

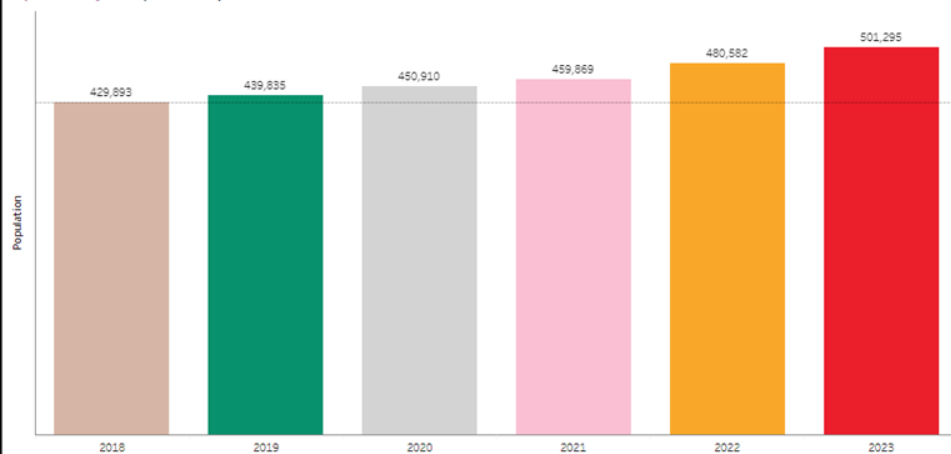
# A Different Interpretation of Halifax Transit Ridership to Address Overcrowding

By Minh Tan

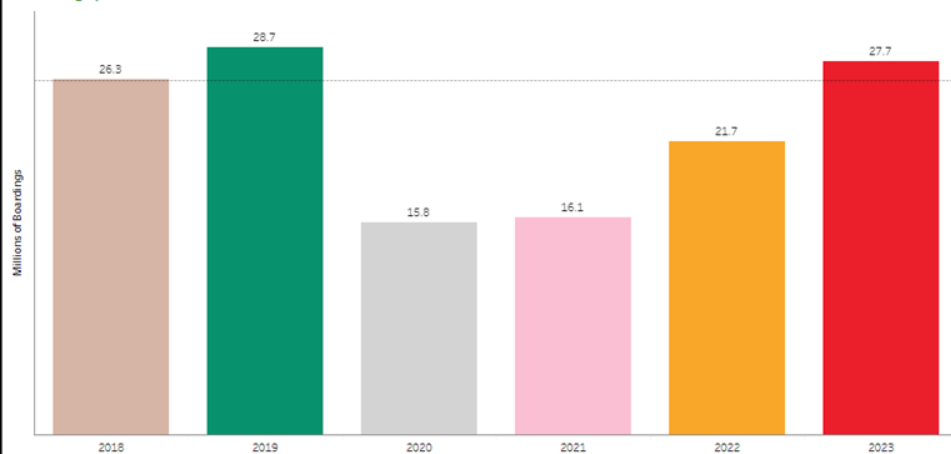
# Purpose

- To demonstrate the online analytical tool I built that everyone can use to do their own detailed analysis  
<https://public.tableau.com/app/profile/minh.tan/viz/HRMBusRidershipAnalysis/YEAR>
- To show a different picture of ridership and transit system inefficiencies than Halifax Transit does, using their data, and what that suggests for capacity to solve overcrowding
- To request peak period ridership data for better analysis towards improving system effectiveness & efficiency that can also help reduce overcrowding

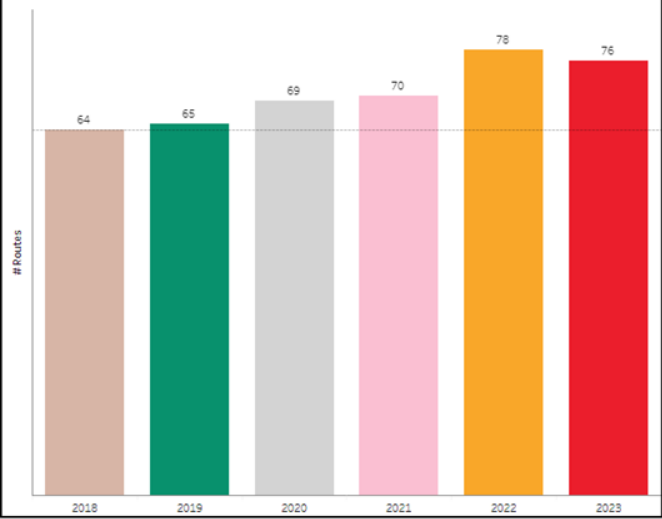
Population by Year (est. for 2023)



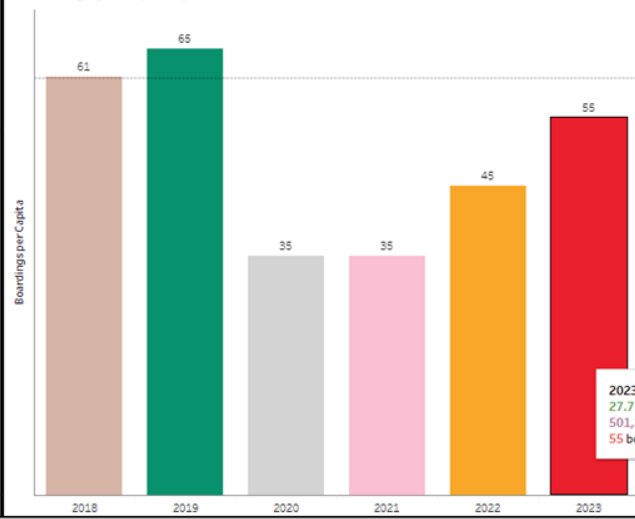
# Boardings per Year



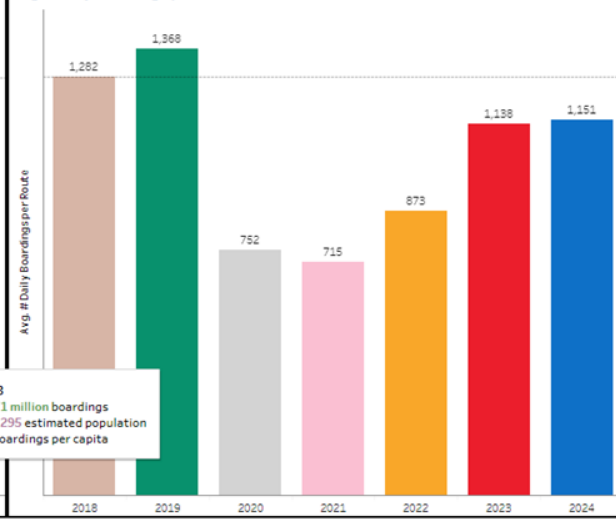
# Routes for Most of Year



# Boardings per Capita by Year

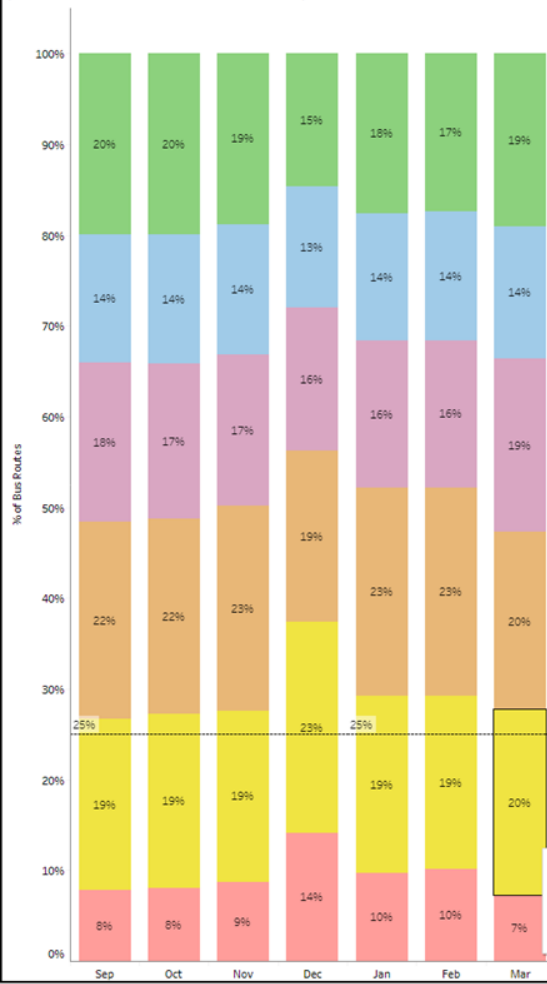


Avg # Daily Boardings per Route

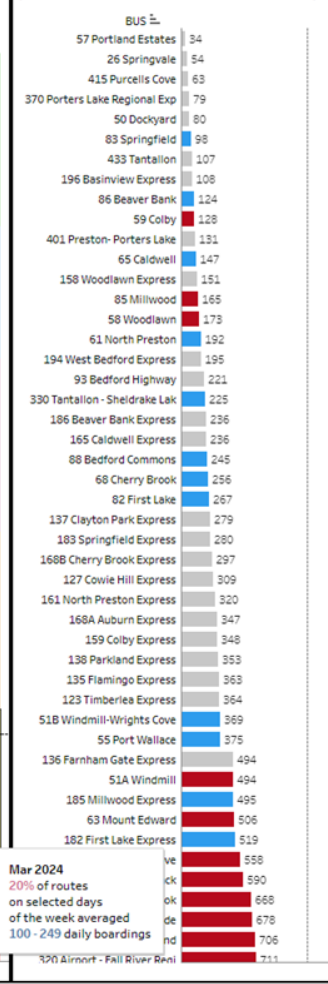


2023  
27.71 million boardings  
501,295 estimated population  
55 boardings per capita

**% of Routes with Different Daily Ridership**  
(for selected days of the week in selected date range)



**Avg # Daily Riders by Route (with runs info)**  
(for selected days of the week in selected date range)



**Mar 2024**  
20% of routes on selected days of the week averaged 100 - 249 daily boardings

**AVG # DAILY BOARDING:**

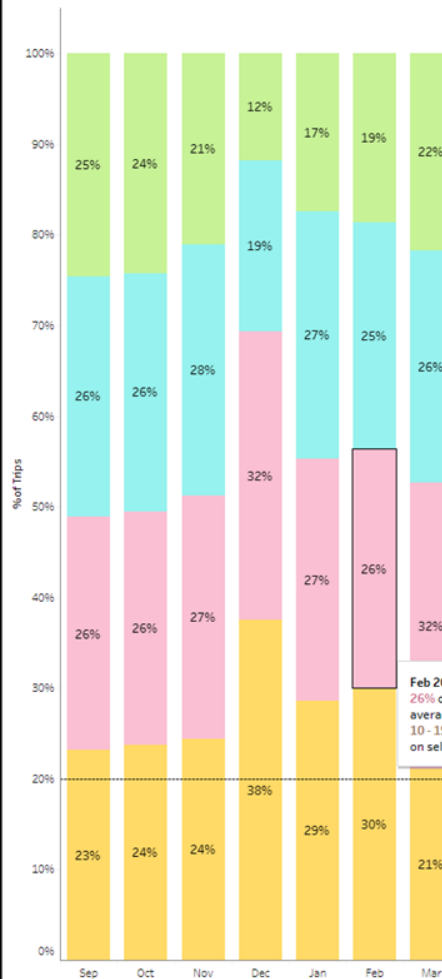
- 2000 or more
- 1000 - 1999
- 500 - 999
- 250 - 499
- 100 - 249
- Under 100

**# WEEKDAY TRIPS**

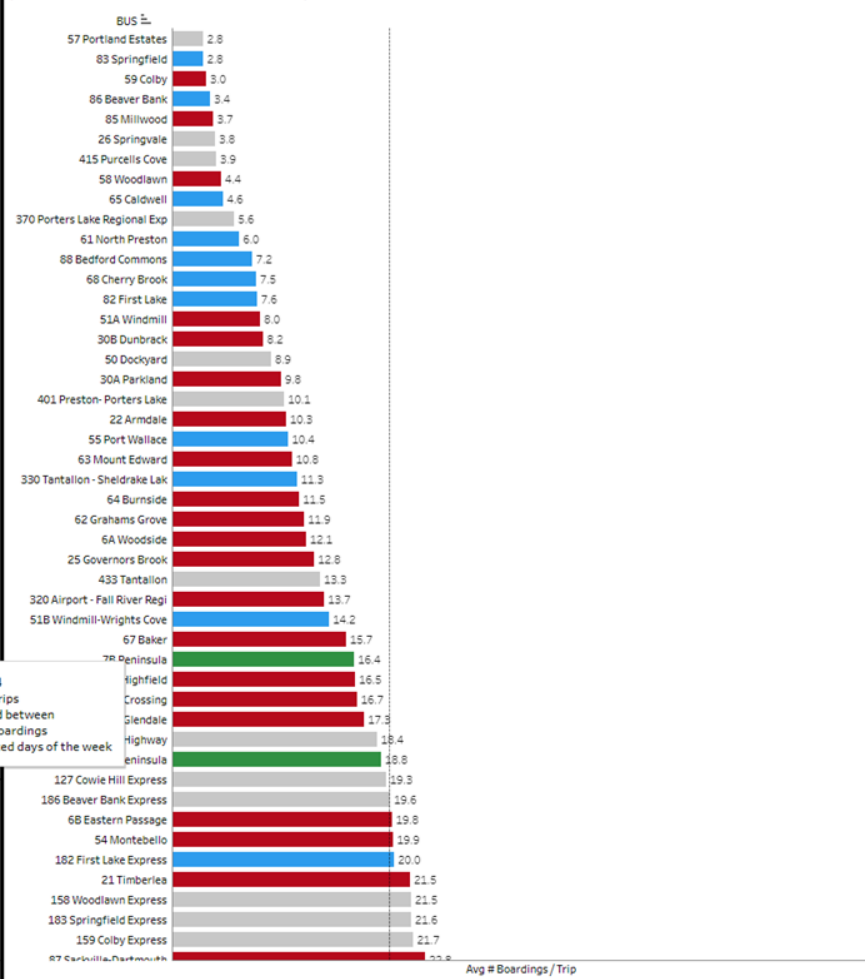
- 18 or fewer
- 19 - 36
- 37 - 72
- 73 or more

Avg. # Daily Boardings

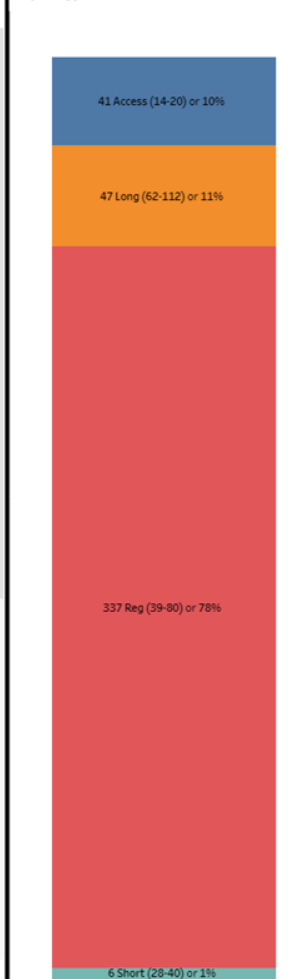
**% of Routes with Different Average Ridership per Trip**  
(for selected days of the week in selected date range)



**Avg # Boardings per Trip by Route (with trip info)**  
(for selected days of the week in selected date range)



**Active Buses in Fleet by Type (and Capacity)**



**DATE**  
9/1/2023 3/4/2024

**DAYS OF THE WEEK**  
(Multiple values)

**ROUTES**  
(All)

**# WEEKDAY TRIPS**

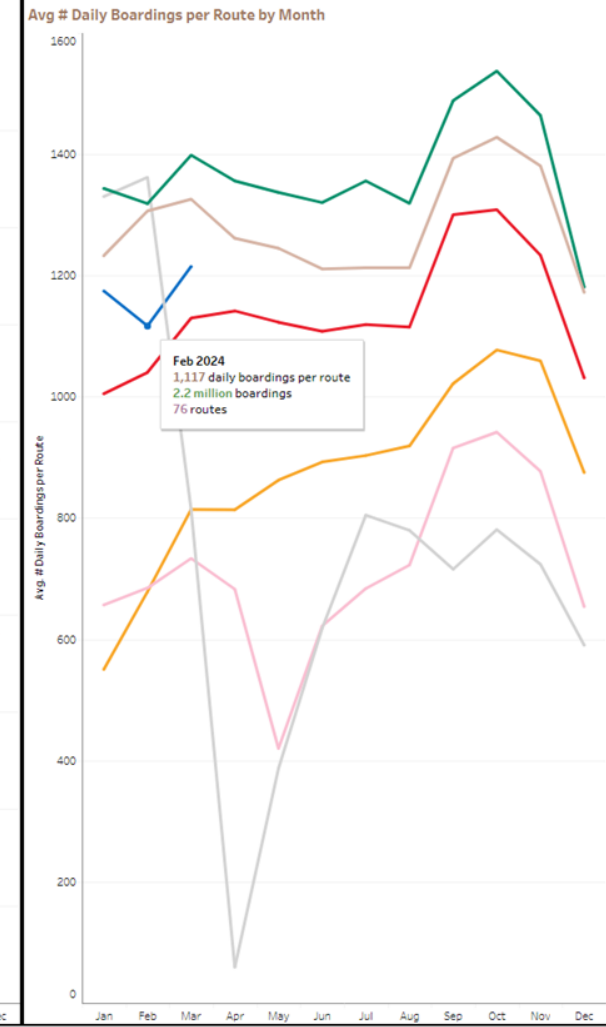
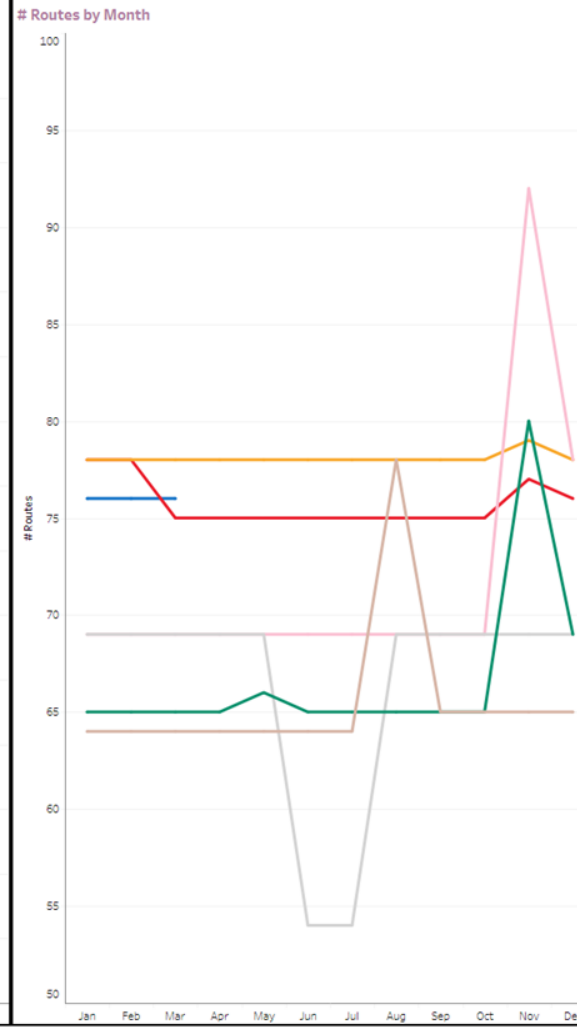
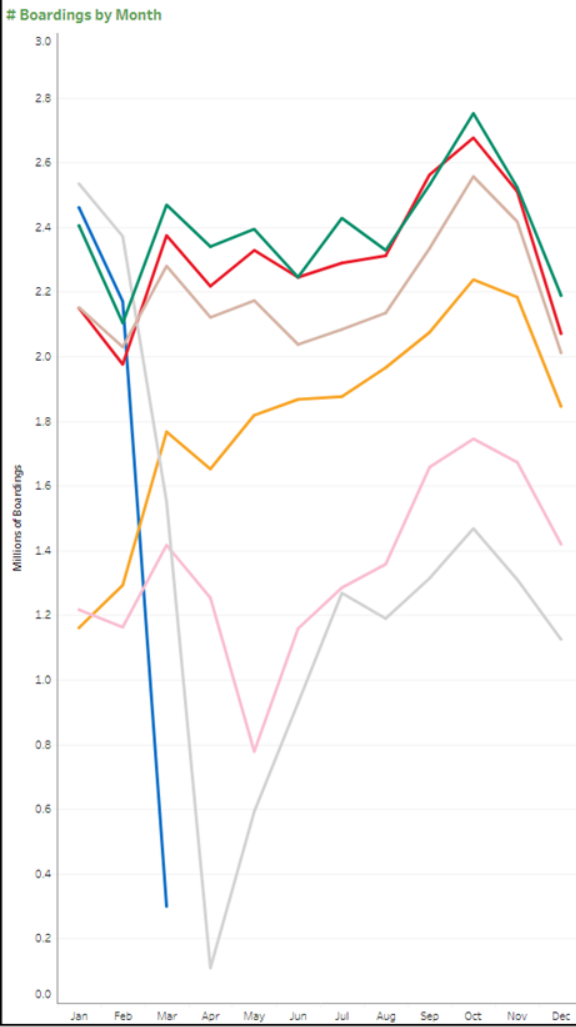
- 18 or fewer
- 19 - 36
- 37 - 72
- 73 or more

**AVG # BOARDINGS / TRIP**

- 30 or more
- 20 - 29
- 10 - 19
- Under 10

**BUS TYPE & CAPACITY**

- Access (14-20)
- Long (62-112)
- Reg (39-80)
- Short (28-40)



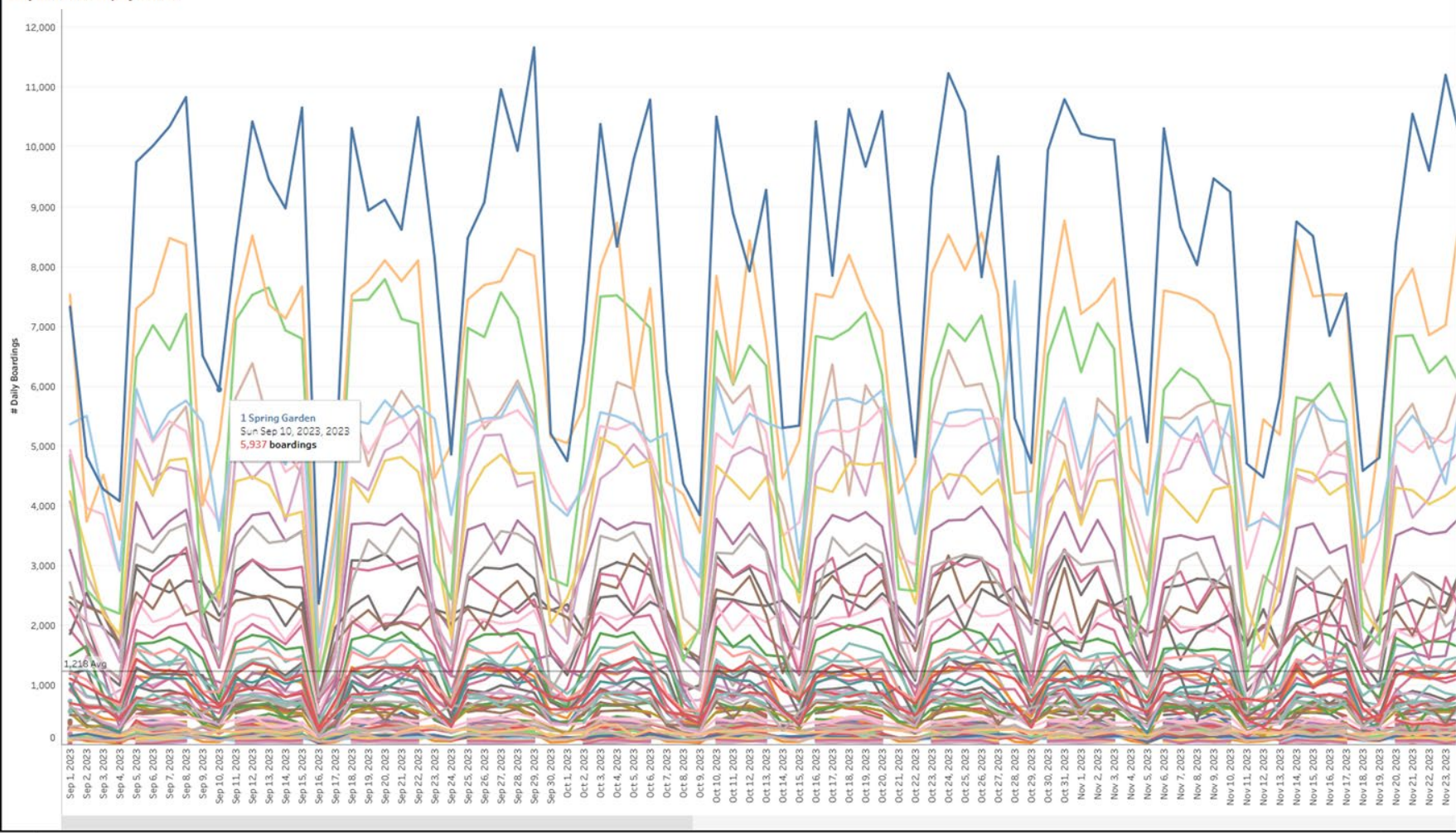
YEARS & MONTHS  
(Multiple values)

BUSES  
(All)

YEAR

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

Daily Bus Ridership by Routes



DATE  
9/2/2023 3/4/2024

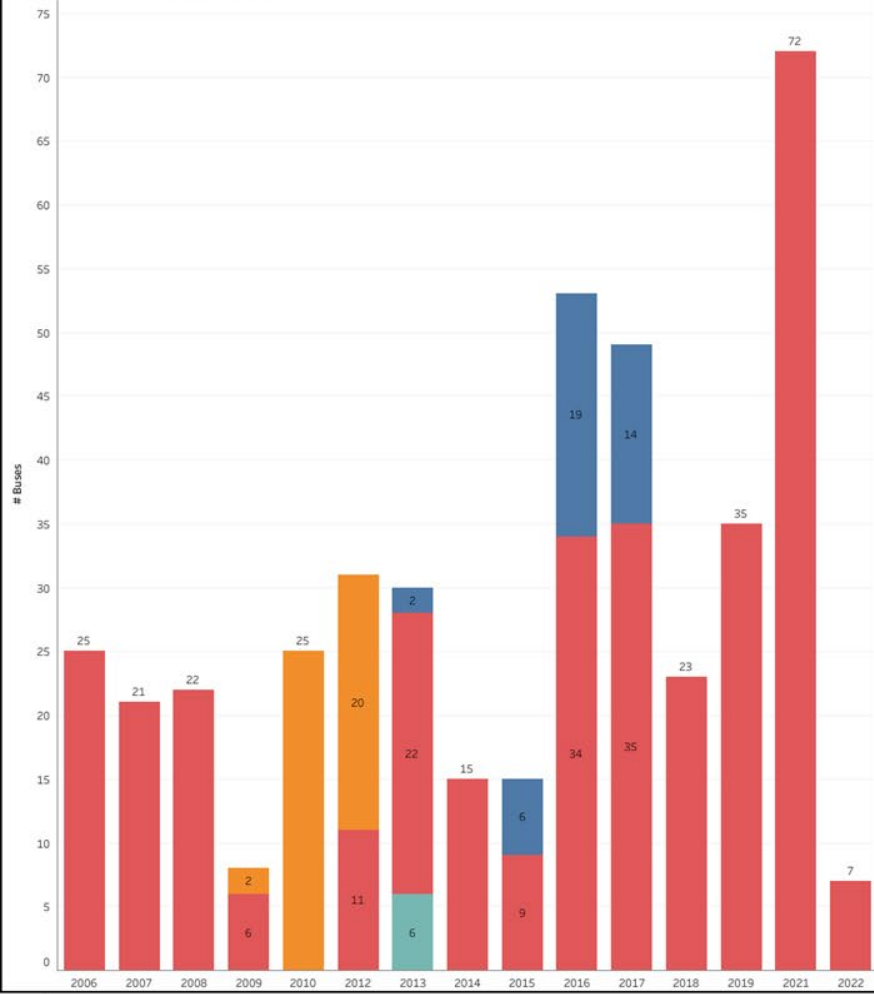
DAYS OF THE WEEK  
(All)

DAILY RIDERSHIP RANGE  
(All)

ROUTES  
(All)

- BUS LEGEND**
- 1 Spring Garden
  - 2 Fairview
  - 3 Crosstown
  - 4 Universities
  - 5 Portland
  - 6A Woodside
  - 6B Eastern Passage
  - 6C Heritage Hills
  - 7A Peninsula
  - 7B Peninsula
  - 8 Sackville Corridor
  - 9A Greystone
  - 9B Herring Cove
  - 10 Dalhousie
  - 11 Timberlea
  - 22 Armalee
  - 24 Leblin Park
  - 25 Governors Brook
  - 26 Springvale
  - 28 Bayers Lake
  - 29 Barrington
  - 30A Parkland
  - 30B Durbrack
  - 39 Flamingo
  - 50 Dockyard
  - 51 Windmill
  - 51A Windmill
  - 51B Windmill-Wright
  - 53 Highfield
  - 54 Montebello
  - 55 Port Wallace
  - 56 Dartmouth Cross...
  - 57 Portland Estates
  - 58 Woodlawn
  - 59 Colby
  - 62 North Preston
  - 63 Grahams Grove
  - 65 Mount Edward

Active Buses in Fleet by Type and Year of Make



Full Details about Active Fleet

Serial #1	Year1	Maker1	Model1	Type1
405	2013	GMC / Elkhart	G4500/ECII	Access (14-20)
406	2013	GMC / Elkhart	G4500/ECII	Access (14-20)
407	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
408	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
409	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
410	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
411	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
412	2015	GMC / Elkhart	G4500/ECII	Access (14-20)
413	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
414	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
415	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
416	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
417	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
418	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
419	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
420	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
421	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
422	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
423	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
424	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
425	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
426	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
427	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
428	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
429	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
430	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
431	2016	GMC / Elkhart	G4500/ECII	Access (14-20)
432	2017	GMC	G4500	Access (14-20)
433	2017	GMC	G4500	Access (14-20)
434	2017	GMC	G4500	Access (14-20)
435	2017	GMC	G4500	Access (14-20)
436	2017	GMC	G4500	Access (14-20)
437	2017	GMC	G4500	Access (14-20)
438	2017	GMC	G4500	Access (14-20)
439	2017	GMC	G4500	Access (14-20)
440	2017	GMC	G4500	Access (14-20)
441	2017	GMC	G4500	Access (14-20)
442	2017	GMC	G4500	Access (14-20)
443	2017	GMC	G4500	Access (14-20)
444	2017	GMC	G4500	Access (14-20)
445	2017	GMC	G4500	Access (14-20)
526	2012	Nova Bus	LFS	Reg (39-80)
527	2012	Nova Bus	LFS	Reg (39-80)
528	2012	Nova Bus	LFS	Reg (39-80)
529	2012	Nova Bus	LFS	Reg (39-80)
530	2012	Nova Bus	LFS	Reg (39-80)
531	2012	Nova Bus	LFS	Reg (39-80)
532	2012	Nova Bus	LFS	Reg (39-80)

**BUS TYPE**  
 (Multiple values) [v]

**YEAR OF MAKE**  
 (All) [v]

**MAKER**  
 (All) [v]

**MODEL**  
 (All) [v]

**BUS TYPE (CAPACITY)**

- Access (14-20)
- Long (62-112)
- Reg (39-80)
- Short (28-40)





## Addressing Overcrowding in HRM Bus Ridership

These are notes and discussions to address overcrowding in bus ridership in the Halifax Regional Municipality (HRM), from data visualized in this interactive Tableau "viz", and a meeting between Halifax Transit planners and the author. These notes supplement the information visualized, and that learned from meeting with Halifax Transit planners, with policy options on what might be done to increase efficiency in usage of resources available, and how to focus some usage of future bus transit resources.

### TABLE OF CONTENT

#### Issues for Consideration

##### Dashboards

- **Year:** Population, boarding totals, # routes ran, and average by route comparison, all by year
- **Routes:** Average boarding by route, summary and by specific routes
- **Trips:** Average boarding by trip, summary and by specific routes, and fleet bus size distribution
- **Fleet:** Active bus fleet by bus size (length and rider capacity) and year manufactured
- **Ref 1:** Boarding totals, route totals, average boardings by route comparison by month
- **Ref 2:** Daily boarding totals by route

##### Policy Options

##### Bus Routes and Trips Summary

##### Data Corrections

- **Boarding Data**
- **Bus Schedule Listing**

##### Reference Links

# Conclusions

- Capacity definitely exists to address overcrowding through greater system efficiency achieved in past years, though a systems review would be best rather than reactively by route
- Ridership comparisons to pre-COVID needs to be kept because ridership per capita is less, despite total ridership being similar
- Peak hour ridership data, time grouped as in HT quarterly report, by route and days would be very useful to have on Open Data
- HT needs to report on some different metrics pointed out, and put quarterly reports online in a dashboard to make use practical

**Thank you**

**Questions?**