2020/21 – Q4
Performance Measures Report

HALIFAX
TRANSIT

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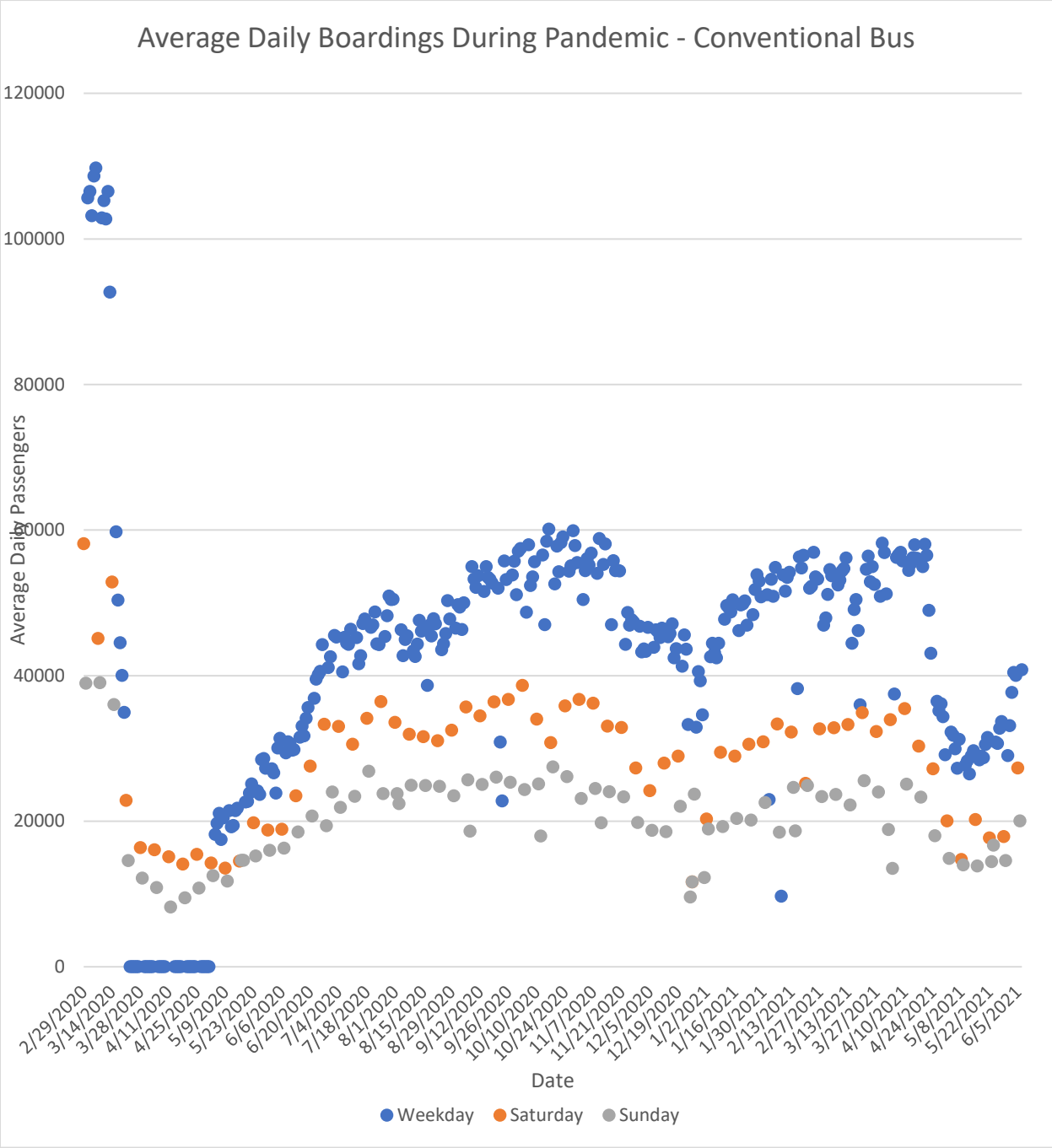
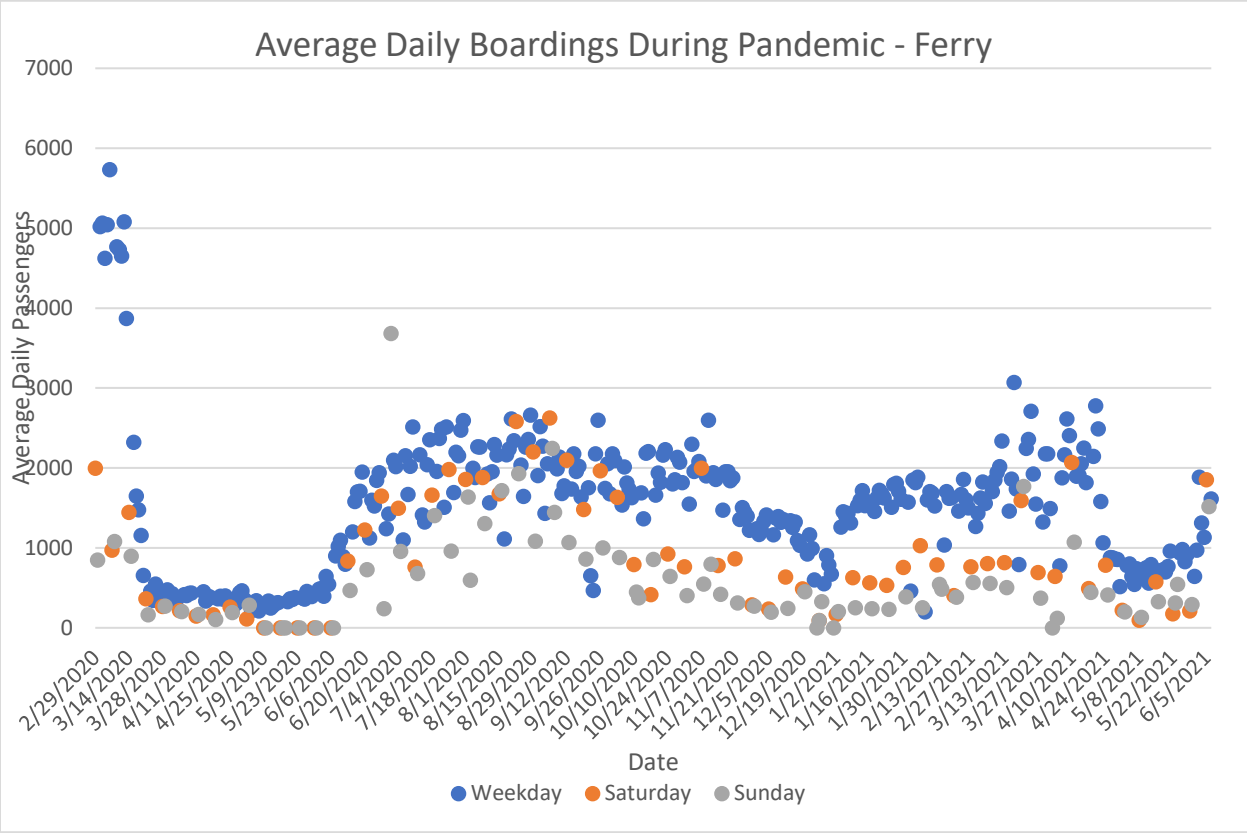
COVID-19 Pandemic Data Impacts

The onset of the COVID-19 pandemic in early 2020 resulted in the need to rapidly implement emergency service adjustments to the weekday schedules. Fare collection ceased on March 18, 2020 and resumed August 1, 2020. Full service bus schedules resumed August 31, 2020. Ferry service increased September 8, 2020, and again October 26, but continued to run at a reduced schedule to accommodate extra cleaning requirements at the end of each day.

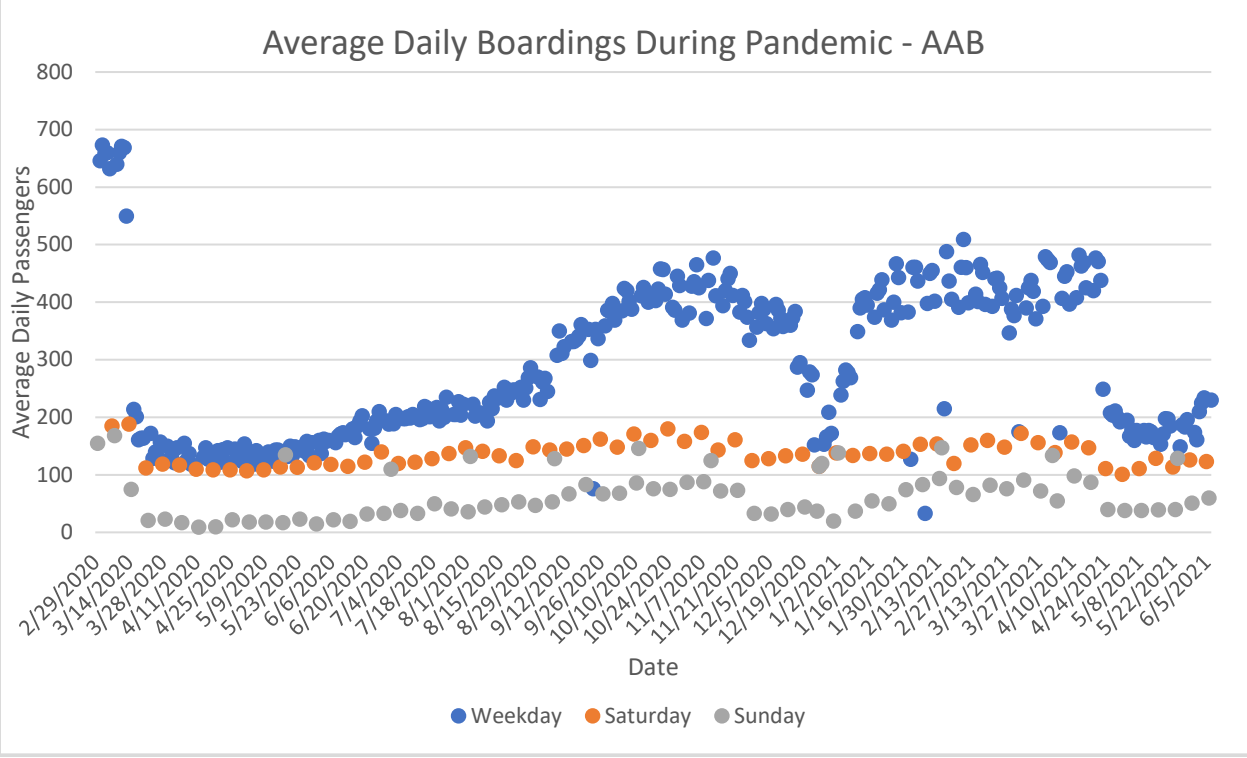
Conventional Bus Boardings During Pandemic



Ferry Boardings During Pandemic



Access-A-Bus Boardings During Pandemic



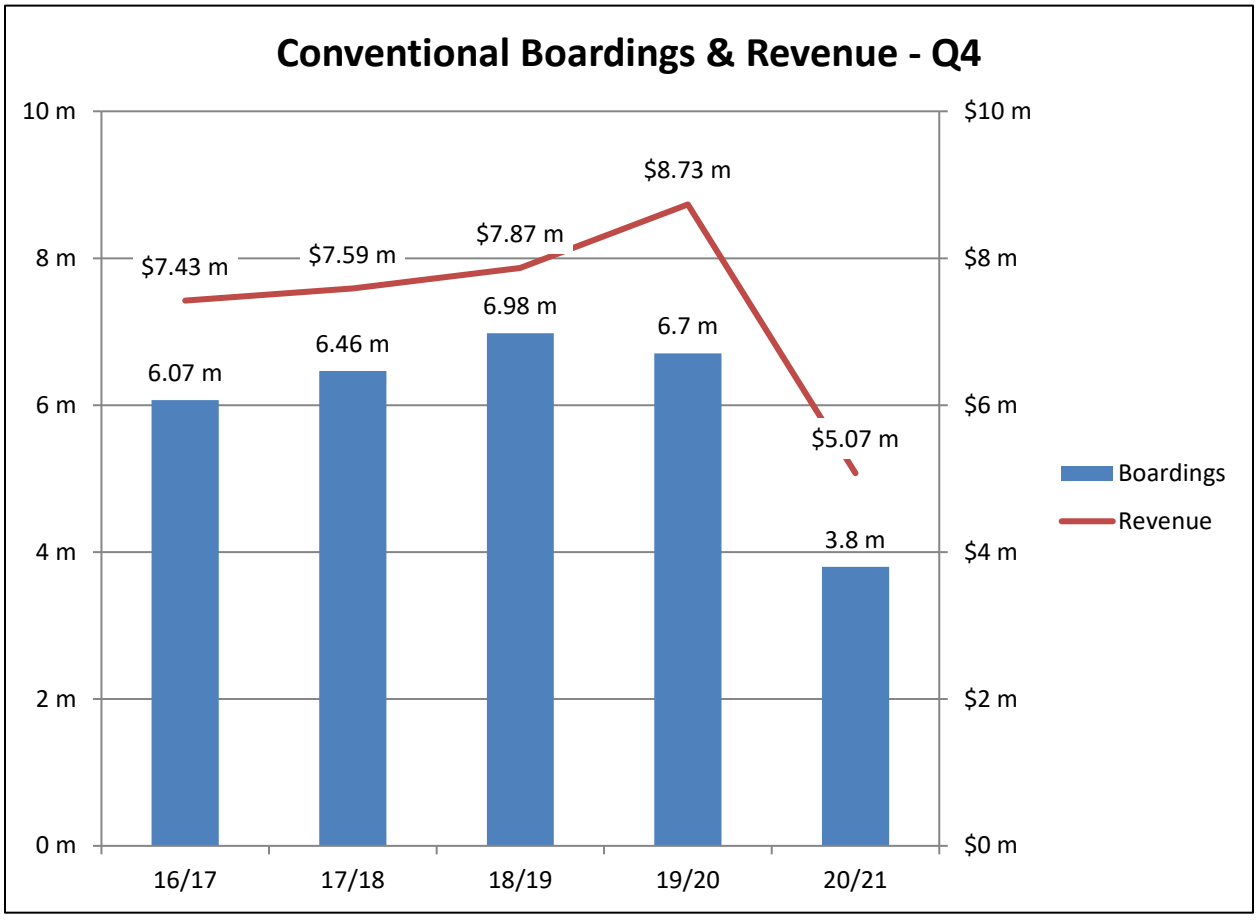
Boardings & Revenue

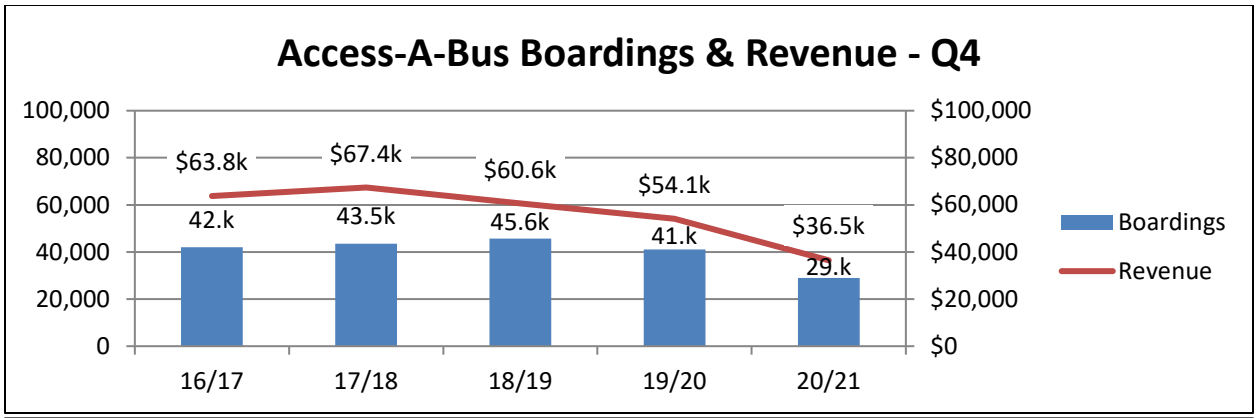
Revenue and boardings are reported to demonstrate how well transit services were used over the quarter, in comparison to the same quarter the previous year.

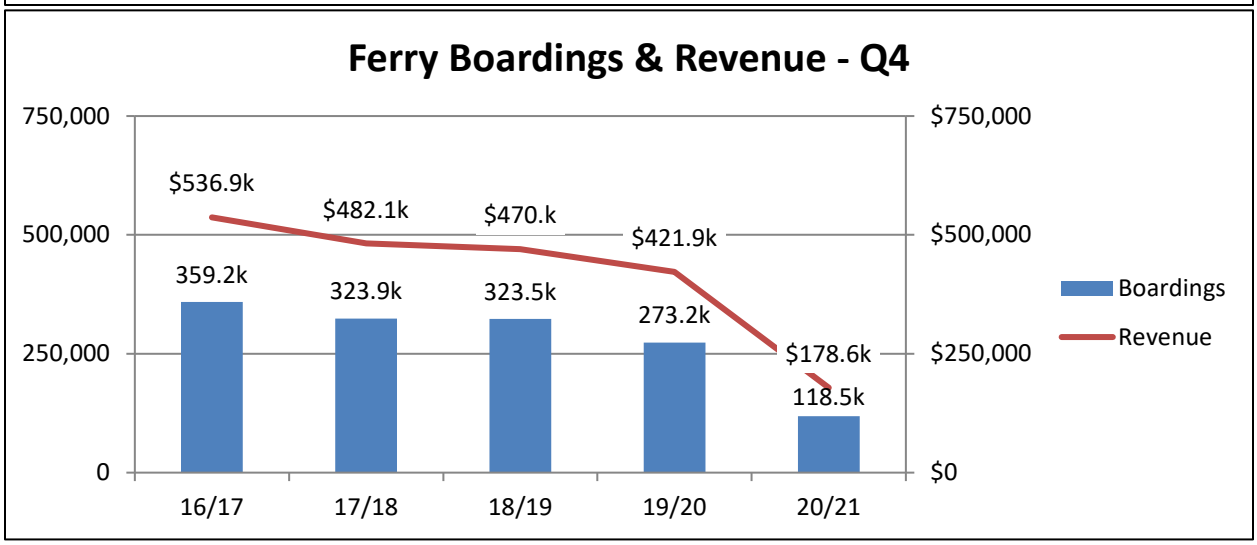
By installing Automatic Passenger Counter (APC) systems throughout the network in the 2017/18 fiscal year, Halifax Transit is now able to track the number of boardings by counting passengers entering the bus at each stop, instead of estimating boardings from revenue. Therefore, the data source for boardings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

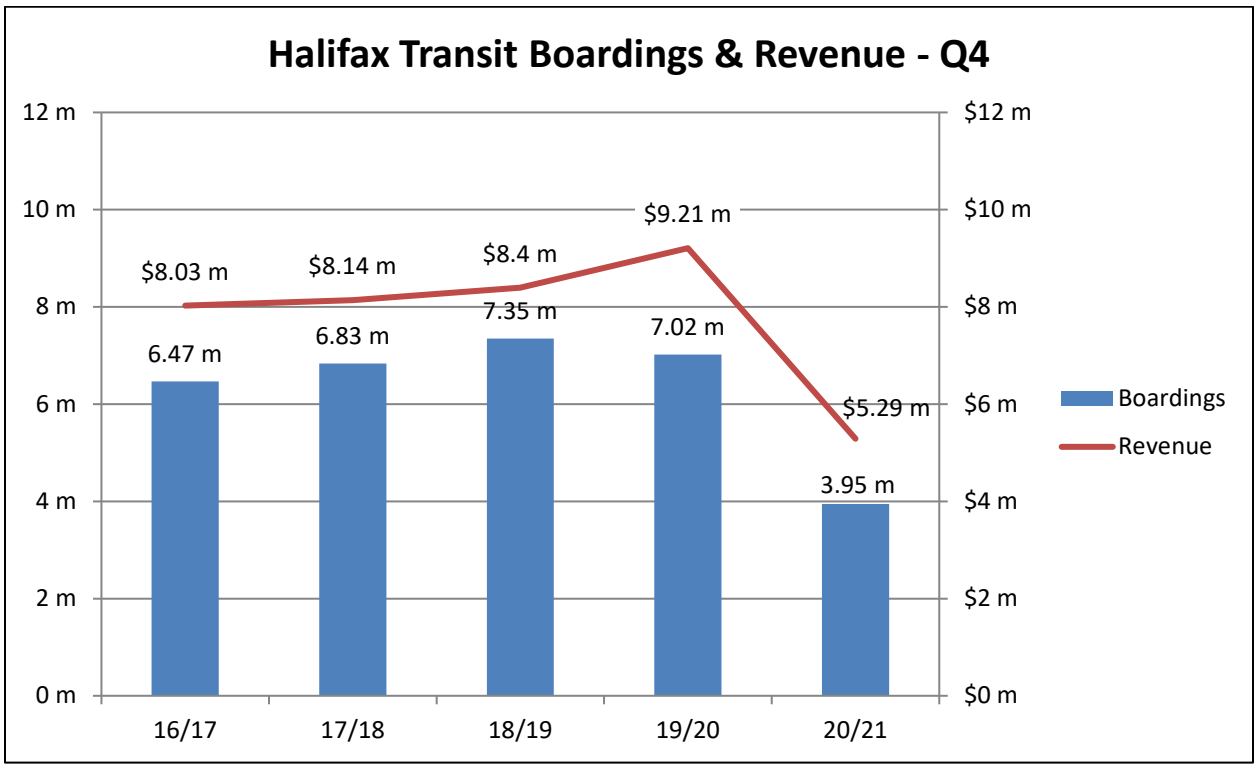
COVID-19 continued to have a significant impact during the fourth quarter of 2020/21. Conventional boardings decreased 43.3% from this quarter last year, Ferry boardings decreased 56.6% and Access-A-Bus boardings decreased 29.3%. Overall, system wide boardings decreased this quarter by 43.8% compared to last year. Fare collection resumed mid second quarter on August 1, 2020. Overall revenue this quarter decreased 42.6% from last year.

Historical 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
$63.8k
$67.4k
$60.6k
$54.1k
$36.5k
42.k
43.5k
45.6k
41.k
29.k
16/17
17/18
18/19
19/20
20/21
Boardings
Revenue

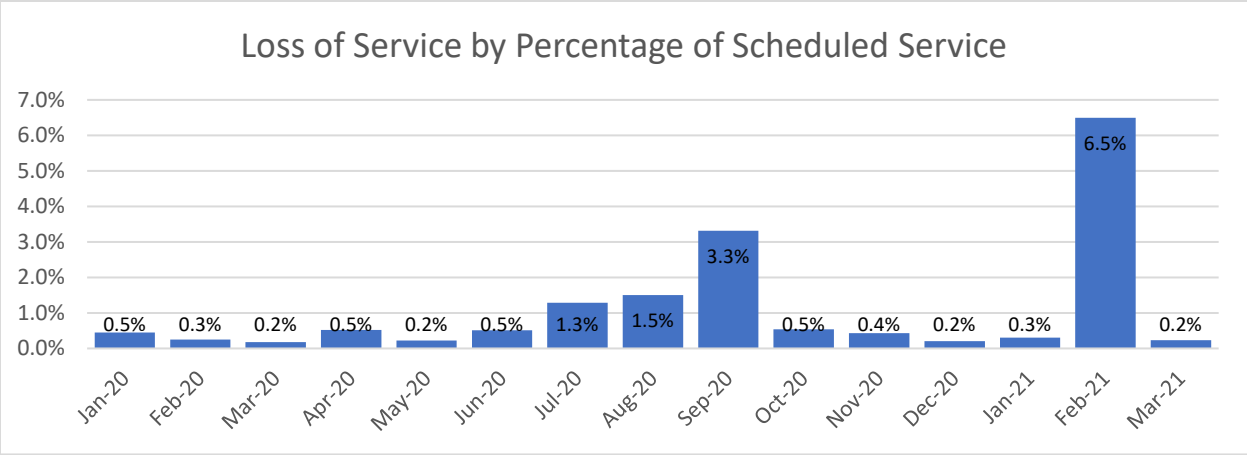

Ferry Boardings & Revenue - Q4
750,000
500,000
250,000
0
$750,000
$500,000
$250,000
$0
$536.9k
$482.1k
$470.k
$421.9k
$178.6k
359.2k
323.9k
323.5k
273.2k
118.5k
16/17
17/18
18/19
19/20
20/21
Boardings
Revenue


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
$8.03 m
$8.14 m
$8.4 m
$9.21 m
$5.29 m
6.47 m
6.83 m
7.35 m
7.02 m
3.95 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 fourth quarter, the total loss of service was 4510 hours and 42 minutes, which is 2.15% of the quarterly revenue hours. Transit service was suspended at 7pm on February 7, 2021, due to blizzard conditions. Service resumed at 3pm, the following day. The table below shows the total loss of service for each month.

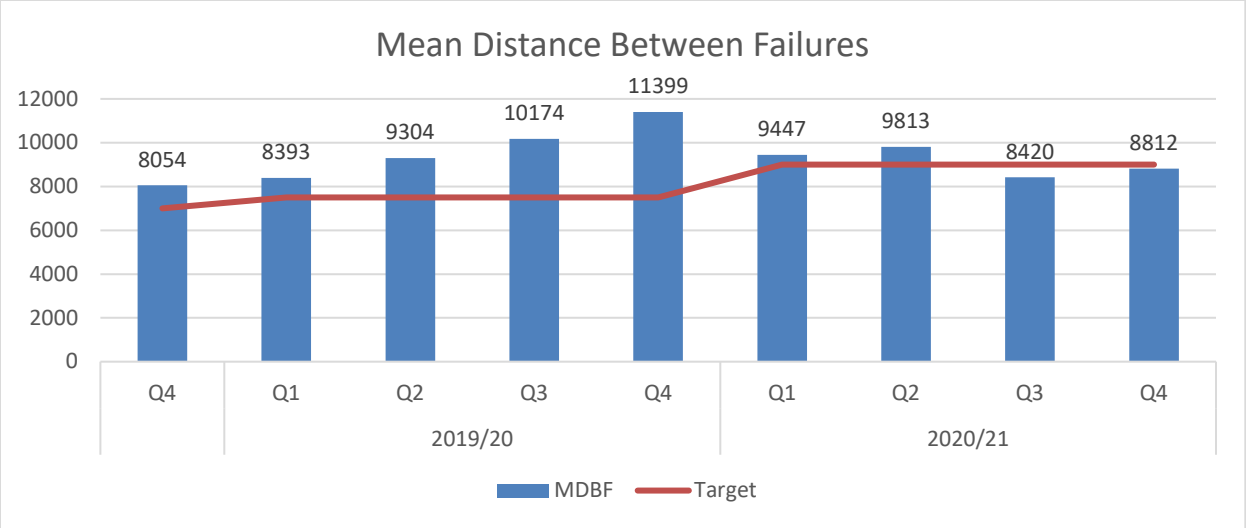


Mean Distance Between Failures

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.

Transit Fleet 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.

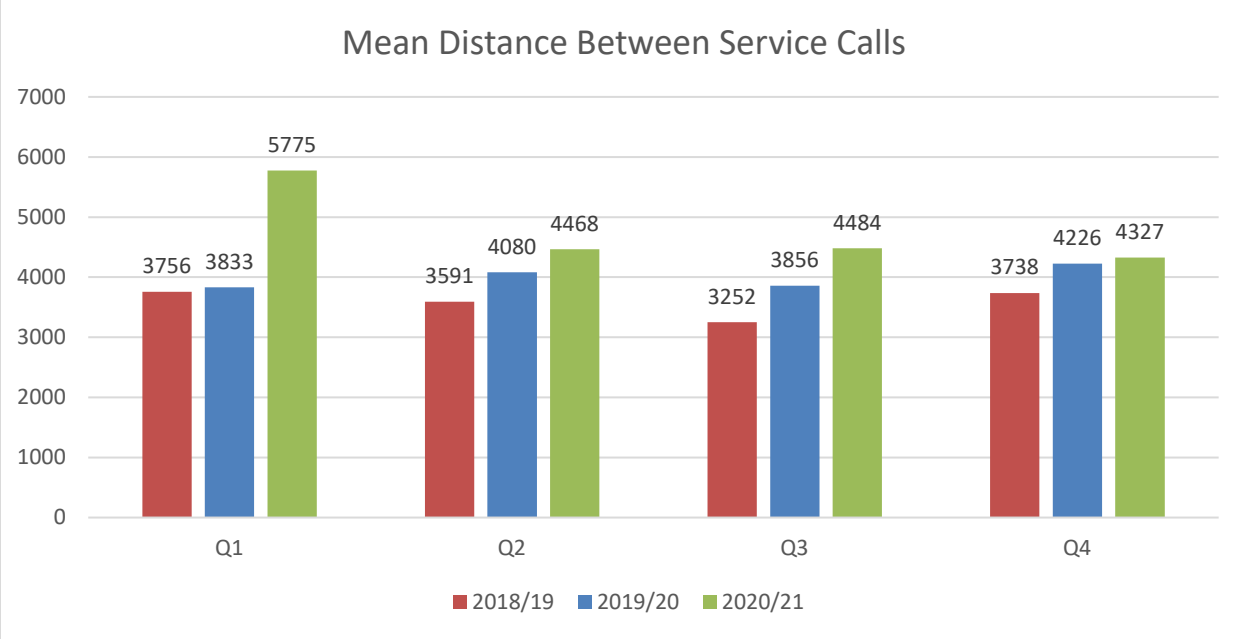
For the fourth quarter of 2020/21, the MDBF for conventional transit was 8,812 kms. This is equivalent to a 23% decrease from the fourth quarter of the previous year (2019/20). Transit Fleet will continue to monitor this KPI and has implemented new preventative maintenance measures to reduce aftertreatment and cooling system defects.



Mean Distance Between Service Calls

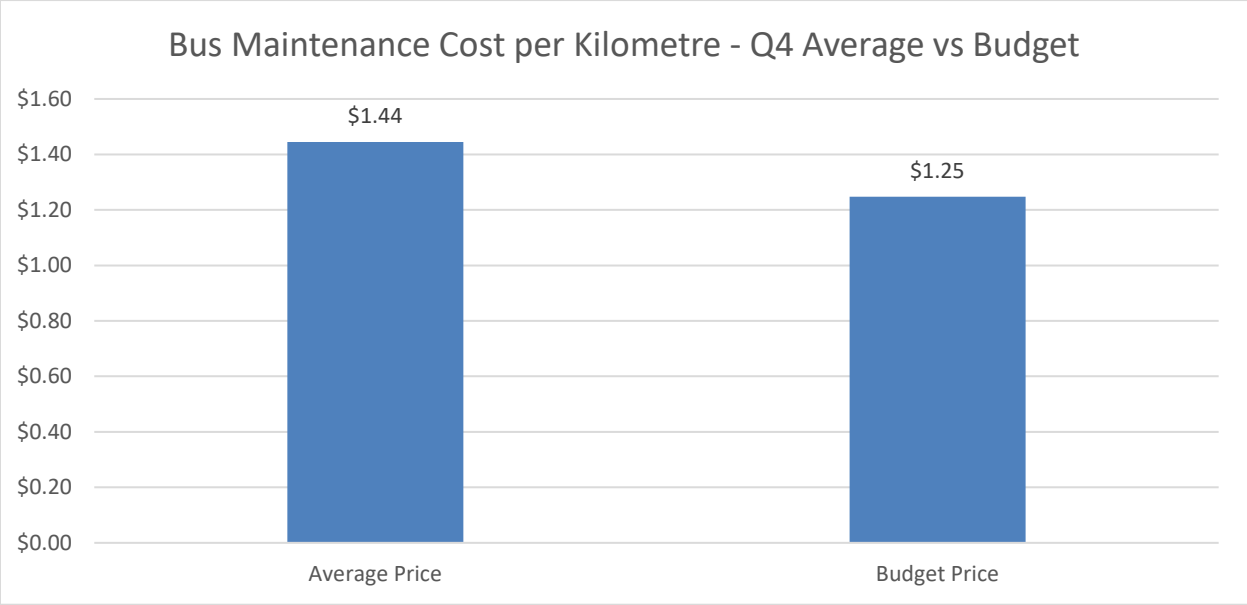
Mean Distance Between Service Calls (MDBS) reflects the average distance in kilometres covered between maintenance service calls. This metric includes all instances of service calls, including issues with secondary equipment, passenger-related events and damages to the bus resulting from minor accidents.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

For the fourth quarter of 2020/21, the MDBS for conventional transit was 4,327 kms. In comparison to the fourth quarter of 2019/20 (4,226), this is an improvement of 2%. Overall, the Mean Distance Between Service Calls has improved by 19% in 2020/21 over 2019/20. Therefore, bus reliability for conventional transit continues to improve significantly. The MDBS for Access-A-Bus service was 53,209 kms. Transit Fleet will continue to monitor this metric in order to reduce service calls.



Bus Maintenance Cost – Quarter Average vs Budget

In the fourth quarter, bus maintenance costs were $1.44/km, while the budgeted maintenance cost was $1.25/km. The number of bus transmission and engine replacements required exceeded the available funds in the midlife rebuild capital budget. These additional costs were included in the maintenance budget causing Transit Fleet to exceed the budgeted cost per km.

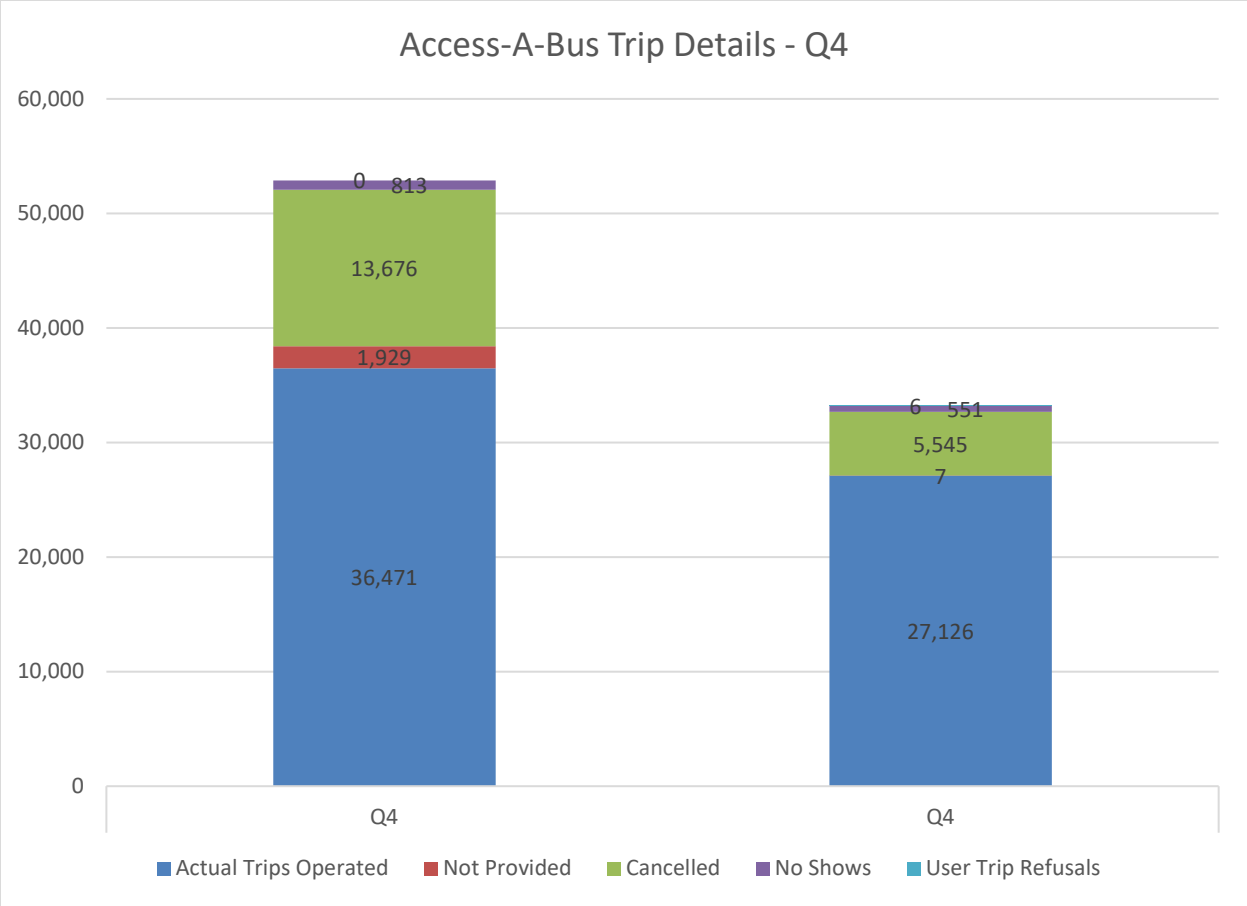


Access-A-Bus Trip Details

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 2020/21 the COVID-19 pandemic continued to affect ridership significantly. 9,345 fewer trips were operated compared to the fourth quarter last year, a decrease of 26%. The trips that were not provided decreased by 100%.

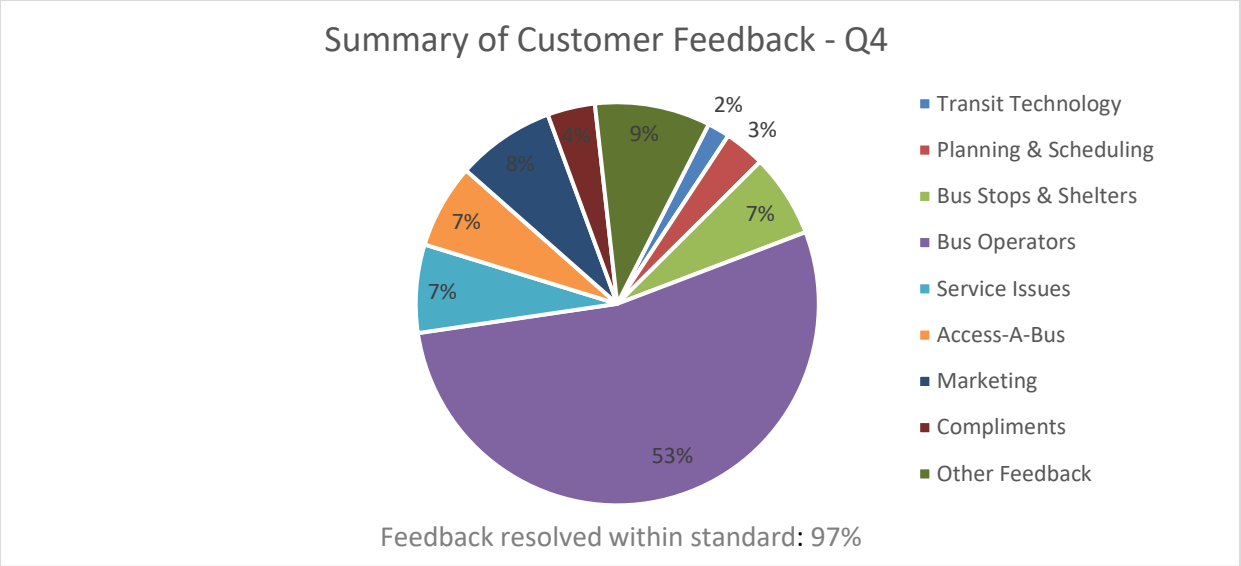


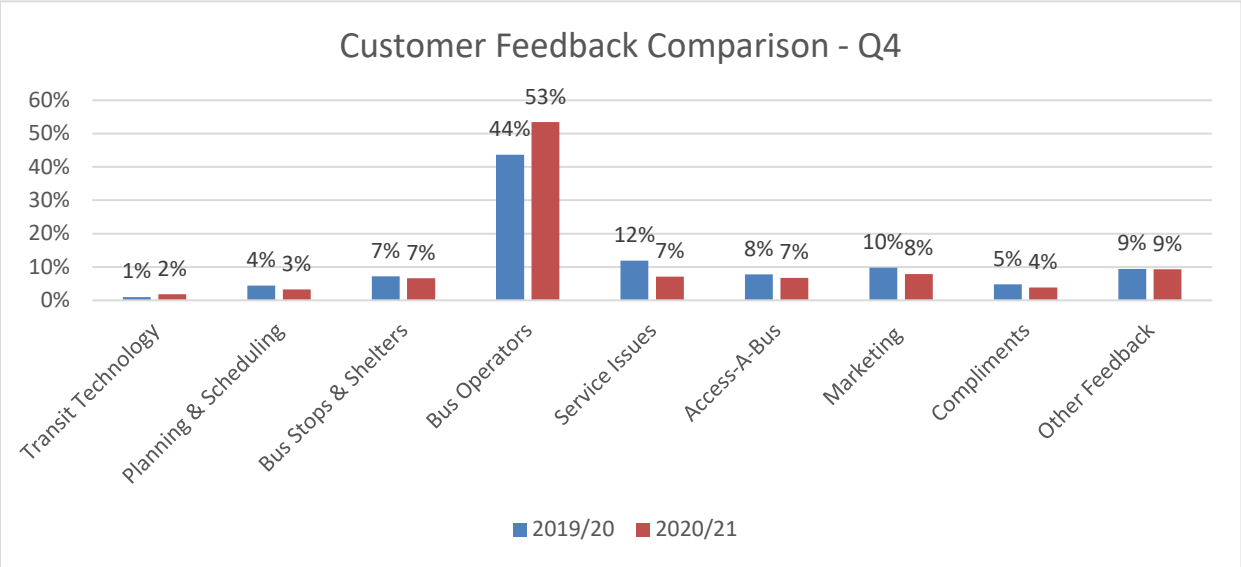
Customer Service – All Services

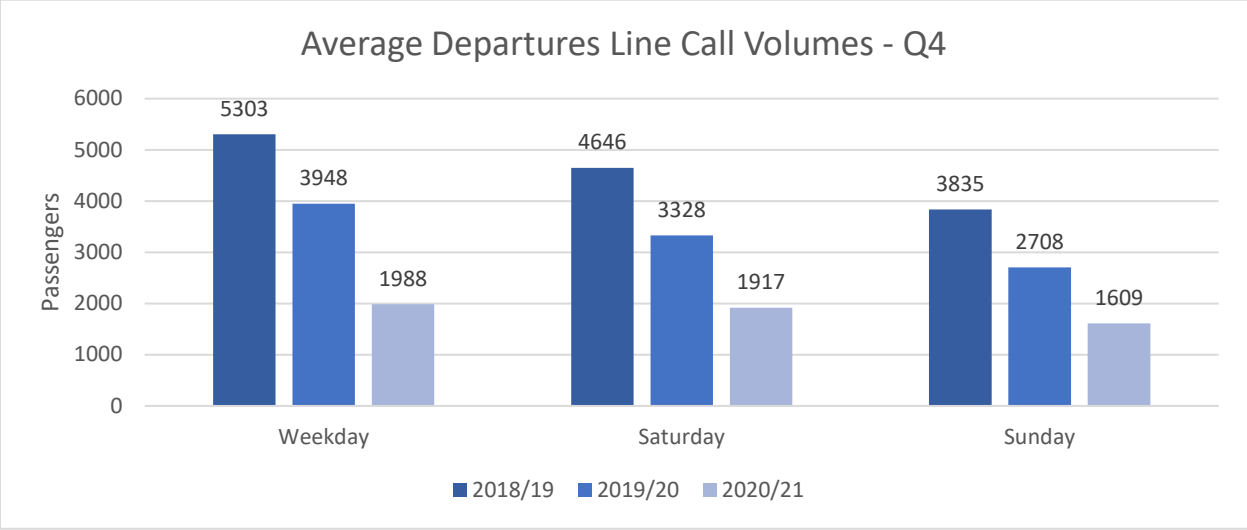
Customer service statistics are measured monthly using the Hansen Customer Relationship Management software along with Crystal Reports. Feedback is first categorized by subject matter and then divided into two categories: feedback resolved within service standard and feedback resolved outside service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

In the fourth quarter, 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 97% 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 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.


Summary of Customer Feedback - Q4
2%
3%
9%
4%
8%
7%
7%
7%
53%
Transit Technology
Planning & Scheduling
Bus Stops & Shelters
Bus Operators
Service Issues
Access-A-Bus
Marketing
Compliments
Other Feedback
Feedback resolved within standard: 97%


Customer Feedback Comparison - Q4
60%
50%
40%
30%
20%
10%
0%
1% 2%
4% 3%
7% 7%
44% 53%
12% 7%
8% 7%
10% 8%
5% 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 - Q4
Passengers
6000
5000
4000
3000
2000
1000
0
5303
3948
1988
4646
3328
1917
3835
2708
1609
Weekday
Saturday
Sunday
2018/19
2019/20
2020/21

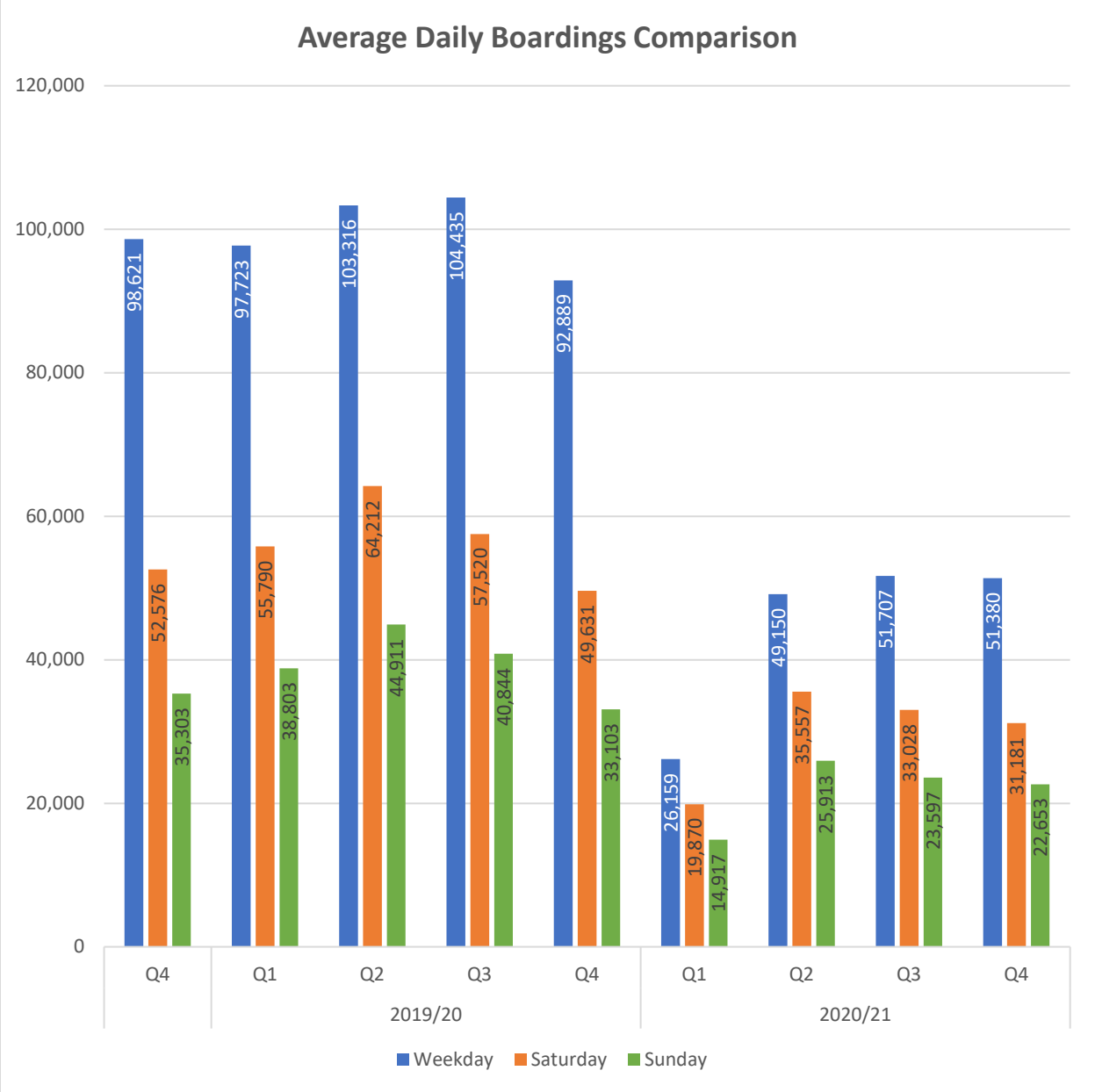
Service Utilization

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.

Boardings

Average weekday boardings in the fourth quarter were 51,380 ± 8,057 (29% variance). Average Saturday boardings this quarter were 31,181 ± 4,280 (13.7% variance). Average Sunday boardings this quarter were 22,653 ± 2,746 (22.5% variance).

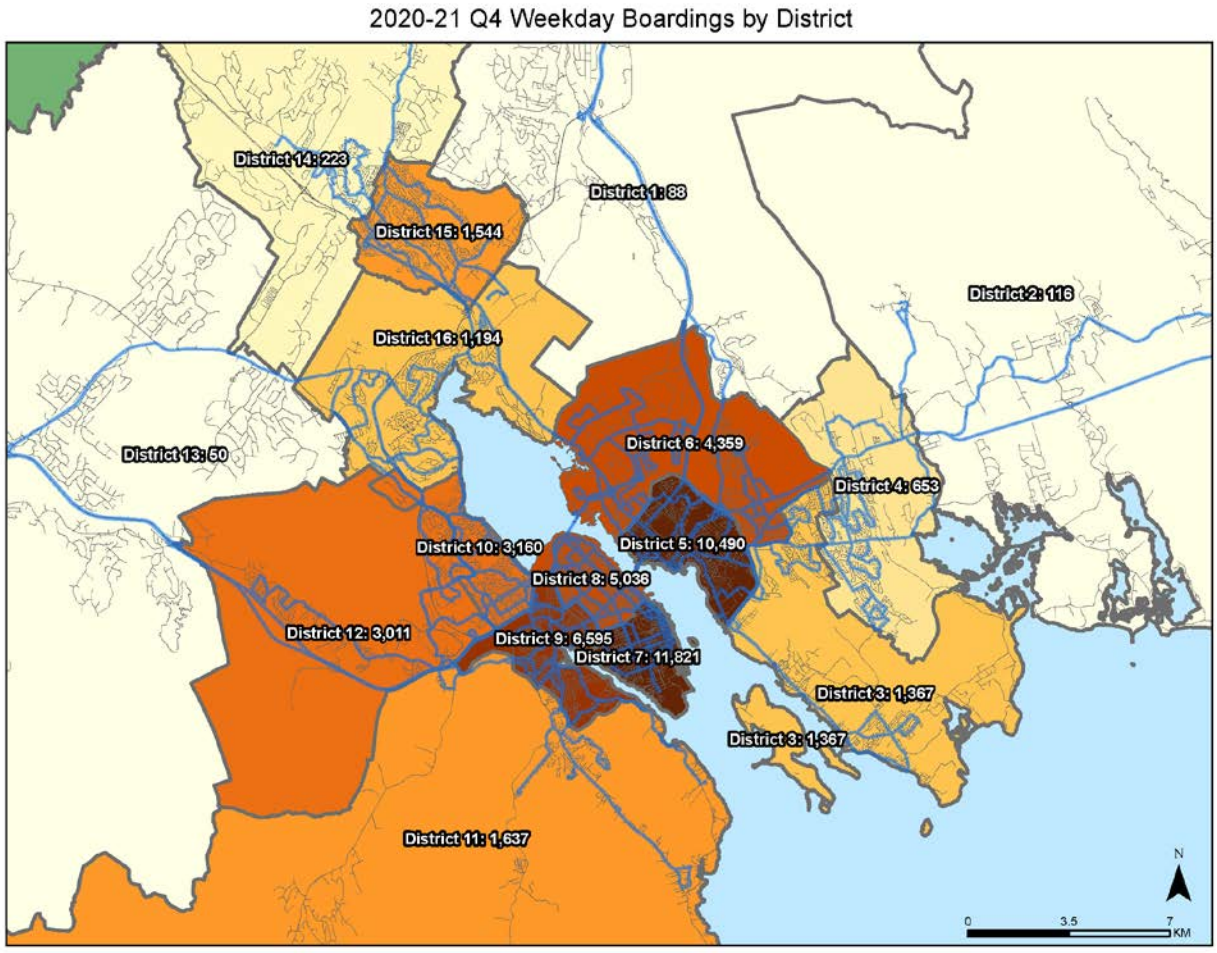
Average Daily Boardings by Service Day



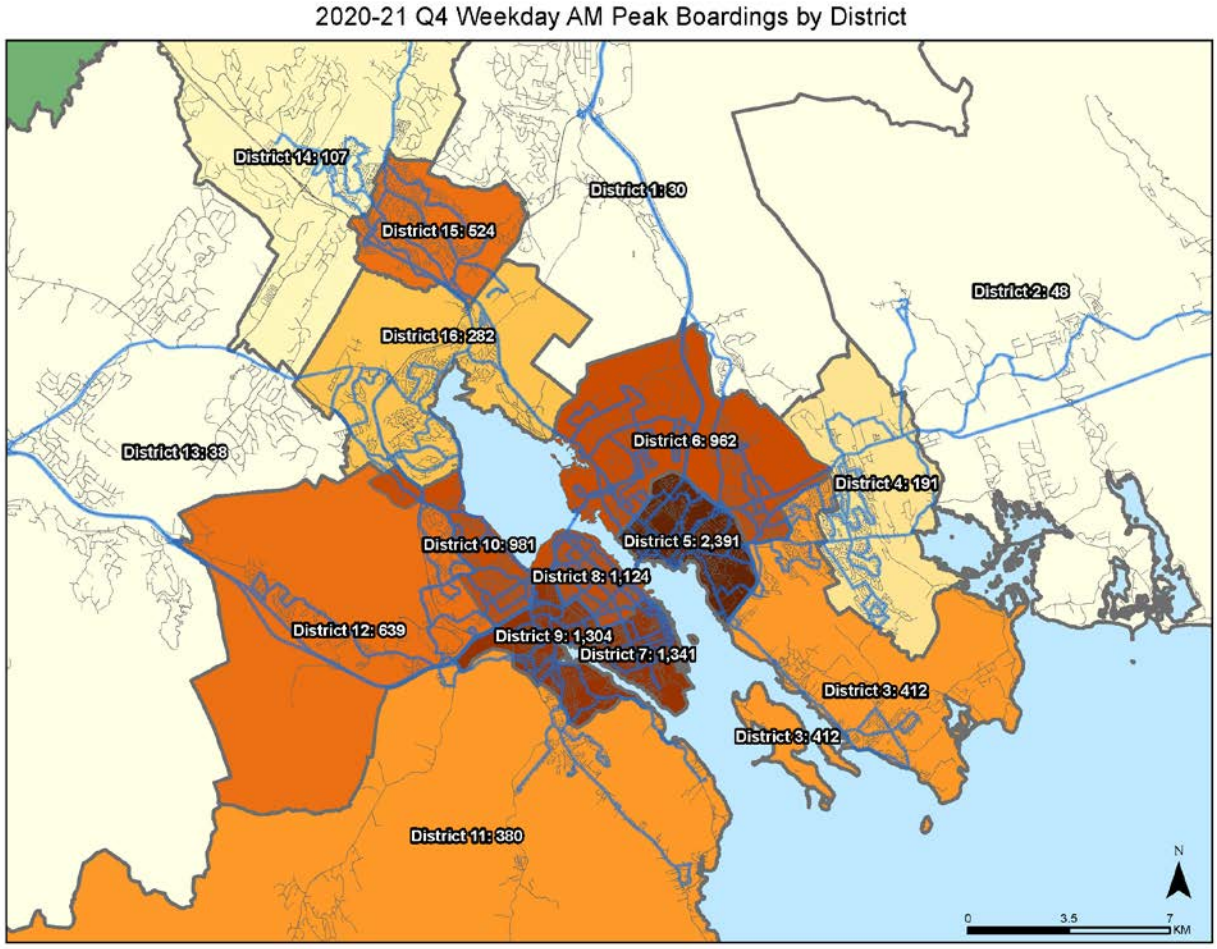
Boardings by District

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

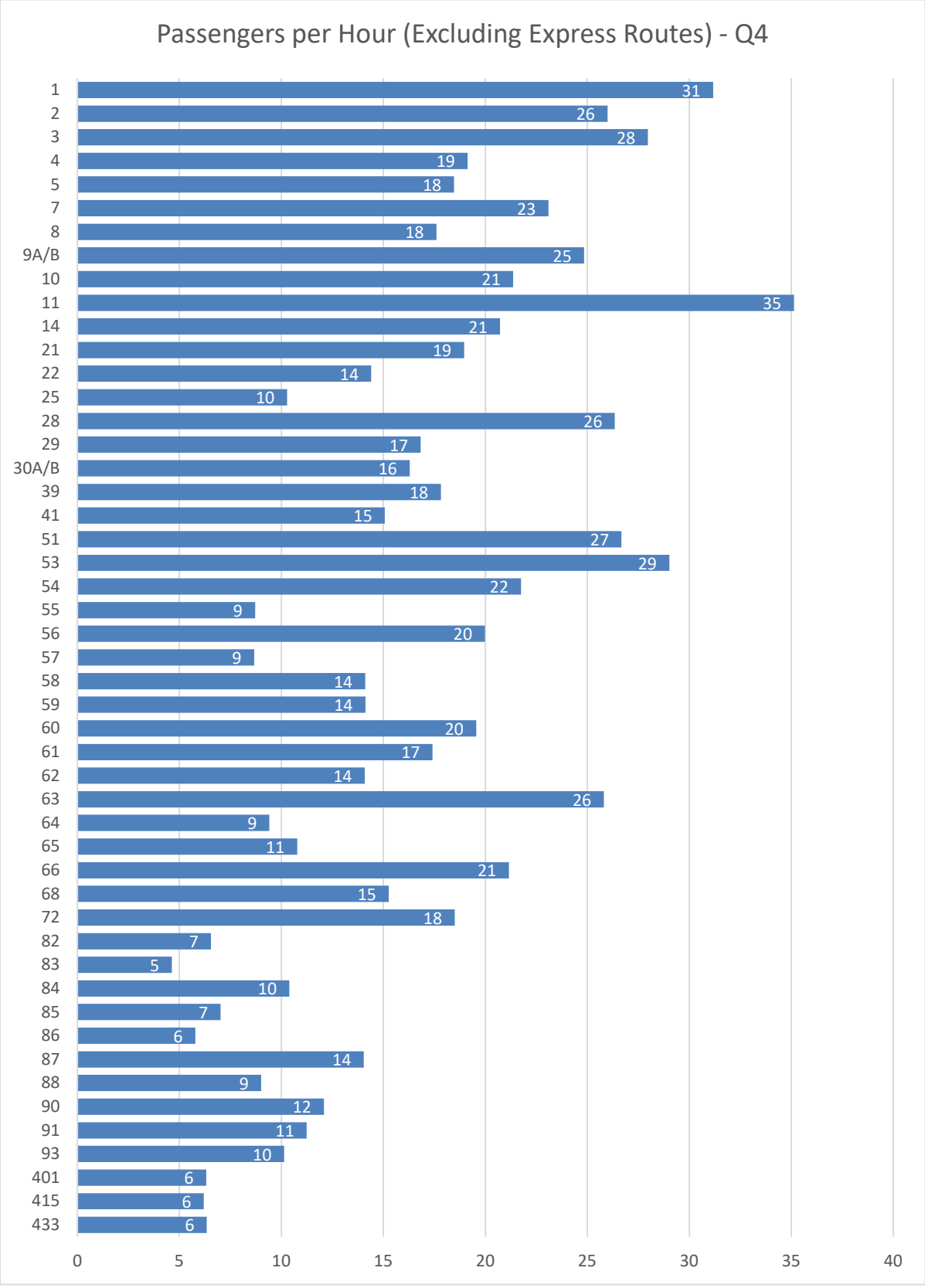
Passengers per hour measures the volume of passengers carried per service hour by route. Due to differences in service model/design, Express Routes are measured instead by passengers per trip. Ridership fluctuates significantly by season and therefore figures are compared to the same quarter in the previous 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.

Boardings & Passengers per Hour

Q4 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	11,247	72	4,818	31	7,842	70	4,167	37	4,753	56	2,765	34
2	4,710	44	2,788	26	3,497	35	2,394	24	2,091	30	1,523	22
3	6,801	45	4,177	28	3,231	38	2,249	26	3,043	32	2,263	25
4	5,380	42	2,411	19	1,890	38	1,136	23	1,483	33	975	22
7	5,380	47	2,621	23	3,364	36	1,993	21	1,867	36	1,074	21
8	4,400	31	2,380	18	2,804	26	1,799	16	2,100	19	1,422	13
9A/B	6,962	41	4,148	25	3,318	46	2,260	31	2,554	35	1,737	25
9A	4,730	43	2,817	26	1,560	44	1,100	31	1,130	32	809	24
9B	2,232	38	1,331	23	1,757	48	1,160	31	1,424	38	928	26
10	5,152	47	2,302	21	3,139	43	1,821	25	1,839	38	1,172	24
11	117	42	75	35								
14	2,890	45	1,271	21	1,235	37	731	22	1,082	37	602	21
21	876	28	561	19	721	21	479	14	469	26	339	19
22	647	20	457	14	436	13	293	9	341	10	246	7
25	389	17	220	10	183	11	130	8	175	16	104	10
28	1,470	39	978	26	1,198	27	810	18	543	26	418	21
29	3,139	34	1,540	17	1,562	25	994	16	1,113	19	743	13
30A/B	924	26	583	16	508	15	356	10	313	17	220	12
30A	495	28	329	18	276	16	180	11	140	15	104	12
30B	429	24	254	14	233	13	176	10	174	20	116	13
39	1,386	31	788	18	963	20	674	14	361	16	291	14
41	1,700	50	513	15								
51	1,059	44	625	27	503	31	306	19	252	25	189	18
53	1,284	48	733	29	680	45	417	27	294	35	198	25
54	815	38	458	22	450	29	287	18	230	23	156	16
55	384	17	191	9	207	13	112	7	139	9	87	6
56	925	29	633	20	957	27	732	21	490	15	465	15
57	586	14	334	9	246	8	184	6	146	8	111	6
58	707	26	388	14	365	20	228	12	304	17	195	12

Q4 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	1,897	24	1,086	14	685	30	489	21	440	19	347	15
60	2,905	38	1,480	20	1,605	39	952	24	1,136	41	695	25
61	2,229	29	1,331	17	996	26	682	17	833	22	532	14
62	796	25	435	14	455	21	276	12	233	15	150	10
63	858	53	446	26								
64	632	16	372	9								
65	272	16	177	11	83	6	57	4	43	7	31	5
66	964	31	646	21	419	26	363	23	265	16	212	14
68	1,308	27	728	15	680	23	469	15	455	15	320	11
72	1,217	26	840	18	896	20	606	13	391	14	310	12
82	226	11	129	7	136	9	99	6	96	6	71	5
83	82	6	62	5	60	6	48	5	42	4	43	4
84	964	16	571	10	307	9	222	6	227	8	176	6
85	122	9	92	7	84	9	52	6	52	7	45	6
86	165	10	86	6	106	6	65	4	80	6	64	5
87	1,245	22	752	14	682	13	475	9	356	12	288	11
88	142	11	128	9	107	7	99	6	65	5	70	5
90	1,776	25	826	12	930	15	575	9	423	12	316	9
91	694	18	415	11	255	11	216	10	237	9	203	7
93	280	26	105	10								
401	133	11	81	6								
415	58	10	38	6								
433	62	12	34	6								
Alderney	2,097	70	866	32	1,475	84	737	45	790	45	531	35
Woodside	1,877	89	787	39								

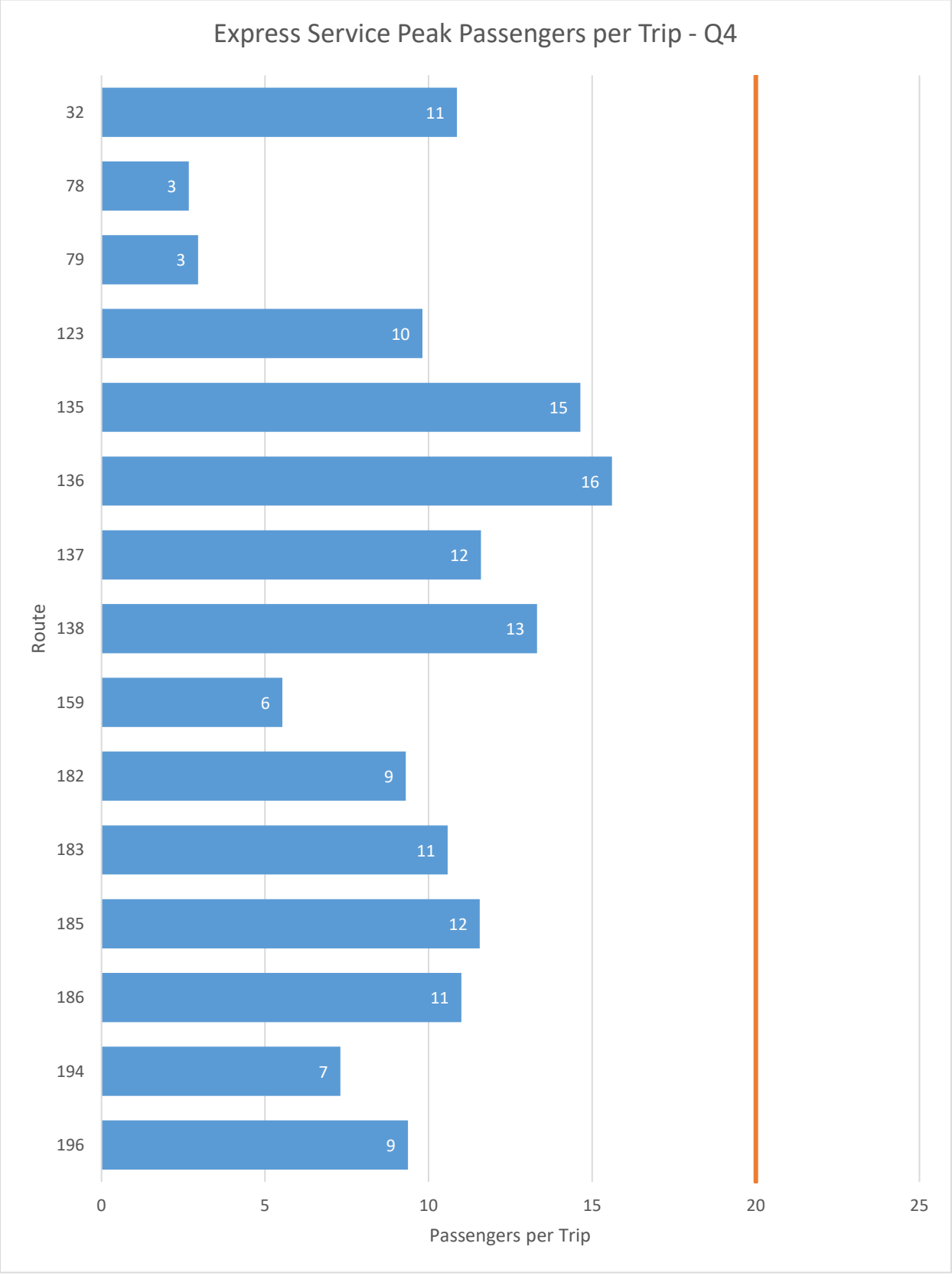
Passengers per Hour by Route



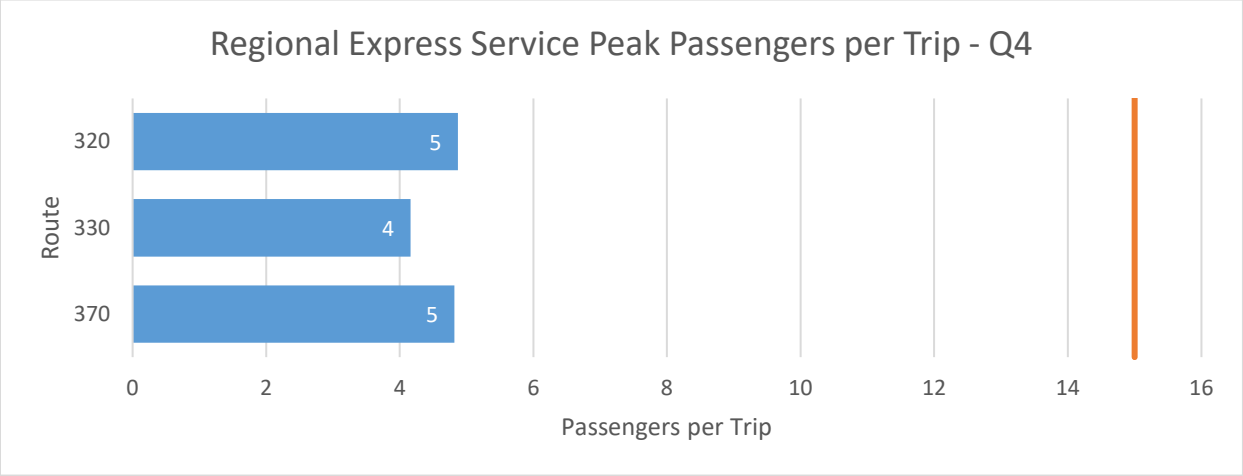
Express Service Peak Boardings and Passengers per Trip

Q4 Comparison - Average Daily Peak Boardings by Express Route				
Route	Weekday			
	19/20		20/21	
	Boardings	Pass/Trip	Boardings	Pass/Trip
78	115	7	22	3
79	94	7	17	3
123	330	22	76	10
135	551	39	104	15
136	603	38	142	16
137	395	33	68	12
138	491	35	94	13
182	557	23	130	9
183	329	25	55	11
185	676	27	151	12
186	276	23	64	11
194	166	21	30	7
196	129	32	20	9
320	164	16	30	5
330	363	17	47	4
370	117	11	34	5

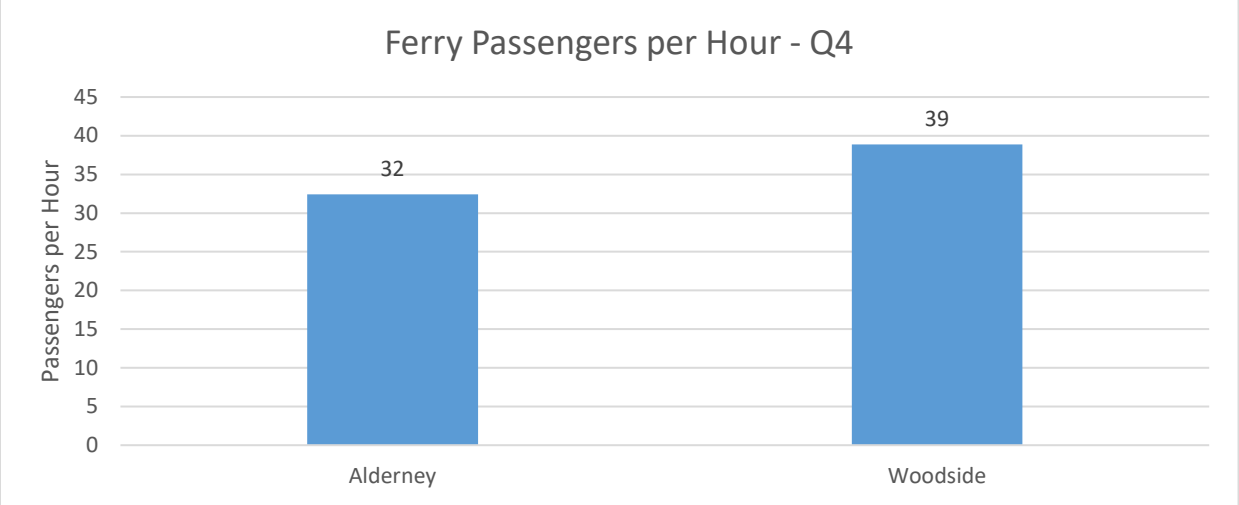
Express Service Peak Passengers per Trip by Route



Regional Express Peak Passengers per Trip by Route



Ferry Passengers per Hour

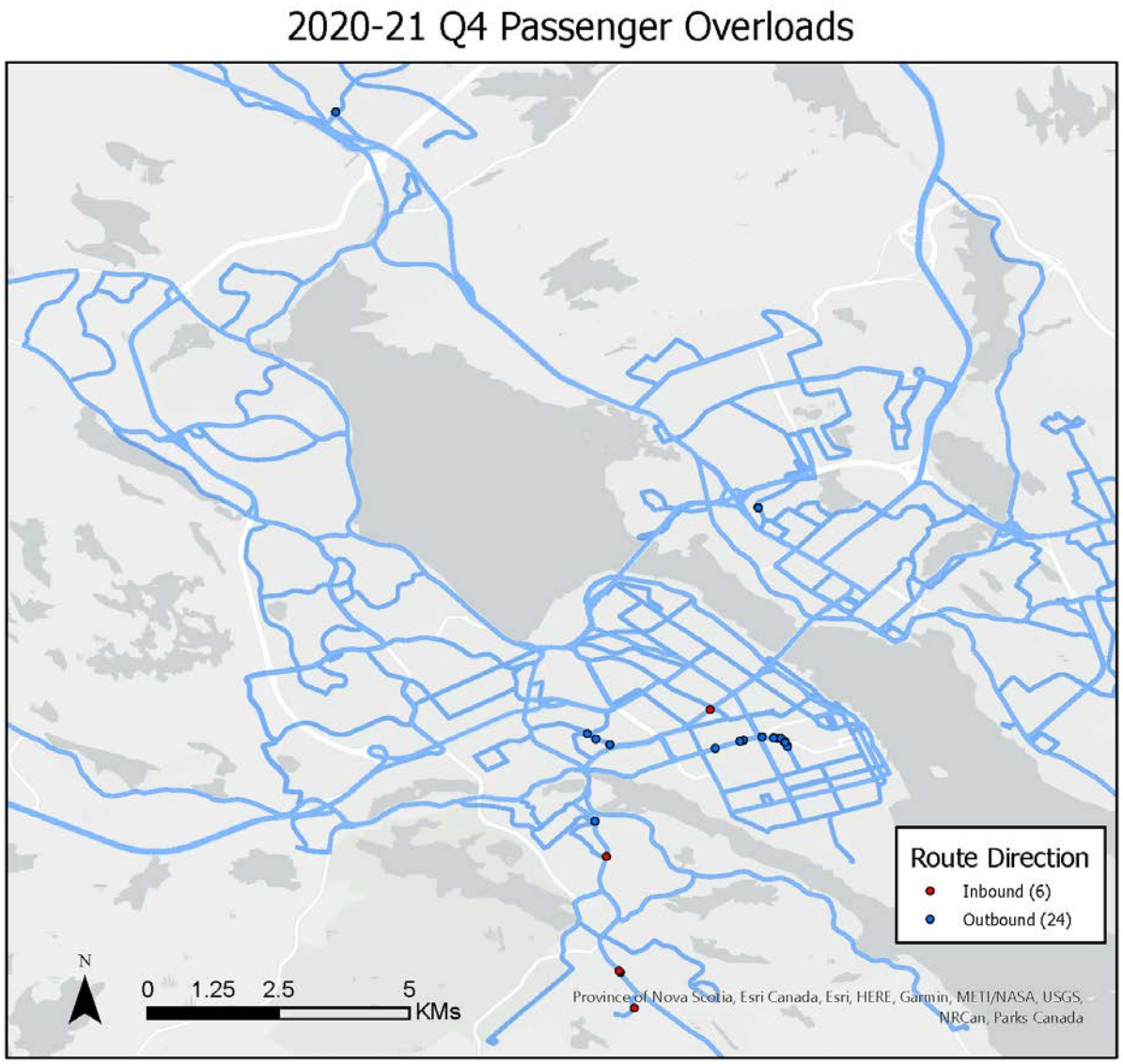


Passenger Overloads

Halifax Transit tracks overloads that are reported to help match scheduling requirements to passenger demands.

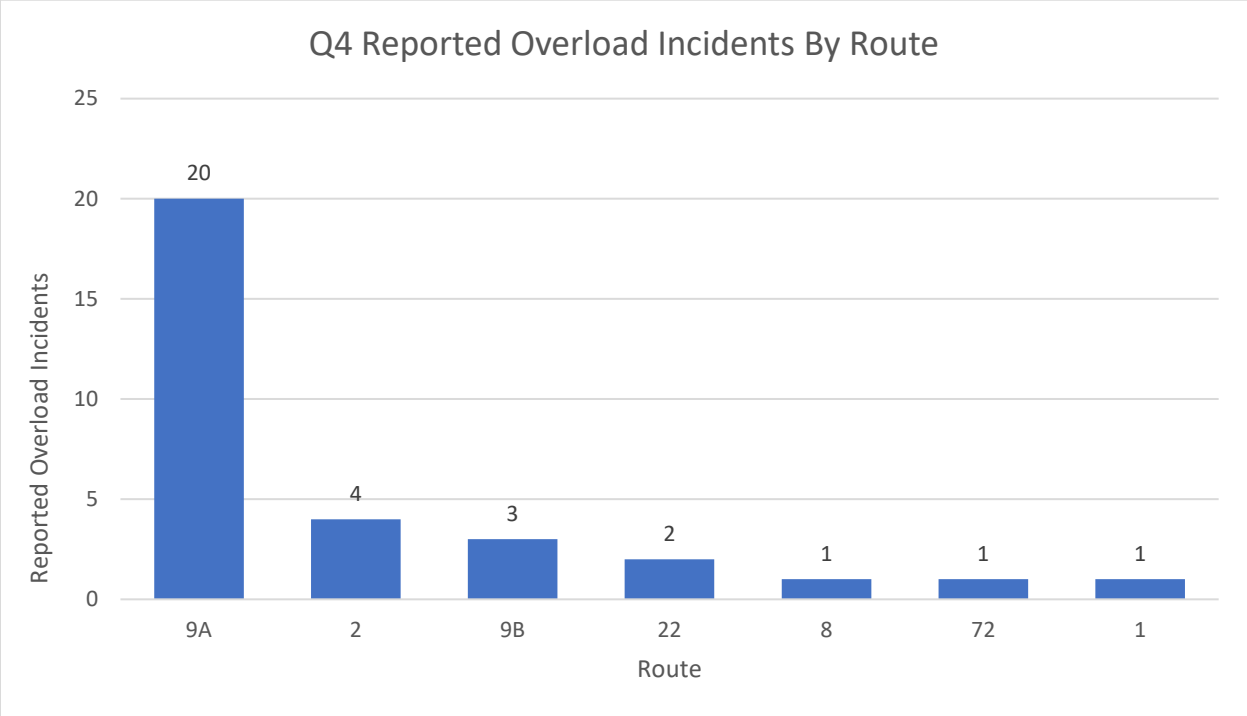
Passenger Overloads by Area

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



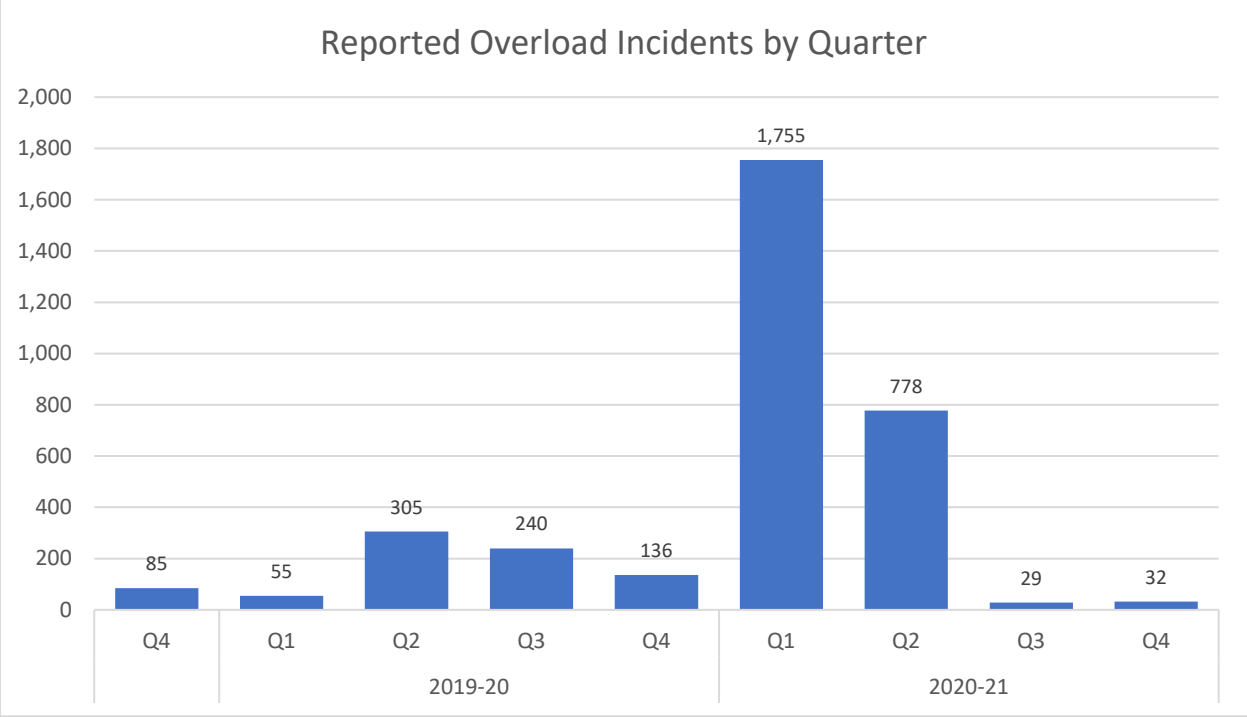
Passenger Overloads by Route

The following graph shows overloaded routes during the fourth quarter. 32 overload incidents were reported during the fourth quarter of 2020/21.



Passenger Overloads by Quarter

The following graph shows reported overload incidents over the past two years.

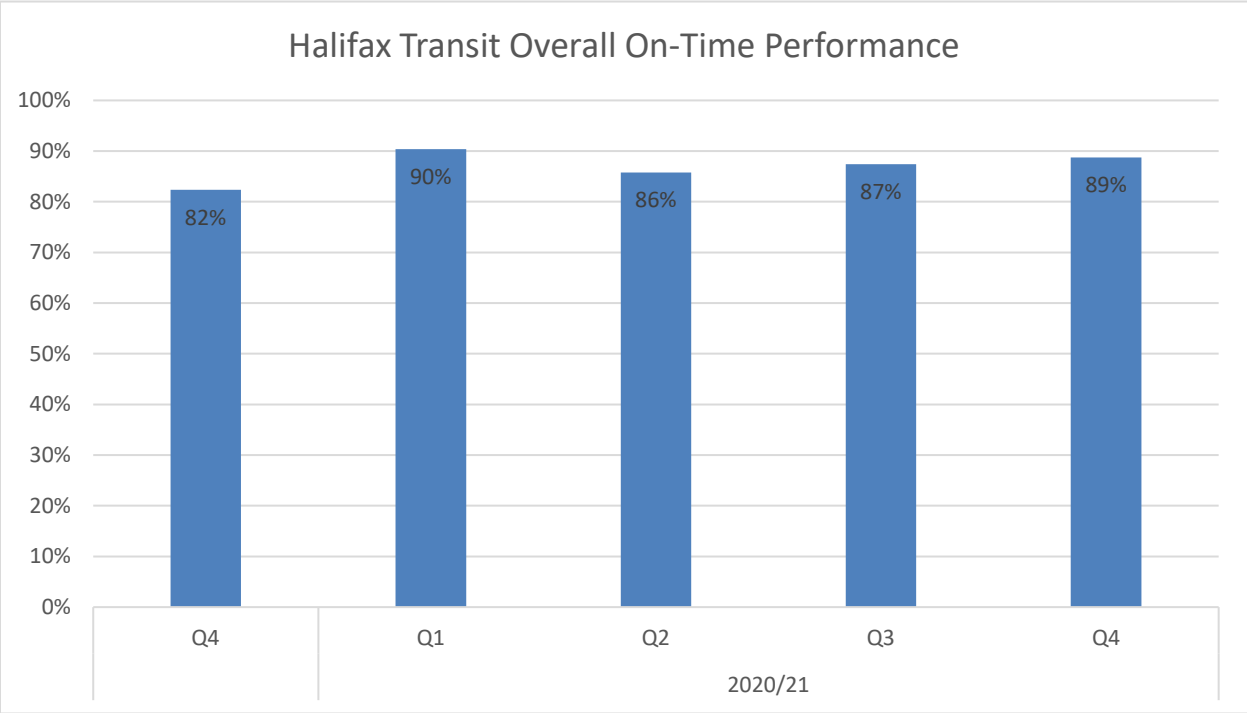


On-Time Performance

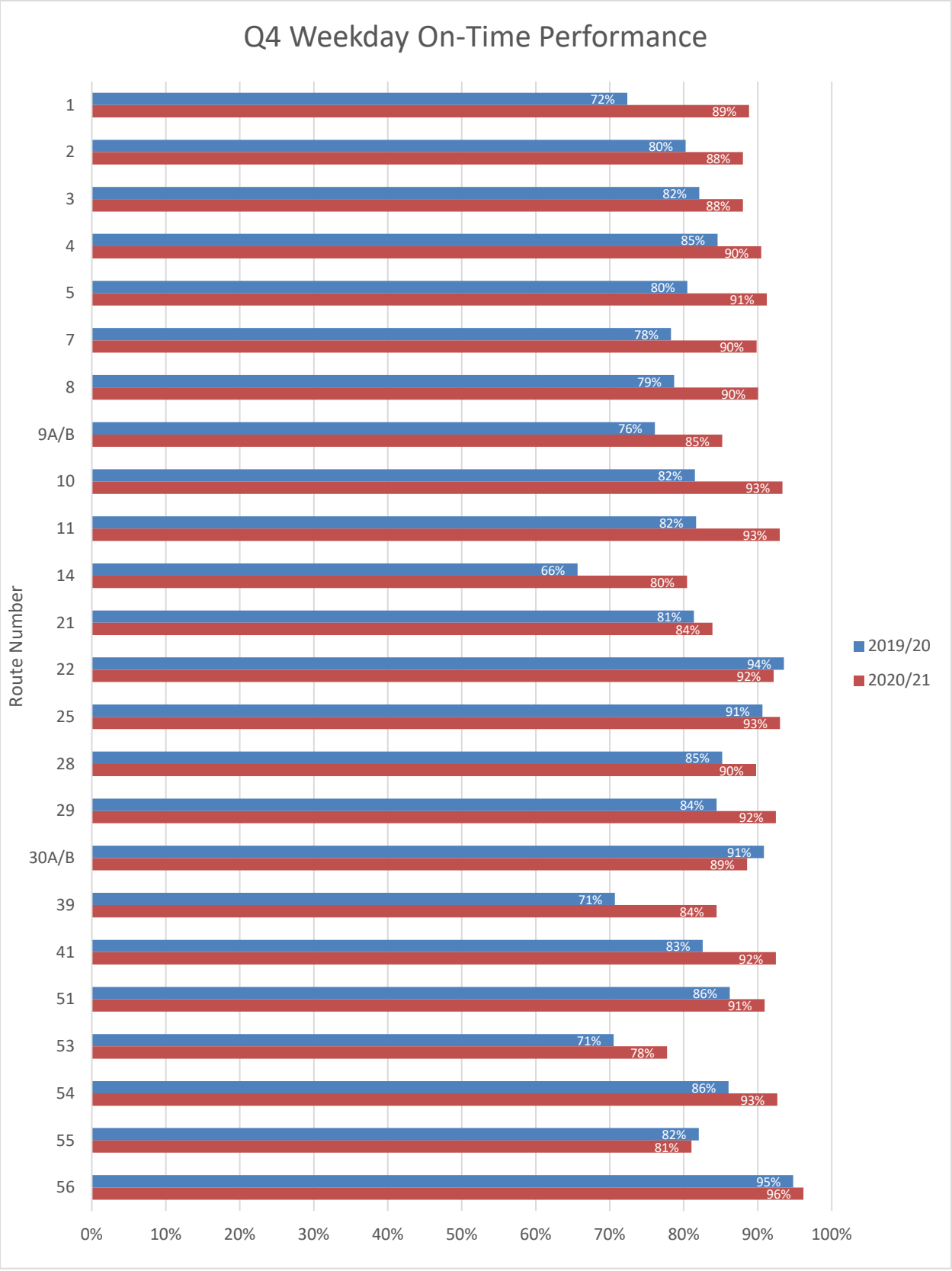
On-time performance is a measure of route reliability and is tracked monthly to demonstrate schedule adherence across the network of routes. Terminals and select bus stops along each route are classified as timepoints and have assigned and publicized scheduled arrival times. On-time performance demonstrates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

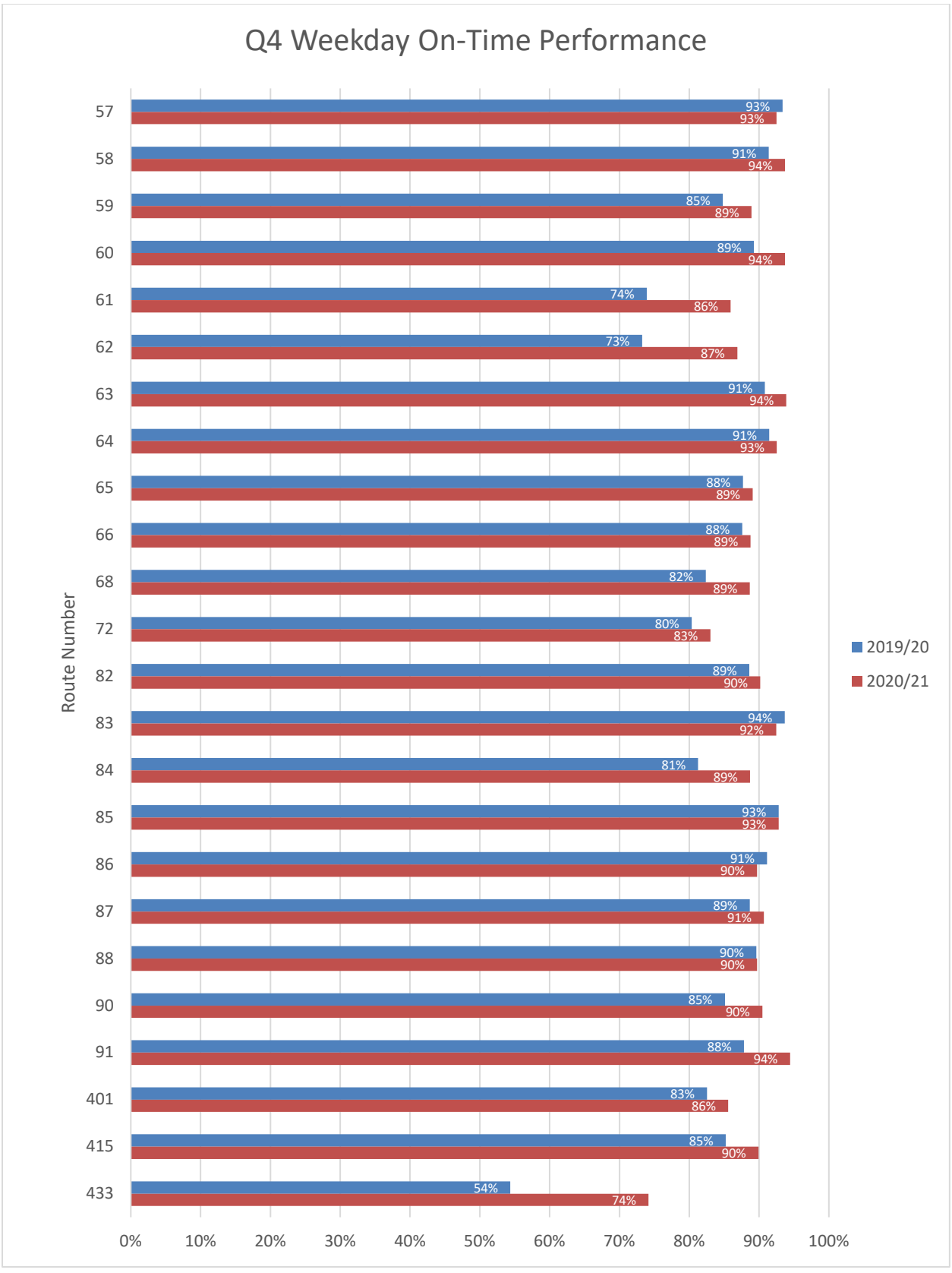
Transit industry standard targets for on-time performance tend to range between 85% and 90%, although service types are not always comparably grouped, nor are schedule adherence definitions consistent between agencies. Halifax Transit will analyze on-time performance across the network in order to establish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

Overall Network On-Time Performance



Weekday On-Time Performance




Q4 Weekday On-Time Performance
Route Number
57
58
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54%
74%
0%
10%
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40%
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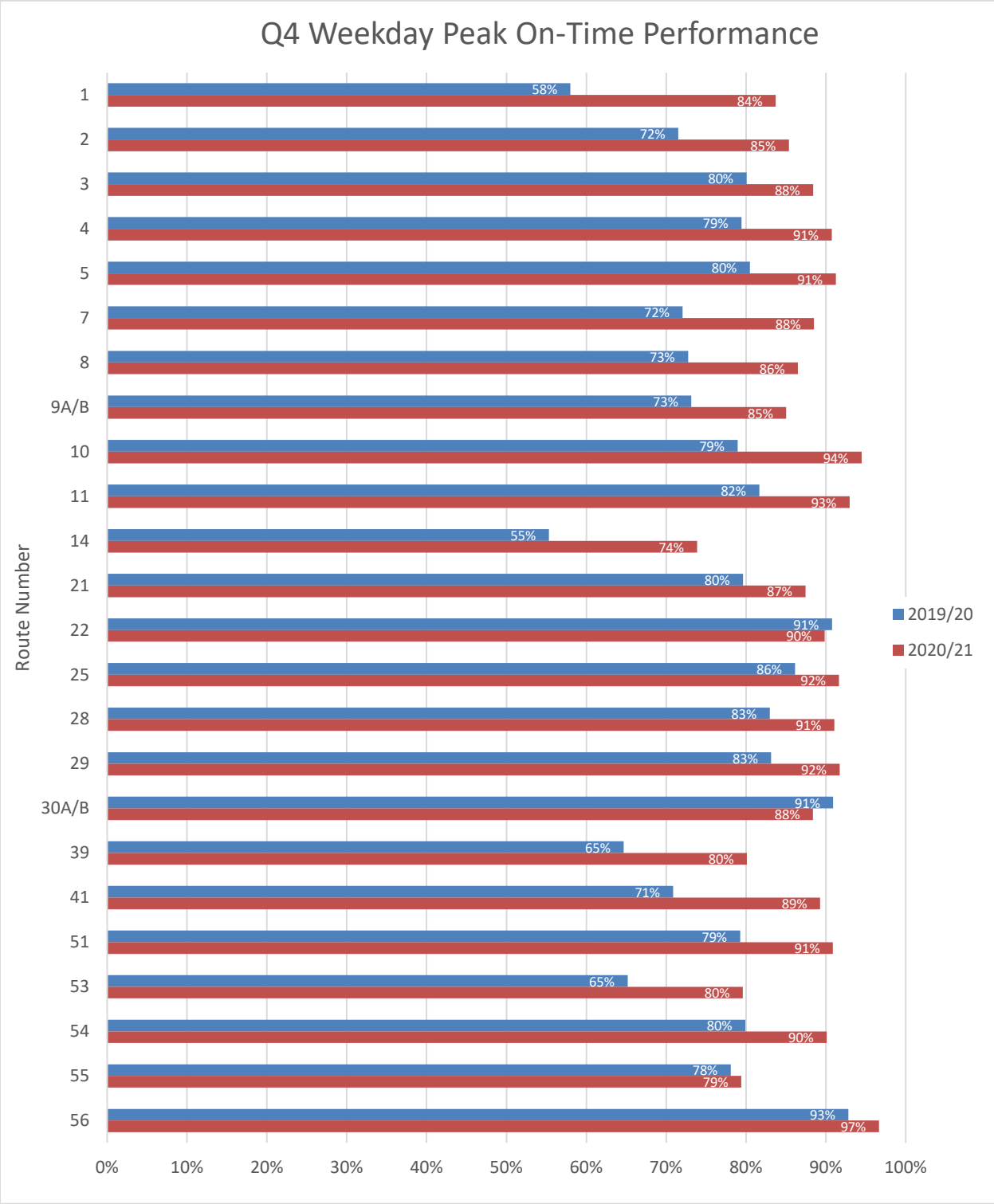
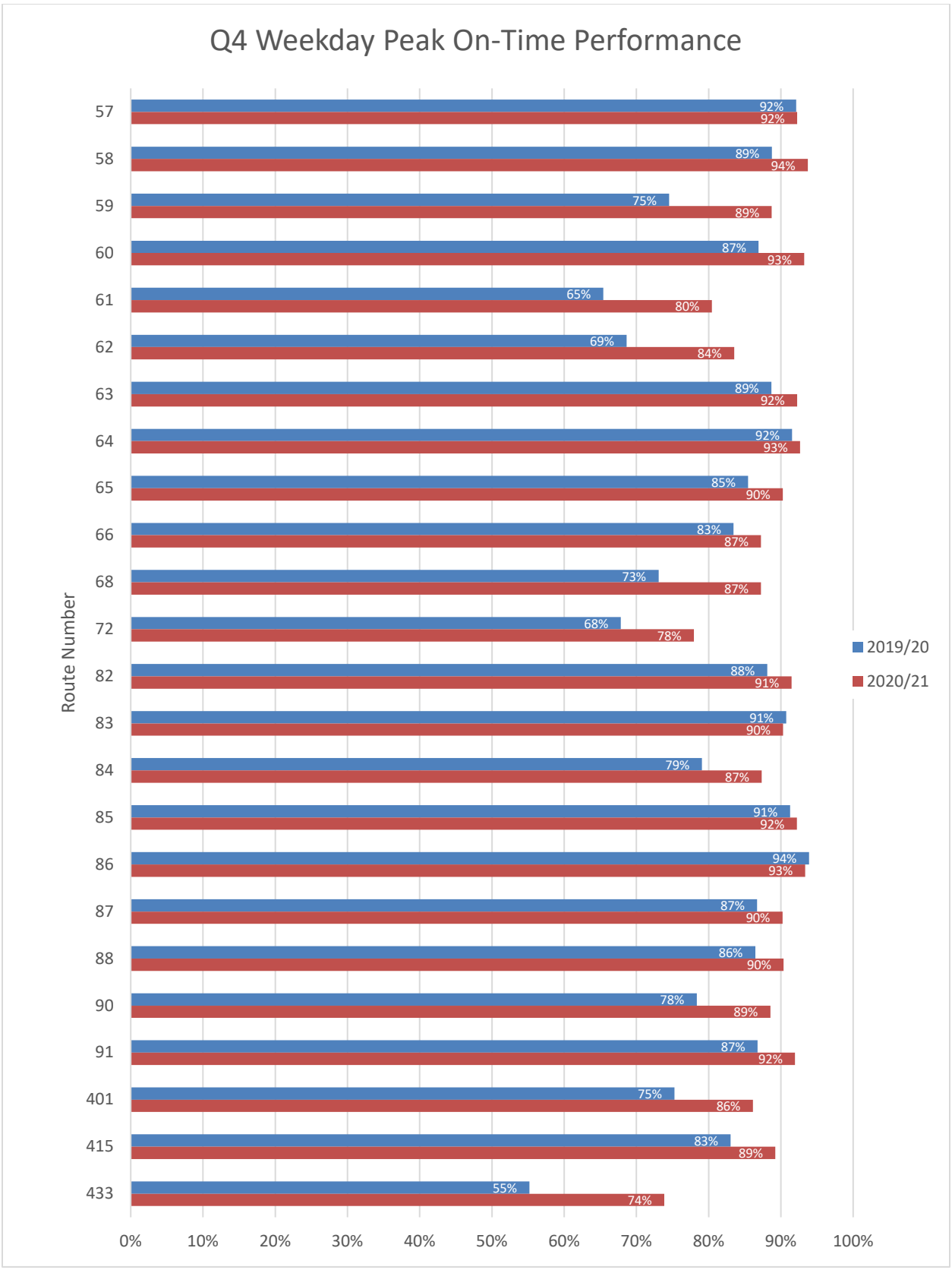
60%
70%
80%
90%
100%
2019/20
2020/21

Weekday Peak Period On-Time Performance




Q4 Weekday Peak On-Time Performance
Route Number
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30%
40%
50%
60%
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.