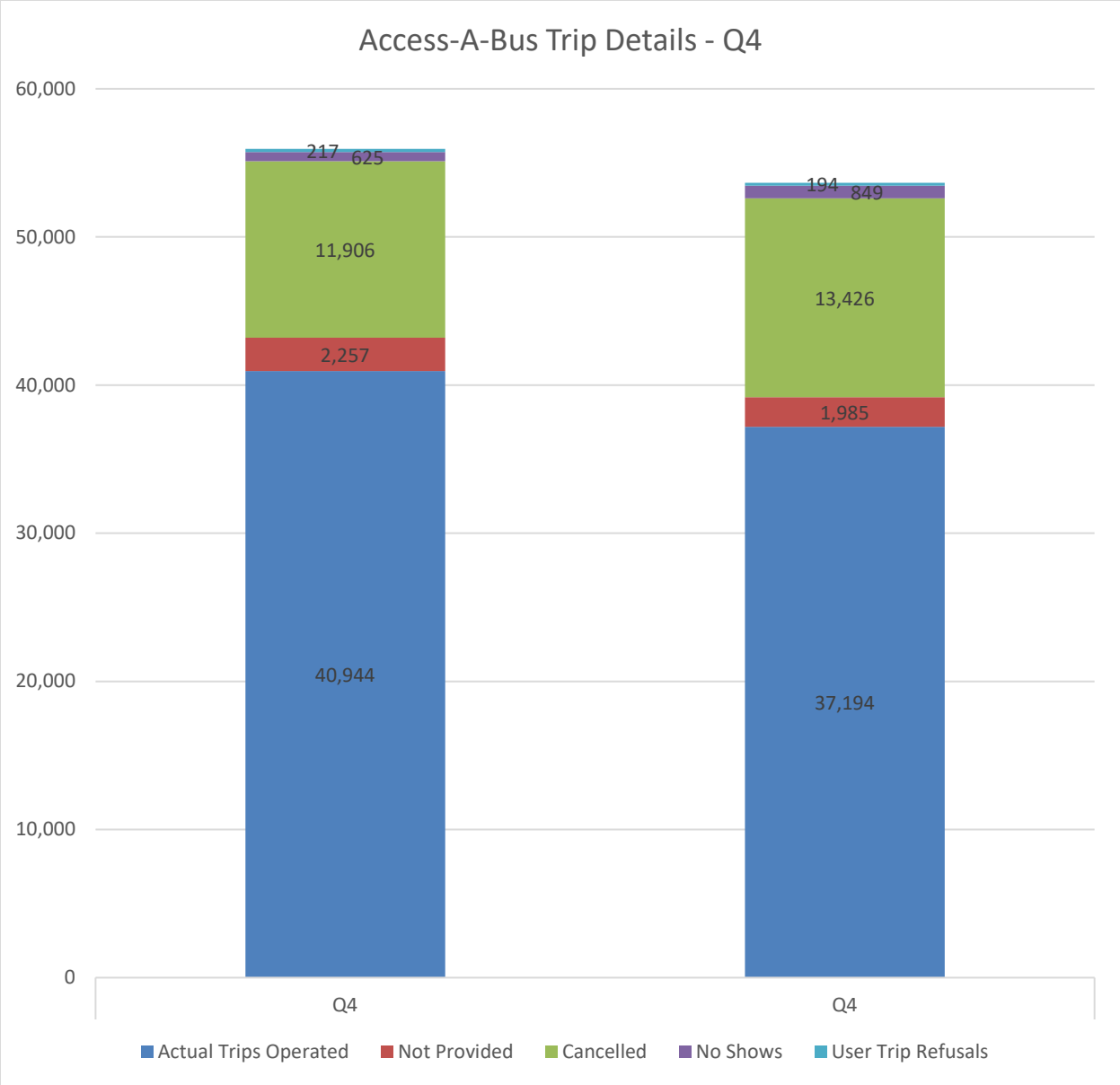
Access-A-Bus Trip Details

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 fourth quarter of 2019/20, 3,740 fewer trips were operated compared to this quarter last year, a decrease of 9.2%. The trips that were not provided decreased by 12%, compared to this quarter last year.

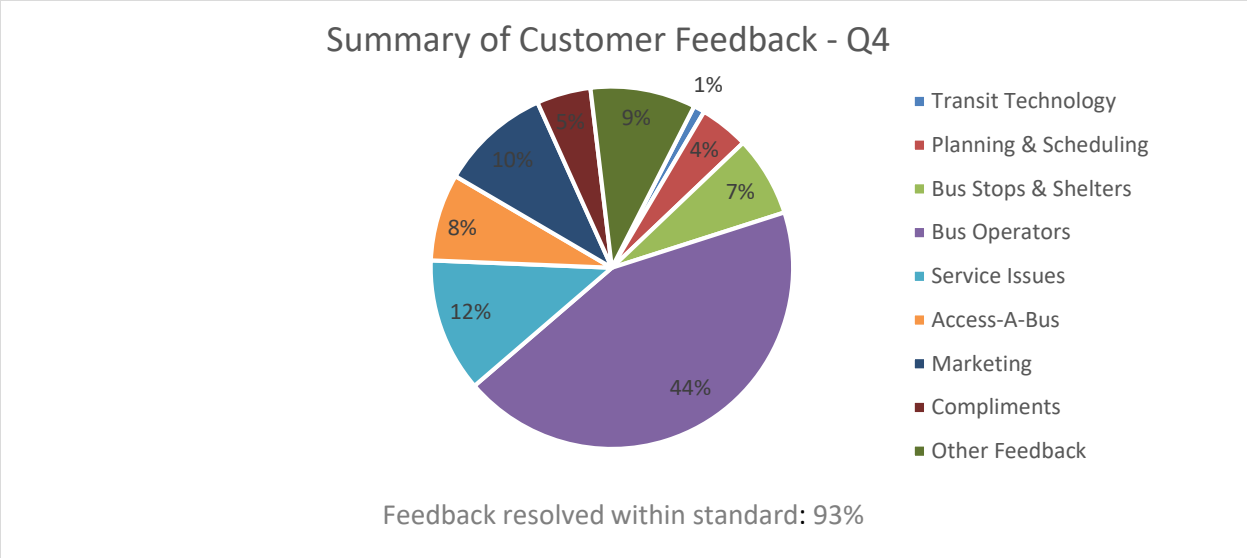
Prior to COVID-19, trips operated were on pace to increase 2.1%, while trips not provided were on pace to decrease 14.3%

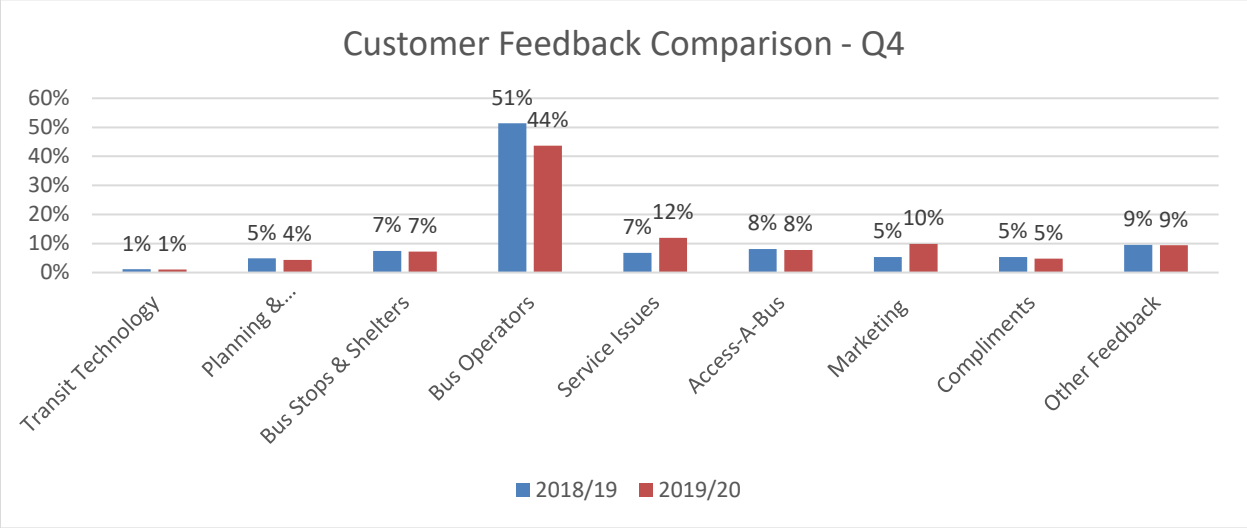


Customer Service – All Services

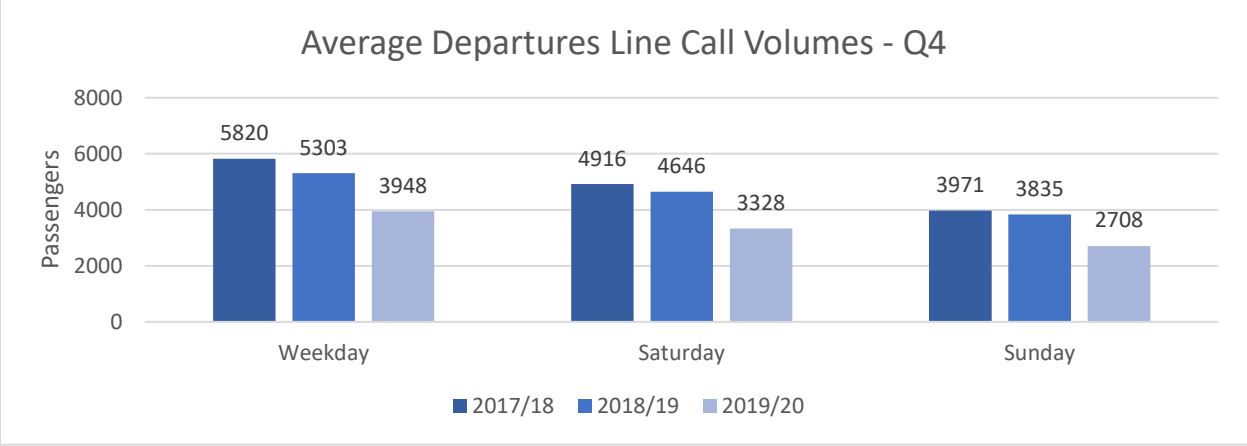
Customer service statistics are measured monthly using the Hansen Customer Relationship Management software along with Crystal Reports. Feedback is first categorized by subject matter and then divided into two categories: feedback resolved within service standard and feedback resolved outside service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

In the fourth quarter, 44% of feedback received was related to bus Operators. The remaining 56% 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 93% 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 fourth quarter of 2019/20, average call volumes were lower than this time last year for weekdays as well as for Saturdays and Sundays.



Service Utilization

Automatic Passenger Counter (APC) data is now being been used to report bus passenger boardings. The APCs provide data within a 90% degree of accuracy. Boardings by Route demonstrate passenger usage during the 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.

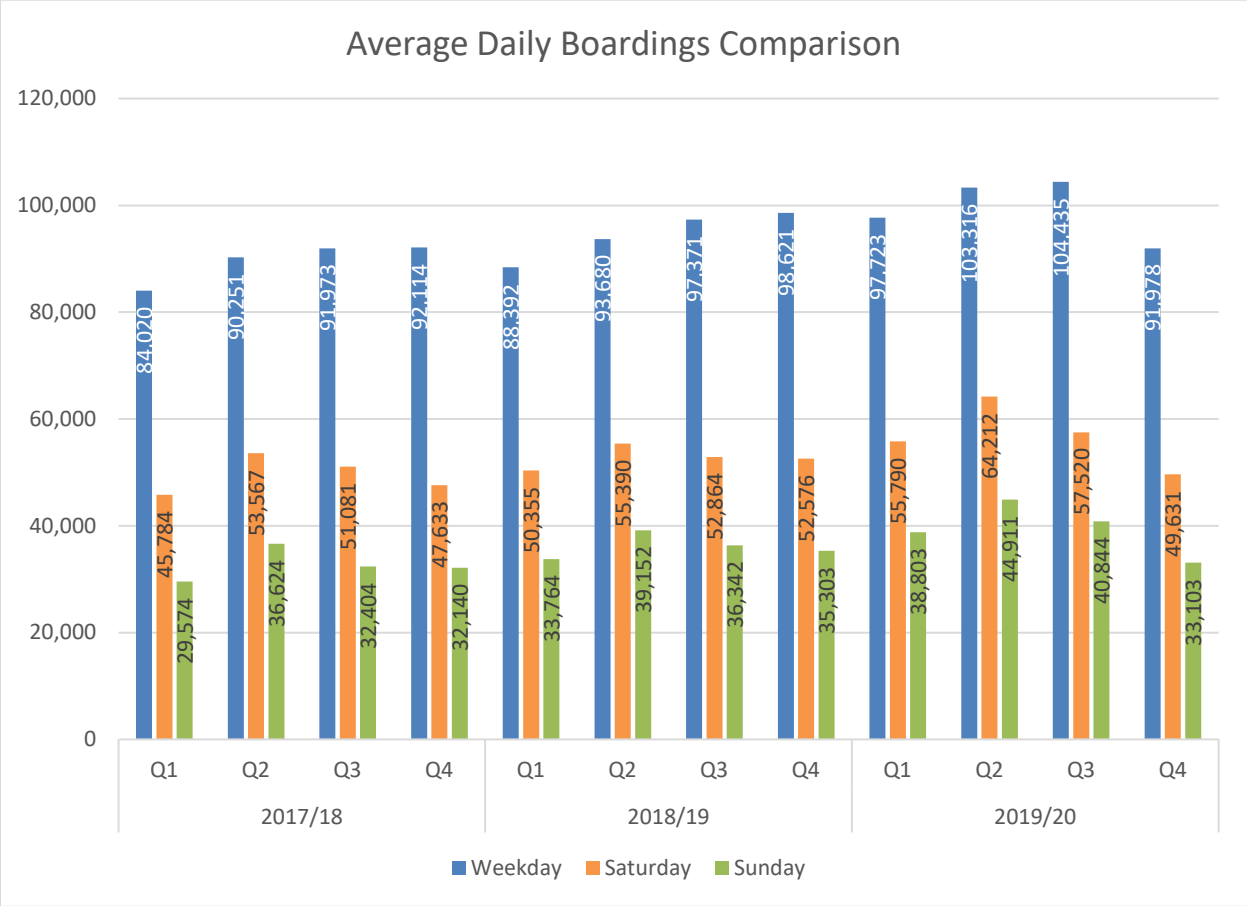
As large-scale service adjustments were implemented mid third quarter, on November 25, some routes have since been discontinued. Instances were route numbers have been reused post implementation are labelled 'old versus 'new'.

Boardings

Average weekday boardings in the fourth quarter were 91,978 ± 28,885 (31.4% variance). Average Saturday boardings this quarter were 49,631 ± 13,689 (27.6% variance). Average Sunday boardings this quarter were 33,103 ± 9,922 (30% variance).

These figures are impacted by COVID-19; prior to the pandemic average weekday boardings in the fourth quarter were 104,030 ± 15,716 (15.1% variance). Average Saturday boardings this quarter were 55,104 ± 3,956 (7.2% variance). Average Sunday boardings this quarter were 36,627 ± 5,562 (15.2% variance).

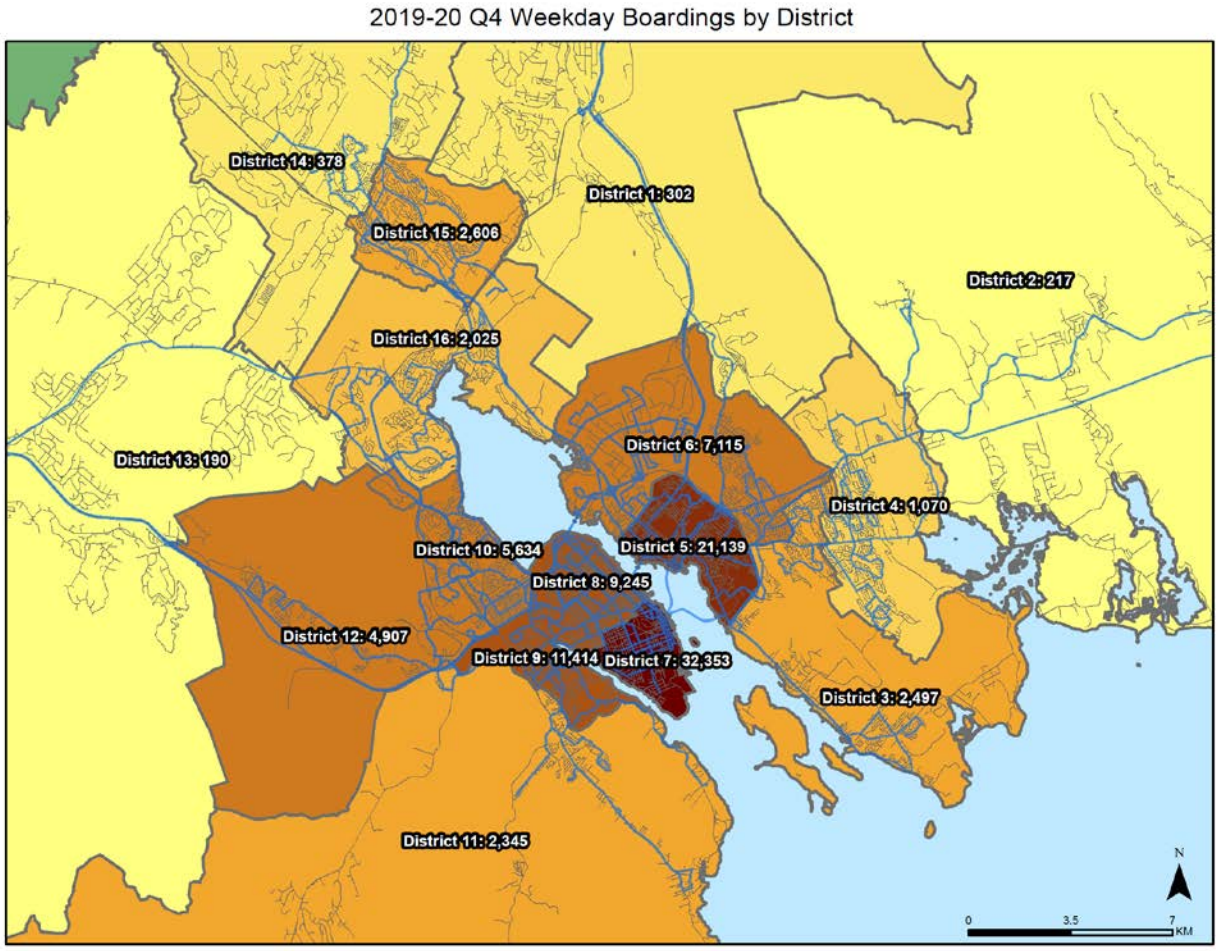
Average Daily Boardings by Service Day



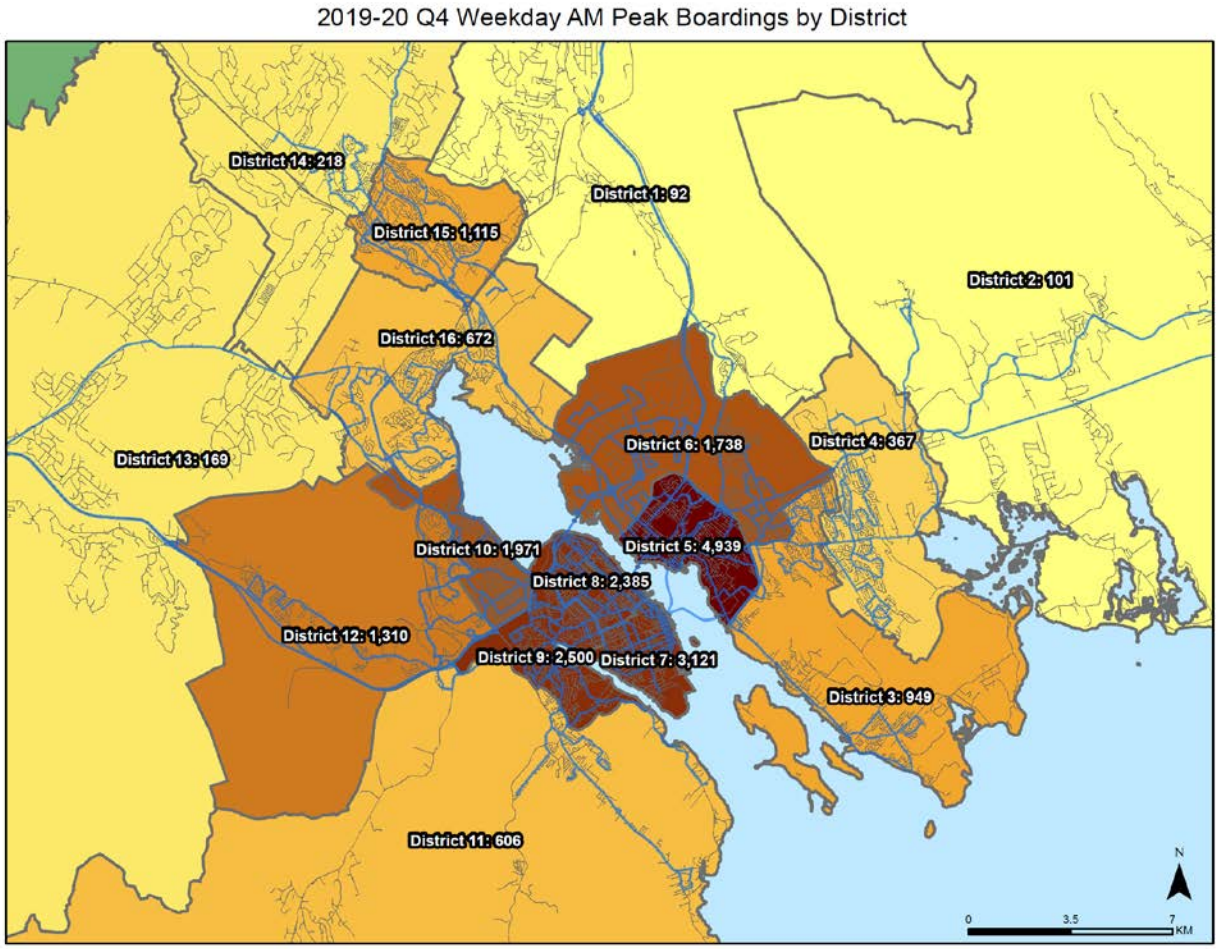
Boardings by District

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 Q4 represents January to March 20th, following March 20th weekday data for boardings and hours was unavailable due to emergency schedule adjustments.

Boardings & Passengers per Hour

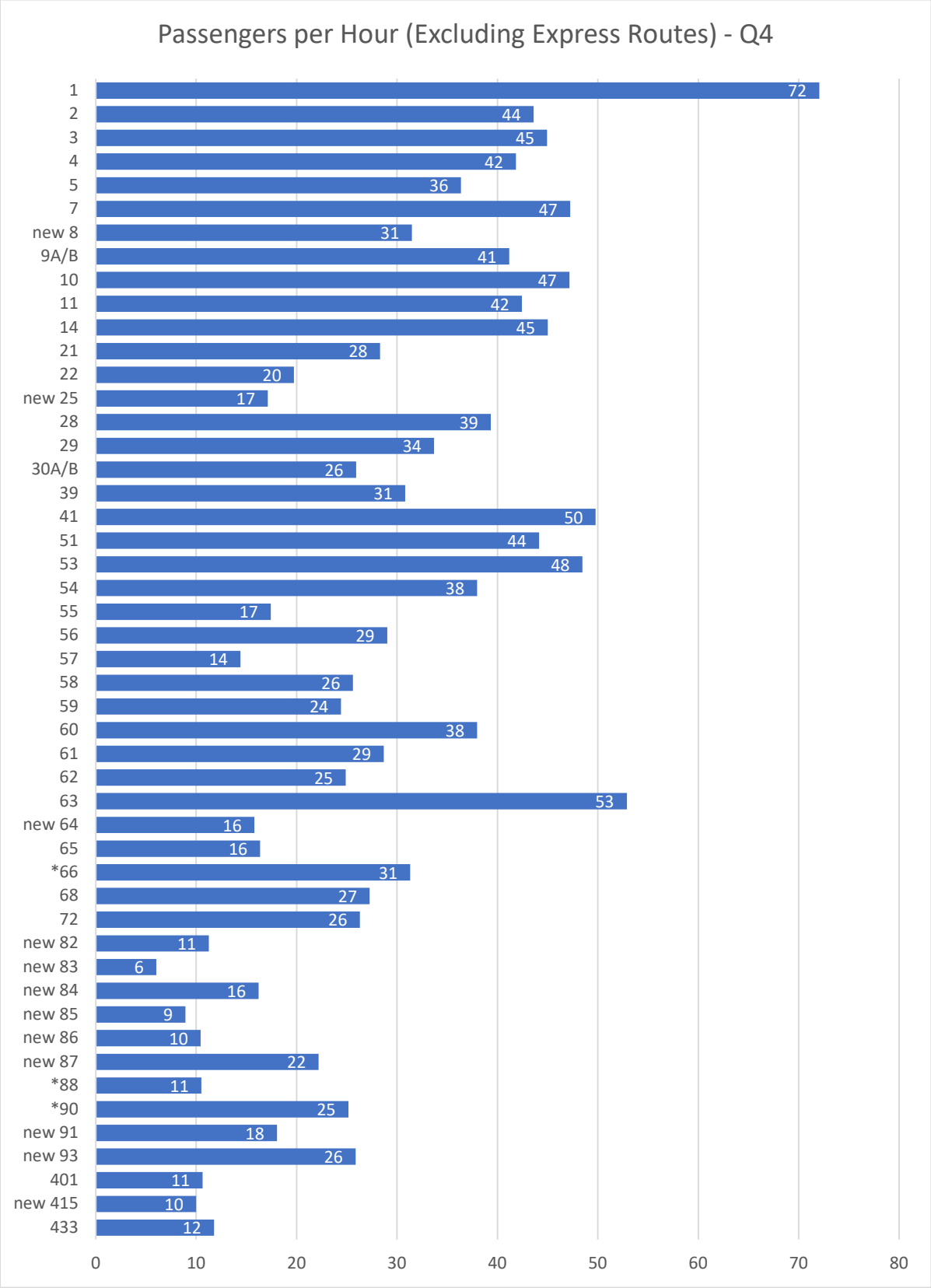
Q4 Comparison - Average Daily Boardings by Route												
Route	Weekday				Saturday				Sunday			
	18/19		19/20		18/19		19/20		18/19		19/20	
	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr	Boardings	Pass/Hr
1	11,339	72	11,247	72	8,703	77	7,842	70	5,490	64	4,753	56
2	4,372	41	4,710	44	3,649	36	3,497	35	2,236	30	2,091	30
3	6,154	41	6,801	45	3,208	37	3,231	38	3,350	35	3,043	32
4	5,318	42	5,380	42	2,092	42	1,890	38	1,833	41	1,483	33
5	129	32	139	36								
7	5,423	47	5,380	47	3,667	39	3,364	36	1,929	36	1,867	36
***8**	4,231	34	4,400	31	3,299	31	2,804	26	2,502	28	2,100	19
9A/B	6,649	39	6,962	41	3,493	48	3,318	46	2,749	39	2,554	35
9A	4,543	41	4,730	43	1,652	47	1,560	44	1,244	36	1,130	32
9B	2,106	36	2,232	38	1,841	49	1,757	48	1,505	41	1,424	38
10	5,322	49	5,152	47	3,391	46	3,139	43	2,056	42	1,839	38
11	132	57	117	42								
14	2,940	46	2,890	45	1,445	43	1,235	37	1,102	37	1,082	37
21	897	30	876	28	765	22	721	21	472	26	469	26
22	627	20	647	20	387	12	436	13	347	10	341	10
new 25			389	17			183	11			175	16
28	1,260	34	1,470	39	1,189	29	1,198	27	581	32	543	26
29	3,190	35	3,139	34	1,760	28	1,562	25	1,250	21	1,113	19
30A/B	840	23	924	26	510	15	508	15	294	15	313	17
30A	454	24	495	28	282	16	276	16	128	11	140	15
30B	386	21	429	24	228	13	233	13	166	20	174	20
39	1,200	26	1,386	31	796	16	963	20	371	18	361	16
41	1,686	51	1,700	50								
51	1,054	44	1,059	44	554	33	503	31	298	33	252	25
53	1,226	47	1,284	48	734	49	680	45	328	40	294	35
54	793	37	815	38	460	29	450	29	240	24	230	23
55	384	18	384	17	219	14	207	13	169	11	139	9
56	853	26	925	29	912	26	957	27	583	18	490	15
57	519	13	586	14	221	7	246	8	118	7	146	8
58	698	25	707	26	415	22	365	20	329	19	304	17

Q4 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	1,884	24	1,897	24	747	32	685	30	505	21	440	19
60	2,746	36	2,905	38	1,695	43	1,605	39	1,098	39	1,136	41
61	2,188	29	2,229	29	1,052	27	996	26	804	21	833	22
62	766	24	796	25	494	22	455	21	245	15	233	15
63	821	46	858	53								
***64**	547	29	632	16								
65	256	15	272	16	87	7	83	6	51	8	43	7
***66**	1,380	22	964	31	502	31	419	26	299	19	265	16
68	1,303	27	1,308	27	779	27	680	23	488	18	455	15
72	1,337	29	1,217	26	931	20	896	20	482	18	391	14
new 82			226	11			136	9			96	6
new 83			82	6			60	6			42	4
new 84			964	16			307	9			227	8
new 85			122	9			84	9			52	7
new 86			165	10			106	6			80	6
***87**	1,167	26	1,245	22	972	20	682	13	450	15	356	12
***88**	82	14	142	11	49	9	107	7	22	9	65	5
***90**	1,416	30	1,776	25	761	16	930	15	407	16	423	12
new 91			694	18			255	11			237	9
new 93			280	26								
401	131	11	133	11								
***415**	197	13	58	10	93	9			122	10		
433	50	9	62	12								
Alderney	2,455	82	2,097	70	1,870	107	1,475	84	1,268	72	790	45
Woodside	2,115	101	1,877	89								

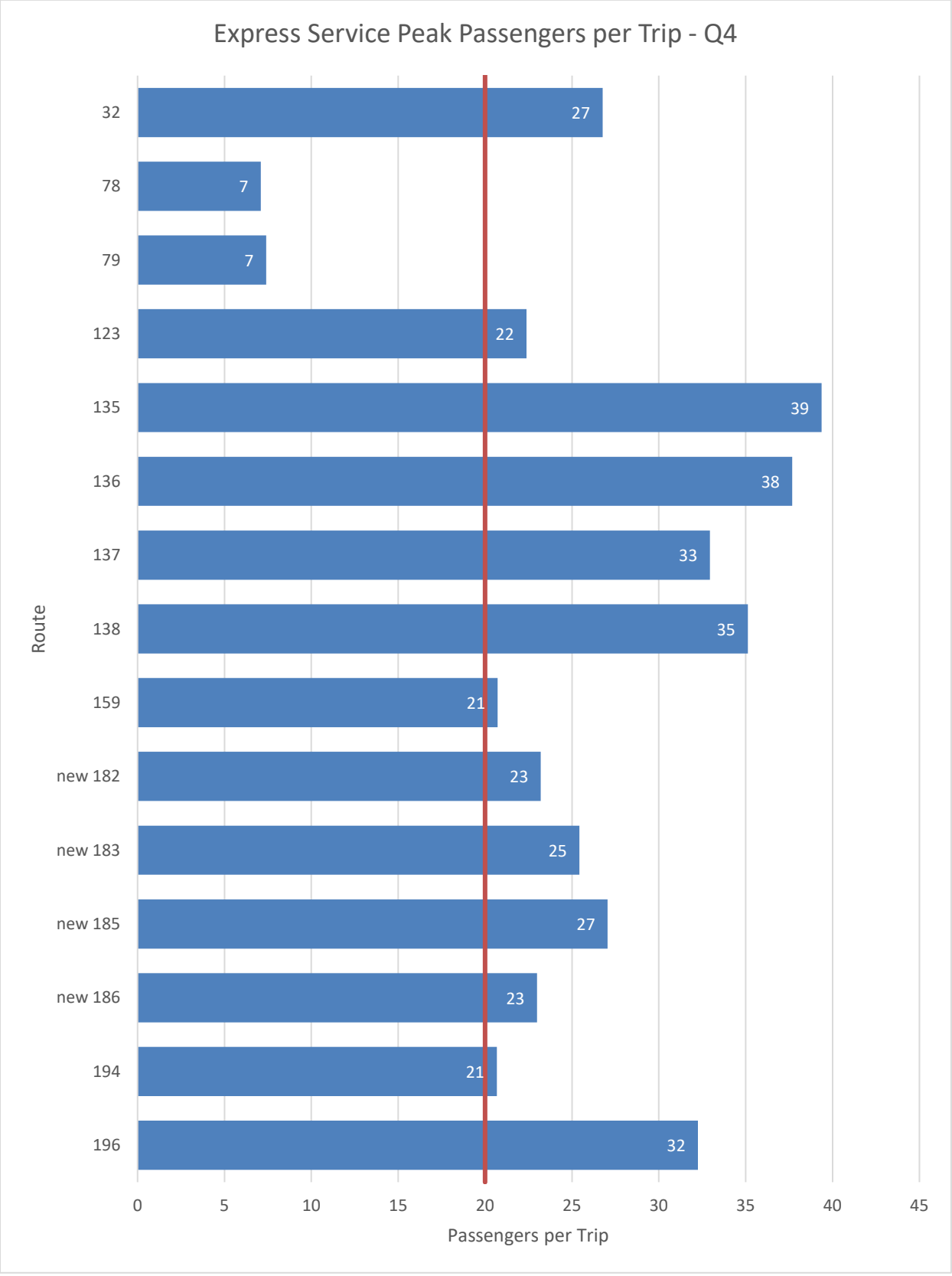
Express Service Peak Boardings and Passengers per Trip

Q4 Comparison - Average Daily Peak Boardings by Express Route				
Route	Weekday			
	18/19		19/20	
	Boardings	Pass/Trip	Boardings	Pass/Trip
32	473	27	481	27
78	98	7	115	7
79	94	8	94	7
123	278	19	330	22
135	508	36	551	39
136	557	35	603	38
137	386	32	395	33
138	507	36	491	35
159	587	20	620	21
new 182			557	23
new 183			329	25
new 185			676	27
new 186			276	23
194	153	19	166	21
196	121	30	129	32
320	215	18	164	16
330	388	18	363	17
370	128	10	117	11

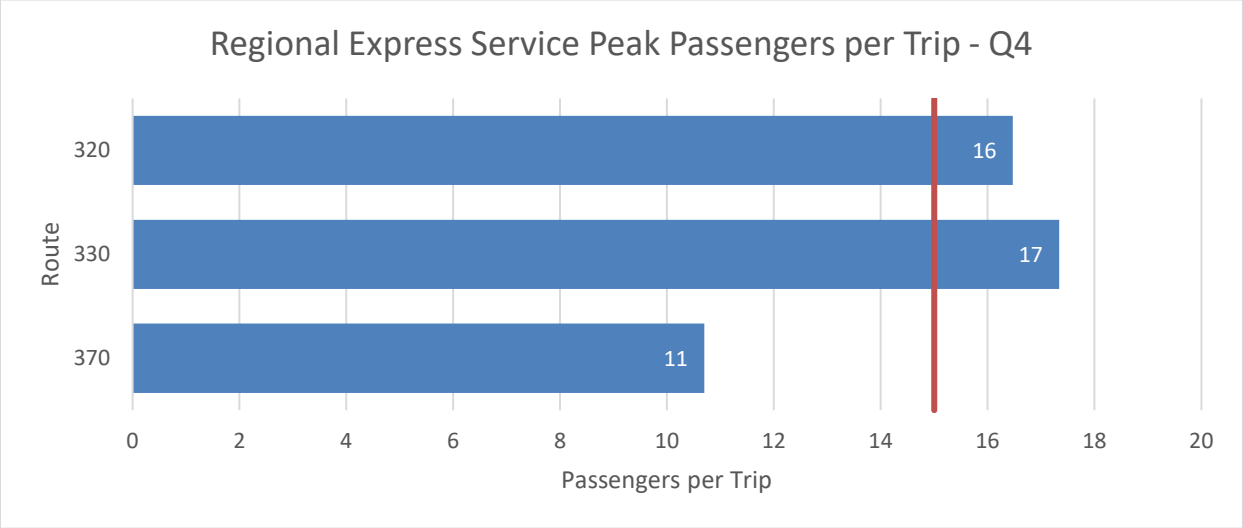
Passengers per Hour by Route



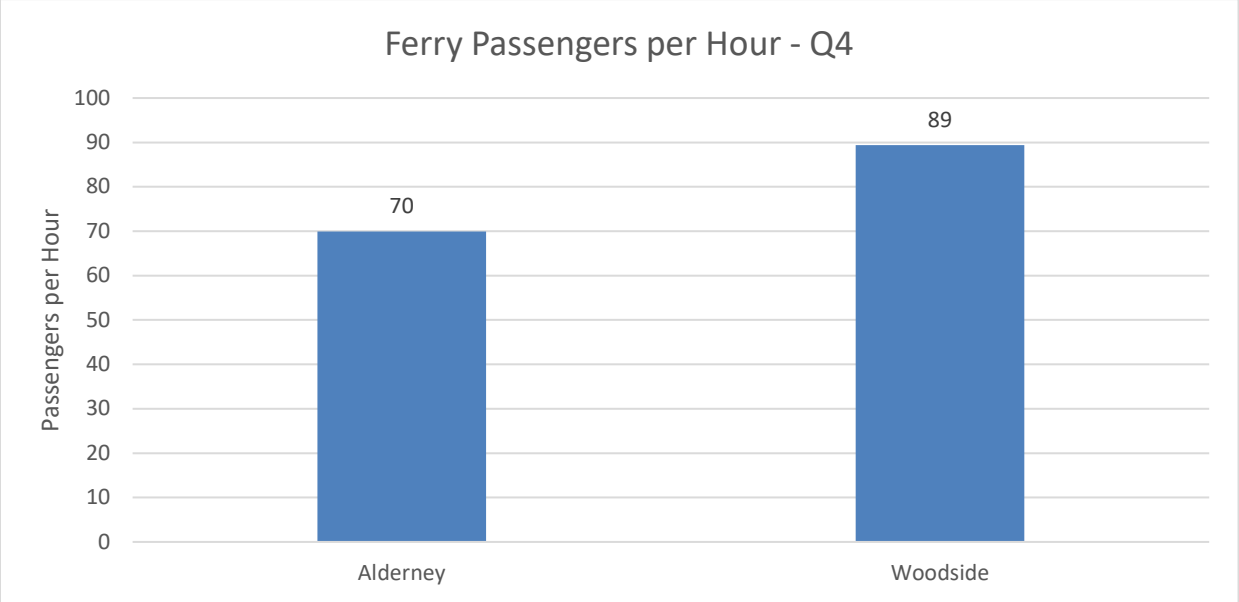
Express Service Peak Passengers per Trip by Route



Regional Express Peak Passengers per Trip by Route



Ferry Passengers per Hour

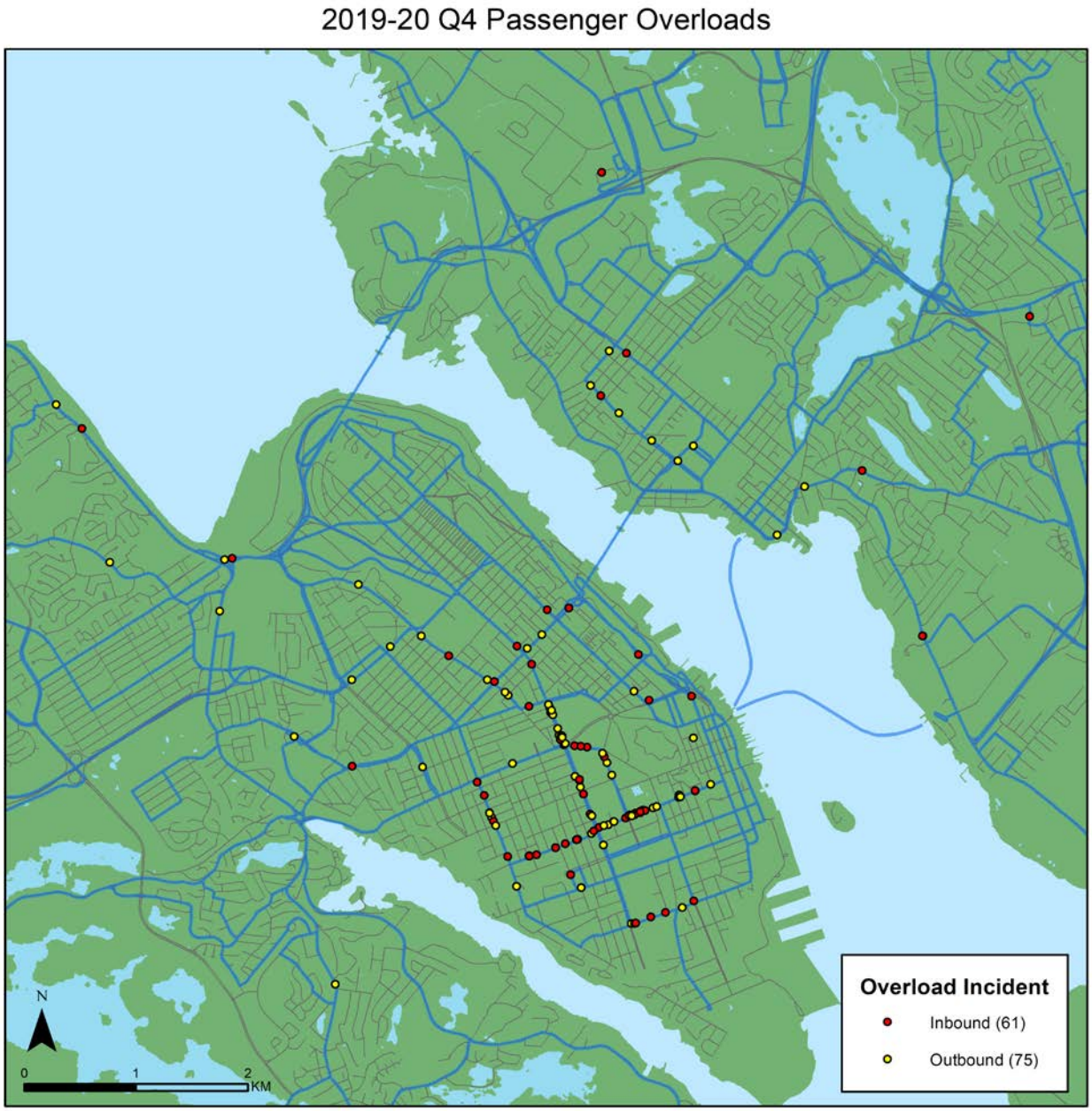


Passenger Overloads

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.

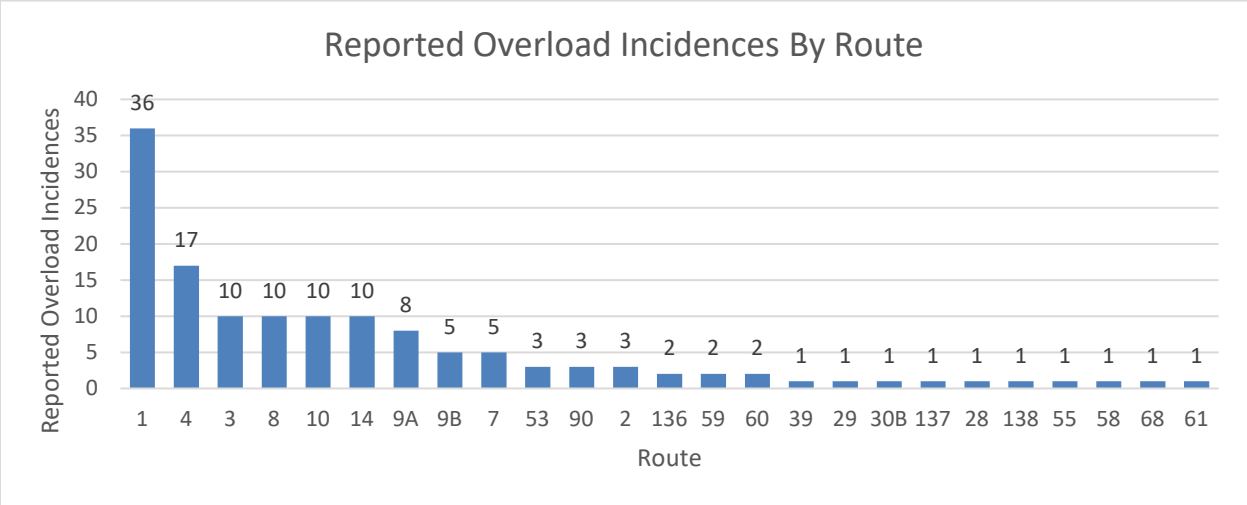
Passenger Overloads by Area

The figure below shows the locations of all reported overloads during Q4.



Passenger Overloads by Route

The following graph shows overloaded routes during the quarter.



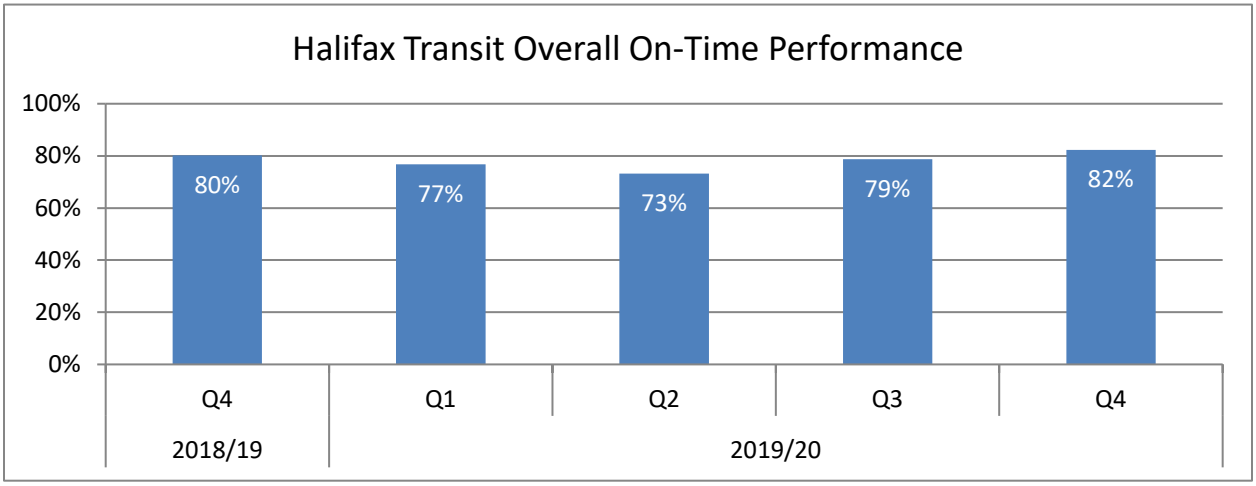
On-Time Performance

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.

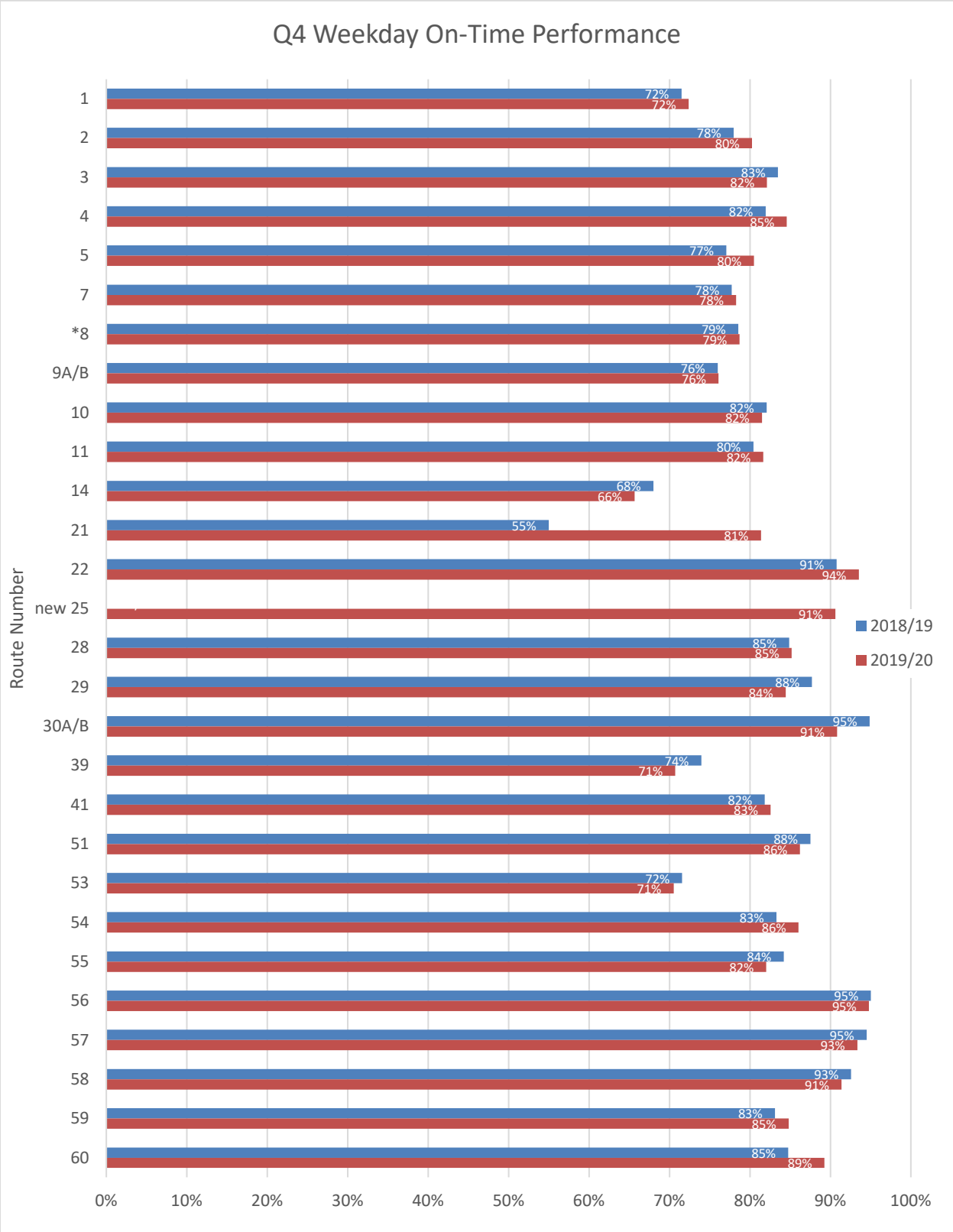
Transit industry standard targets for on-time performance tend to range between 85% and 90%, although service types are not always comparably grouped, nor are schedule adherence definitions consistent between agencies. Halifax Transit will analyze on-time performance across the network in order to establish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

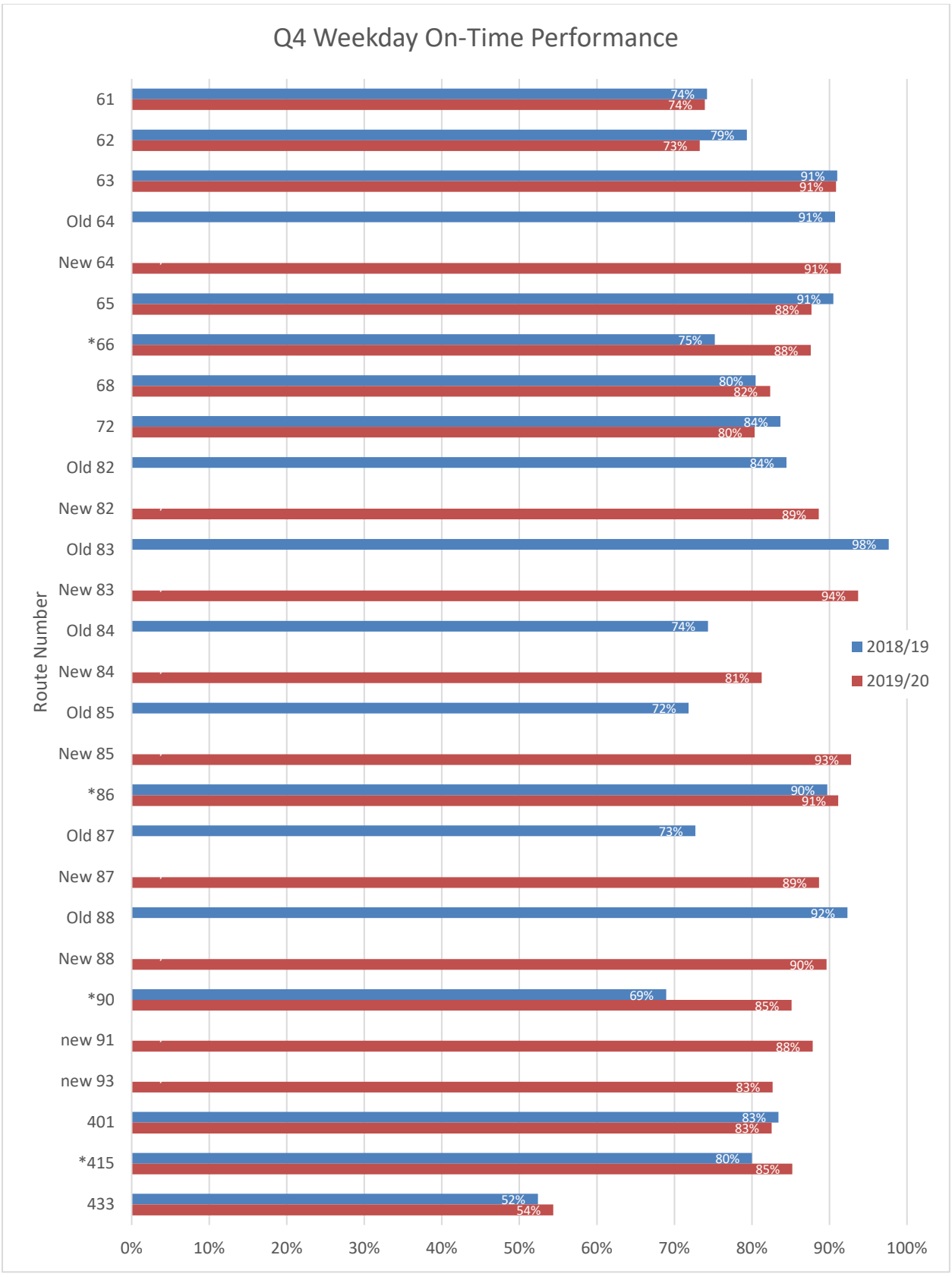
Compared to the fourth quarter last year, on-time performance improved from 80% to 82%. Prior to impacts of COVID-19 on-time performance was on pace for 81% in the fourth quarter.

Overall Network On-Time Performance

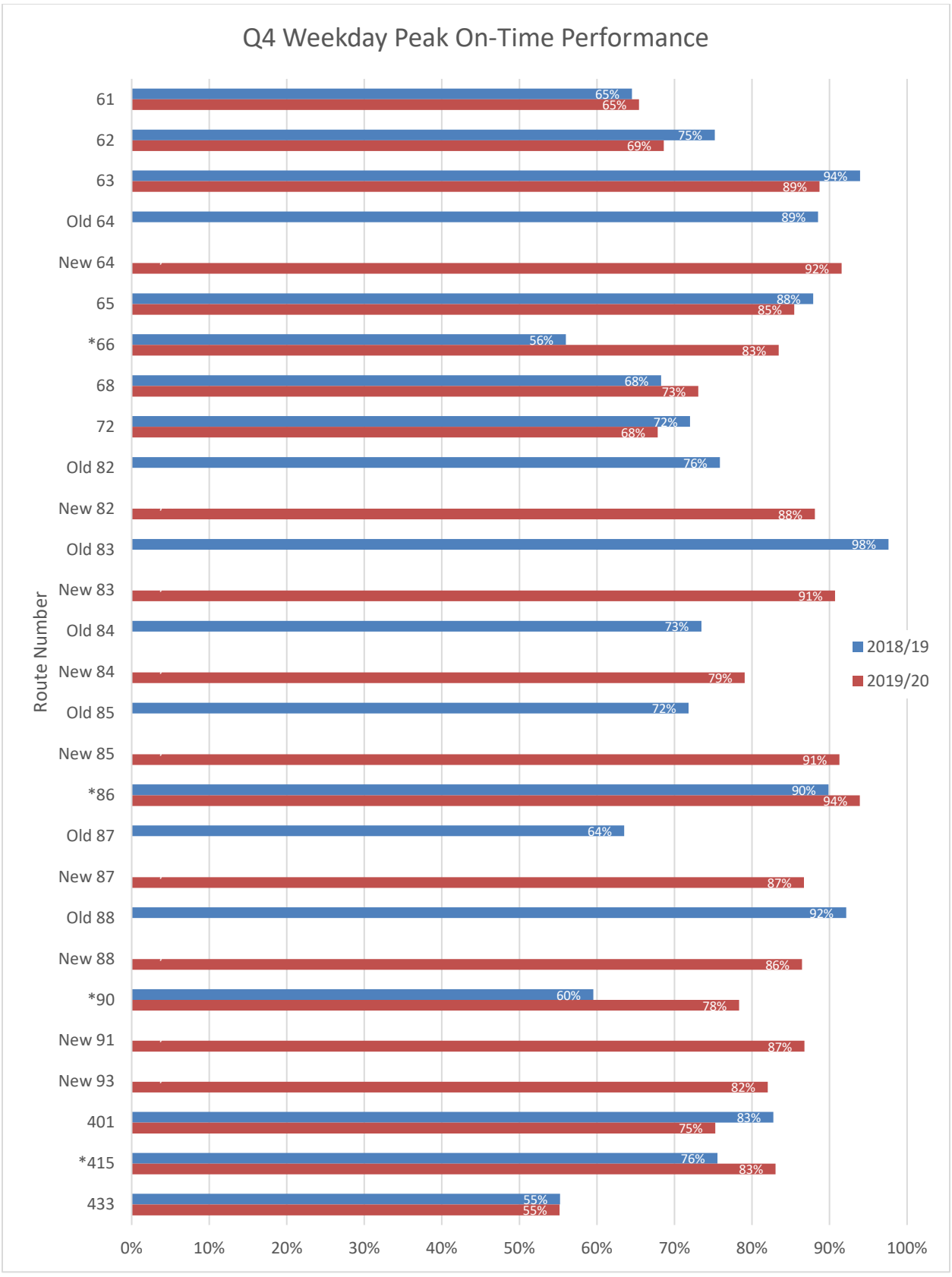


Weekday On-Time Performance




Q4 Weekday On-Time Performance
Route Number
61
62
63
Old 64
New 64
65
*66
68
72
Old 82
New 82
Old 83
New 83
Old 84
New 84
Old 85
New 85
*86
Old 87
New 87
Old 88
New 88
*90
new 91
new 93
401
*415
433
74%
74%
79%
73%
91%
91%
91%
91%
91%
88%
75%
88%
80%
82%
84%
80%
84%
89%
98%
94%
74%
81%
72%
93%
90%
91%
73%
89%
92%
90%
69%
85%
88%
83%
83%
83%
80%
85%
52%
54%
2018/19
2019/20
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

Weekday Peak Period On-Time Performance


Q4 Weekday Peak On-Time Performance
Route Number
61
62
63
Old 64
New 64
65
*66
68
72
Old 82
New 82
Old 83
New 83
Old 84
New 84
Old 85
New 85
*86
Old 87
New 87
Old 88
New 88
*90
New 91
New 93
401
*415
433
65%
65%
75%
69%
94%
89%
89%
92%
88%
85%
56%
83%
68%
73%
72%
68%
76%
88%
98%
91%
73%
79%
72%
91%
90%
94%
64%
87%
92%
86%
60%
78%
87%
82%
83%
75%
76%
83%
55%
55%
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 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, major destinations and park and rides. This includes Scotia Square, Summer Street, and the future Wrights Cove Terminal location on Marketplace Drive but does not include some other on-street timepoints.

Due to a rapid schedule adjustment implemented in response to COVID-19, schedule adherence data was not available after March 20th. Average weekday On-Time Performance for the fourth quarter is averaged over the period January through March 20, 2020. Reductions in traffic congestion resulted from COVID-19 and is anticipated to be more evident in future quarters.