Count of Reason	Column Labels		
Row Labels	Breakdown	Grand Total	Percent of total
Delayed by School	12	12	0.07%
Late return from Field Trip	16	16	0.09%
Weather Conditions	41	41	0.22%
Problem Run	48	48	0.26%
Heavy Traffic	279	279	1.53%
Accident	290	290	1.59%
Other	1674	1674	9.18%
Flat Tire	2499	2499	13.71%
Won`t Start	2970	2970	16.29%
Mechanical Problem	10399	10399	57.05%
Grand Total	18228	18228	

Reasons for Bus Breakdowns

| Reason	Breakdown
Mechanical Problem	10399
Won`t Start	2970
Flat Tire	2499
Other	1674
Accident	290
Heavy Traffic	279
Problem Run	48
Weather Conditions	41
Late return from Field Trip	16
Delayed by School	12
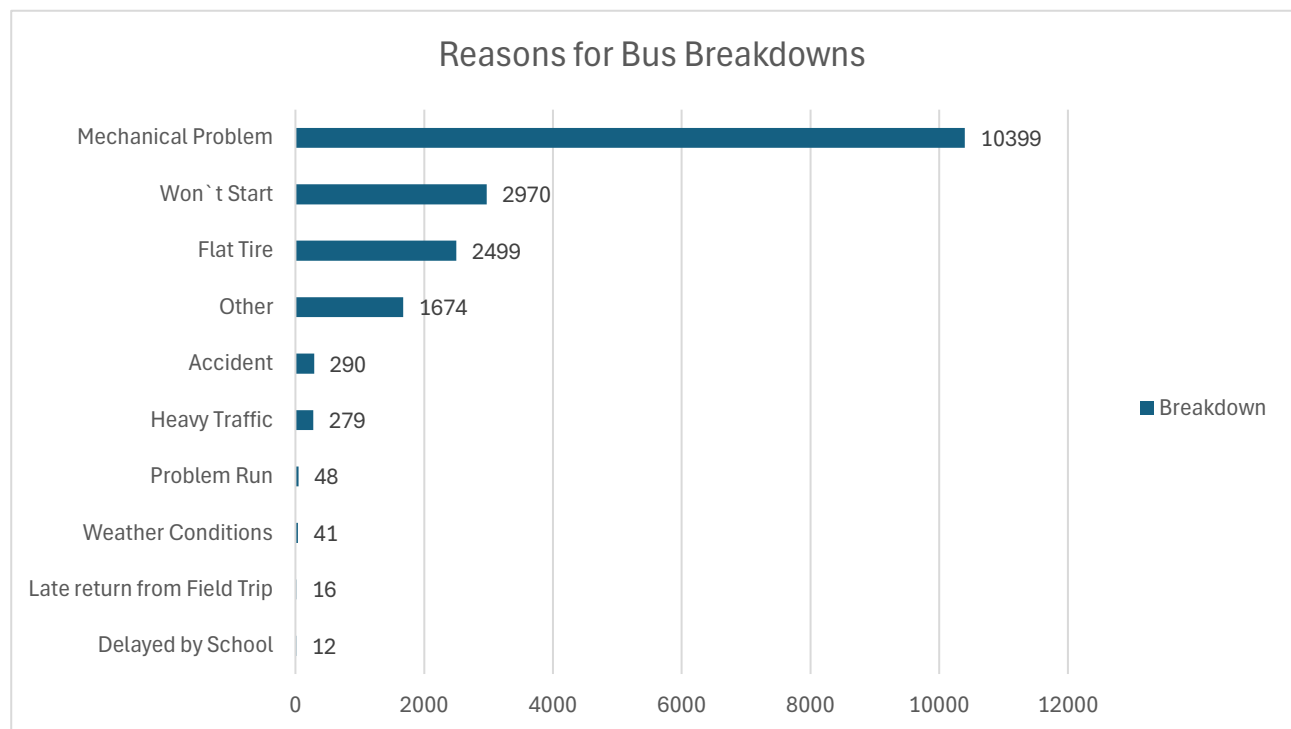
Findings:
Majority of breakdowns seem to be caused by mechanical breakdowns.
Recommend during more maintaince and service checks to avoid breakdowns and dealys. Monthly servicing should decrease the breakdowns tremendously.
Regular maintainence can reduce breakdowns by 70%.

Count of Reason	Column Labels		
Row Labels	Running Late	Grand Total	Percent of Total
Delayed by School	1737	1737	0.66%
Won`t Start	1932	1932	0.73%
Accident	2101	2101	0.80%
Late return from Field Trip	2255	2255	0.85%
Flat Tire	2401	2401	0.91%
Weather Conditions	4318	4318	1.64%
Problem Run	10193	10193	3.86%
Mechanical Problem	13695	13695	5.19%
Other	49135	49135	18.61%
Heavy Traffic	176196	176196	66.75%
Grand Total	**263963**	**263963**	

Reasons for Buses Running Late
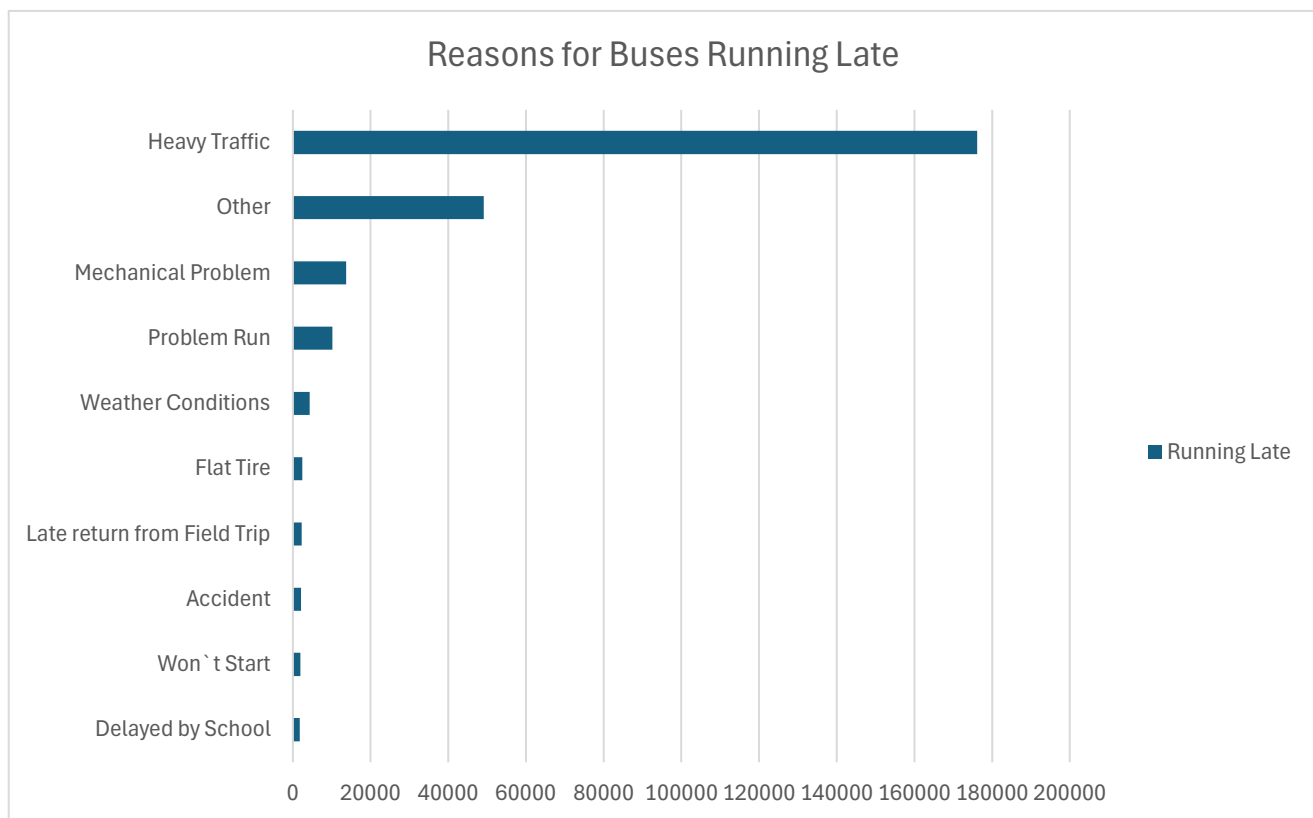
Findings:
Overwhelmingly, the main cause of delays is traffic.
Potential soltions could involve changing routes or times of departure and pick-up.

Over 5% of delays are due to mechanical issues which could be resolved with the plan for reducing bus breakdowns with regular servicing.
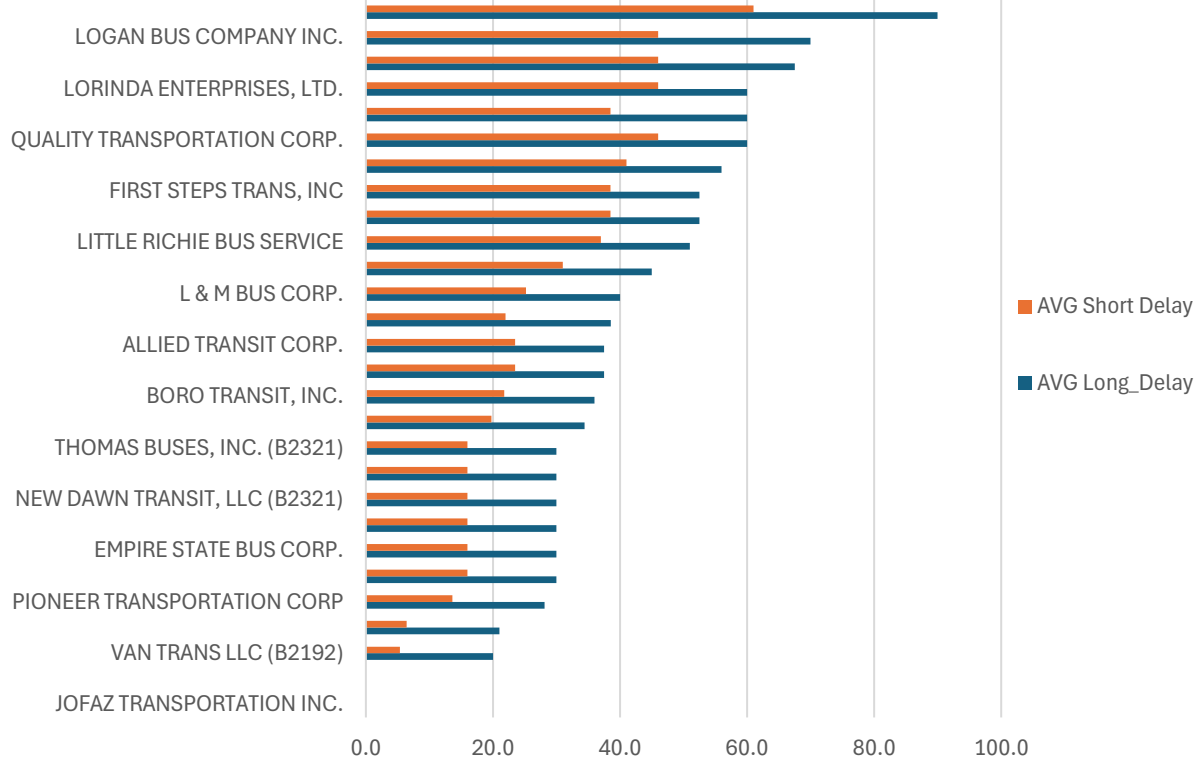
Row Labels	AVG Long_Delay	AVG Short Delay
JOFAZ TRANSPORTATION INC.		
BOBBY`S BUS CO. INC.		
VAN TRANS LLC (B2192)	20.0	5.3
ALINA SERVICES CORP.	21.0	6.4
PIONEER TRANSPORTATION CORP	28.1	13.6
GRANDPA`S BUS CO., INC.	30.0	16.0
EMPIRE STATE BUS CORP.	30.0	16.0
ANOTHER RIDE INC.	30.0	16.0
NEW DAWN TRANSIT, LLC (B2321)	30.0	16.0
HOYT TRANSPORTATION CORP.	30.0	16.0
THOMAS BUSES, INC. (B2321)	30.0	16.0
G.V.C., LTD.	34.4	19.8
BORO TRANSIT, INC.	36.0	21.8
EMPIRE CHARTER SERVICE INC	37.5	23.5
ALLIED TRANSIT CORP.	37.5	23.5
DON THOMAS BUSES, INC.	38.6	22.0
L & M BUS CORP.	40.0	25.2
RELIANT TRANSPORTATION, INC (B2321)	45.0	31.0
LITTLE RICHIE BUS SERVICE	51.0	37.0
CONSOLIDATED BUS TRANSIT, INC.	52.5	38.5
FIRST STEPS TRANS, INC	52.5	38.5
LEESEL TRANSPORTATION CORP (B2192)	56.0	41.0
QUALITY TRANSPORTATION CORP.	60.0	46.0
SNT BUS INC	60.0	38.5
LORINDA ENTERPRISES, LTD.	60.0	46.0
PRIDE TRANSPORTATION (SCH AGE)	67.5	46.0
LOGAN BUS COMPANY INC.	70.0	46.0
SELBY TRANSPORTATION	90.0	61.0
Grand Total	**40.1**	**25.0**

Row Labels	AVG Short_Delay	AVG Long_Delay
CAREFUL BUS	**29.3**	**45.1**
Delayed by School	21.1	36.3
Weather Conditions	25.3	41.5
Late return from Field Trip	25.8	40.6
Heavy Traffic	27.9	43.5
Flat Tire	31.3	46.8
Won`t Start	31.8	47.7
Mechanical Problem	31.8	47.4
Other	32.3	49.1
Problem Run	35.1	50.6
Accident	38.4	55.8
Grand Total	**29.3**	**45.1**

Careful Buss 99% of delays

Row Labels	AVG Short_Delay	AVG Long_Delay
Connecticut	11.7	26.2
Bronx	20.0	35.3
All Boroughs	20.6	35.5
Nassau County	26.2	41.4
Brooklyn	27.3	42.9
New Jersey	28.7	44.7
Staten Island	32.5	46.9
Westchester	30.0	47.8
Queens	32.9	49.7
Rockland County	33.3	51.1
Manhattan	37.0	53.1
Grand Total	**29.3**	**45.1**

Longest Delay Times by Company Excluding Careful Bus Co.

Categories (top to bottom):
- LOGAN BUS COMPANY INC.
- LORINDA ENTERPRISES, LTD.
- QUALITY TRANSPORTATION CORP.
- FIRST STEPS TRANS, INC
- LITTLE RICHIE BUS SERVICE
- L & M BUS CORP.
- ALLIED TRANSIT CORP.
- BORO TRANSIT, INC.
- THOMAS BUSES, INC. (B2321)
- NEW DAWN TRANSIT, LLC (B2321)
- EMPIRE STATE BUS CORP.
- PIONEER TRANSPORTATION CORP
- VAN TRANS LLC (B2192)
- JOFAZ TRANSPORTATION INC.

Legend:
- ■ AVG Short Delay
- ■ AVG Long_Delay

X-axis: 0.0, 20.0, 40.0, 60.0, 80.0, 100.0

Careful Bus Co. Delay Times

Y-axis label: CAREFUL BUS

Categories (top to bottom):
- Accident
- Problem Run
- Other
- Mechanical Problem
- Won`t Start
- Flat Tire
- Heavy Traffic
- Late return from Field Trip
- Weather Conditions
- Delayed by School

Legend:
- ■ AVG Long_Delay
- ■ AVG Short_Delay

X-axis: 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0

Delay Times by Borough
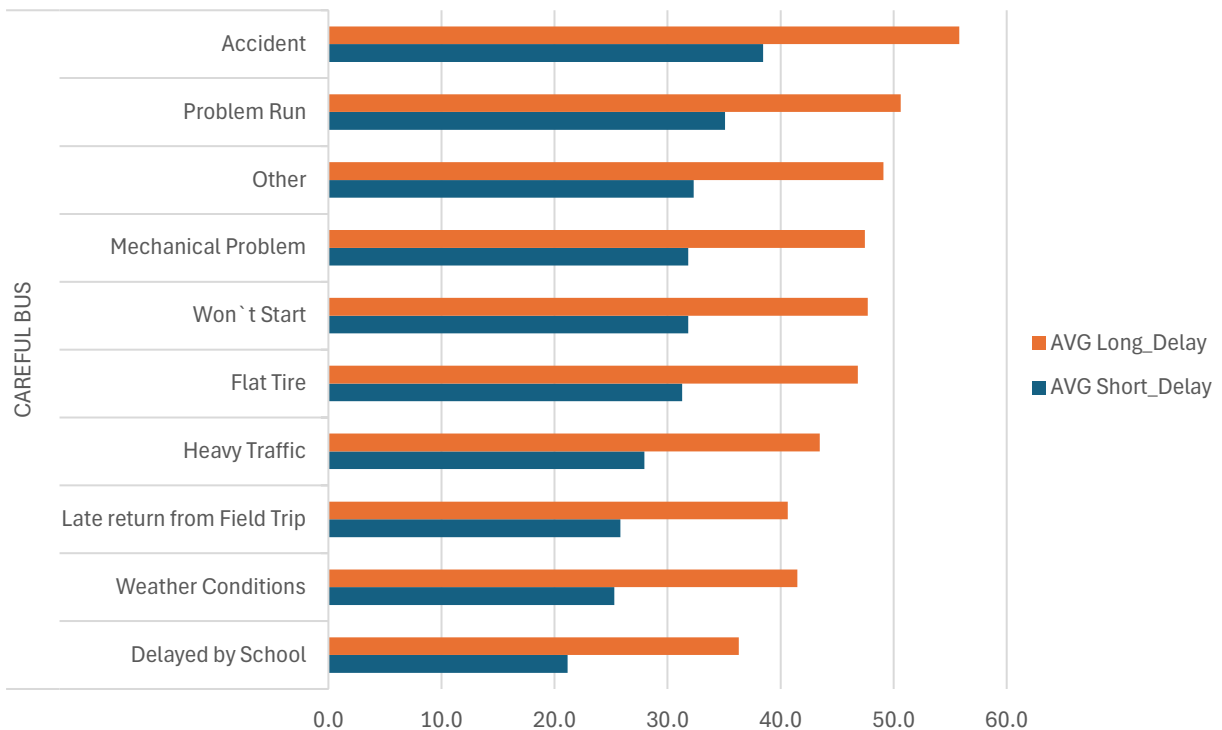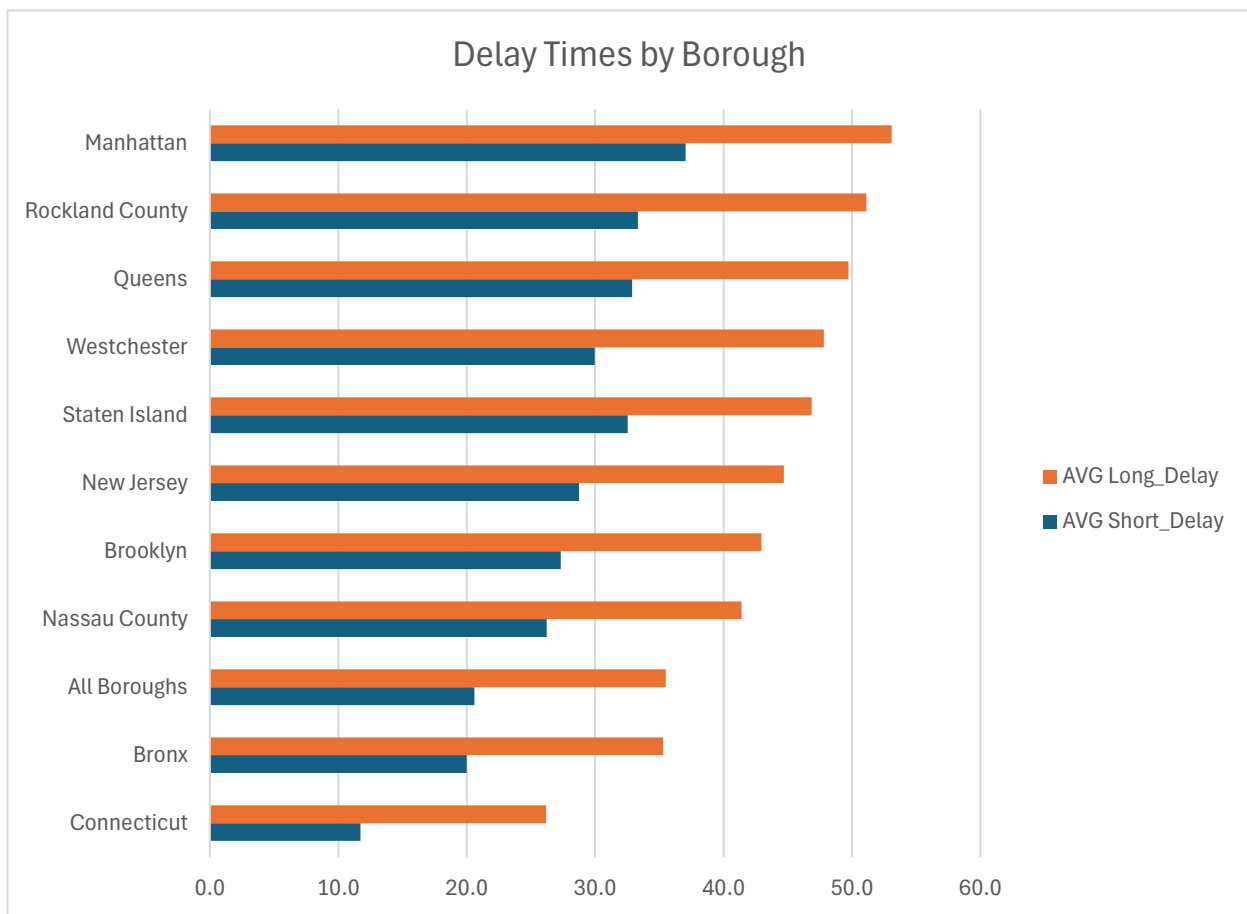
Findings:
There is not a large difference in delays between a majority of the boroughs.

Recommendation: Apply the same changes to reduce delay times to all boroughs.

Findings:
These are the top 10 companies with the longest delays excluding the Careful Bus Co. which accounts for 99% of all delays.
The longest average delay we see is between 1 hour to 1.5 hours and the shortest is 5 to 20 minutes.

Recommendation: We could potentially switch to companies that have overall lower delays times and instances than Careful Bus Co. which holds 99% of our delays.

Findings:
Careful Bus Co. is the holds 99% of all our delays. The longest delays we see are between 40 to 55 minutes on average. However, 3 out of the top 5 reasons for delay are due to mechanical issues which could be resolved with improved regular maintainence; drastically reducing the number and length of delays.

It's important to note we do not have data on how many routes each company accounts for, as such we should be careful of cutting contracts with any one company until we have this data.

| Count of Breakdown_or_Running_Late	Column Labels	
Row Labels	Breakdown	Grand Total
Monday	4146	4146
Tuesday	3619	3619
Wednesday	3573	3573
Thursday	3572	3572
Friday	3318	3318
Grand Total	18228	18228

Breakdowns by Day of Week
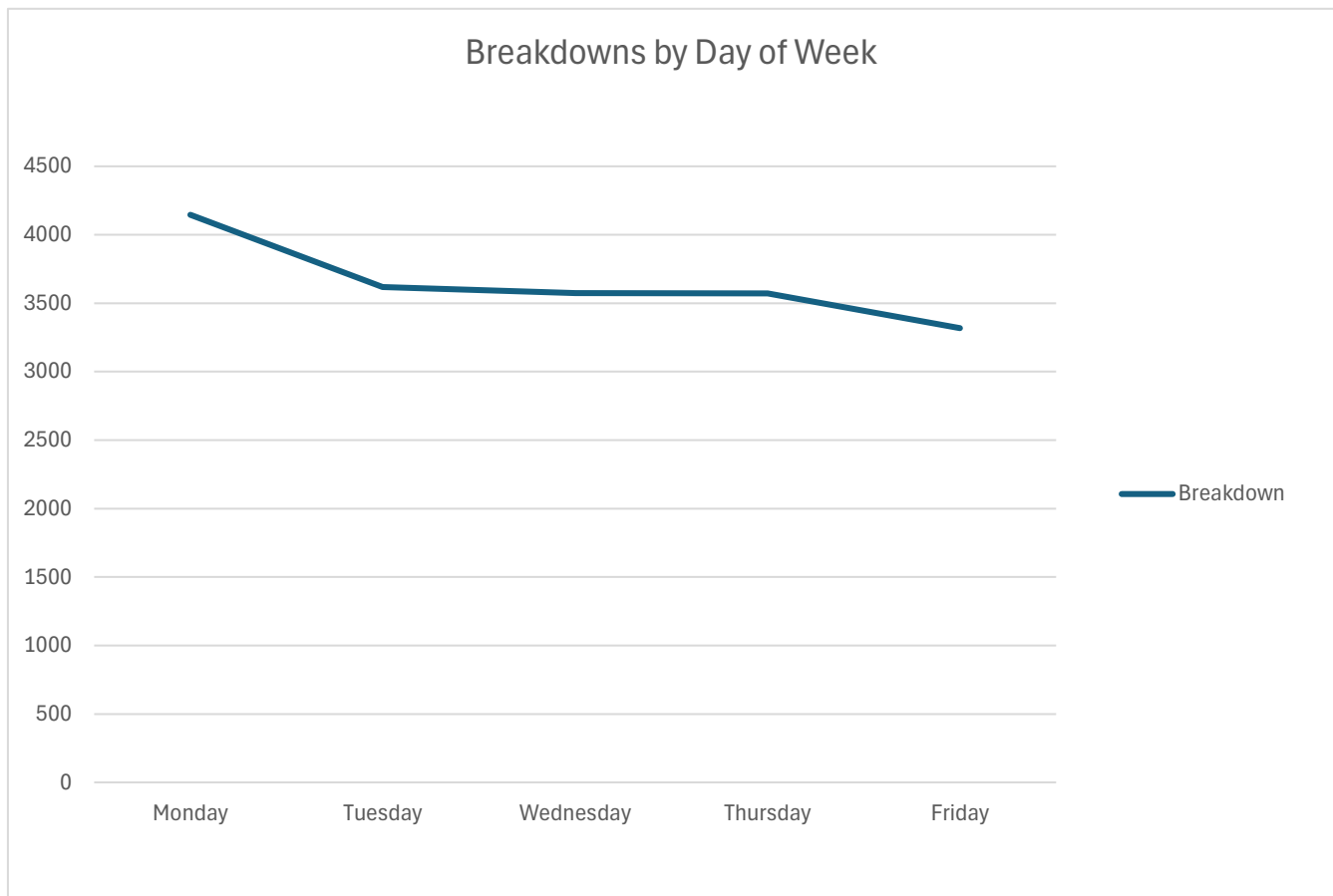
Findings:
We have the highest amount of breakdowns at the beginning of the week and the lowest towards the end of the week.

Recommendation:
On weekends we can do a service check to make sure all buses are ready to go the next day on Monday without breaking down.

Count of Breakdown_or_Running_Late	Column Labels	
Row Labels	Running Late	Grand Total
Monday	54667	54667
Tuesday	52332	52332
Wednesday	53589	53589
Thursday	53862	53862
Friday	49512	49512
Grand Total	263962	263962

Running Late by Day of the Week
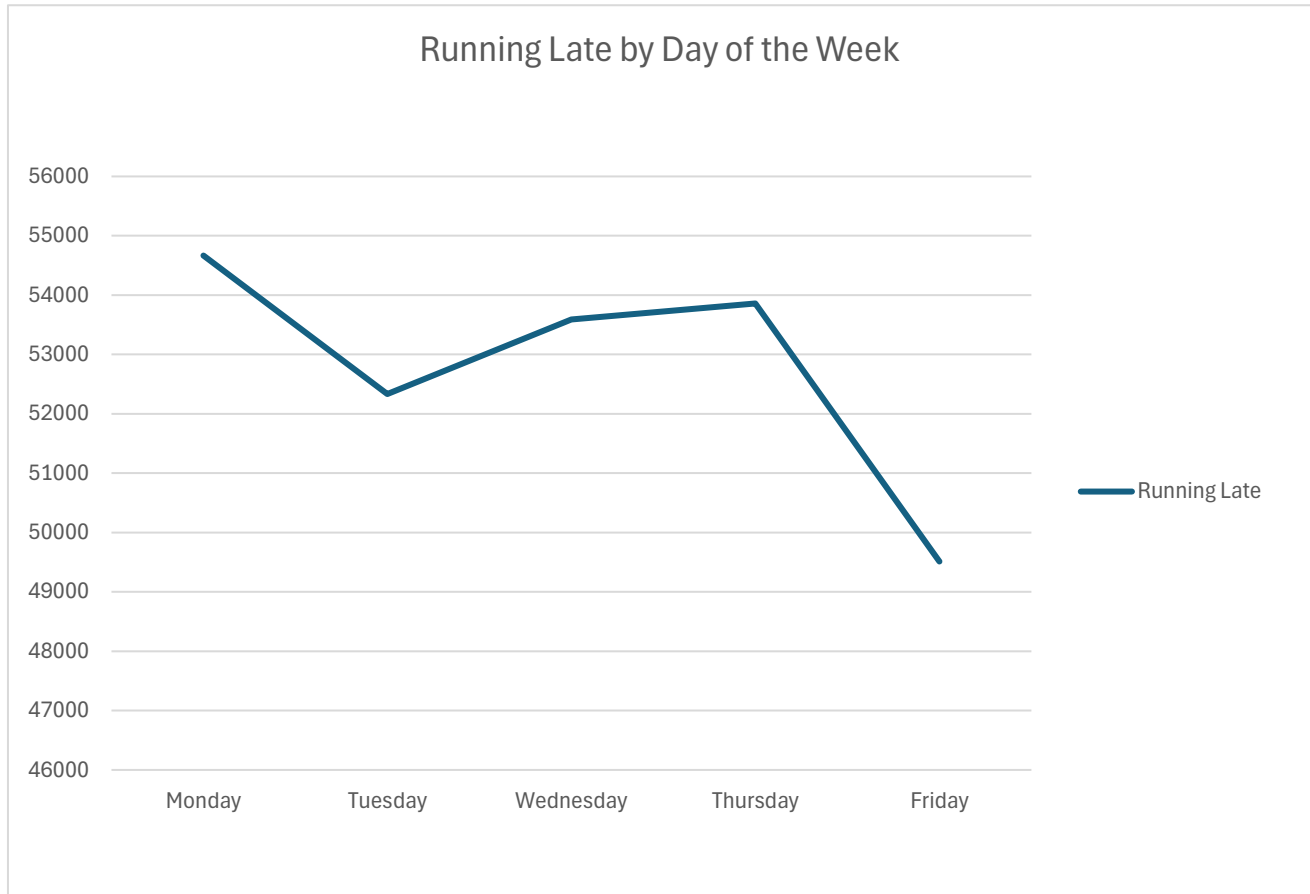
Findings:
Similar to breakdowns buses run later more often at the beginning of the week than the end. However we see a jump on Thursdays similar to Mondays.

Conclusion:
Mondays and Thursdays have the highest amount of traffic due to the busy workdays for a majority of people. Fridays see a significant drop because Many people leave work either earlier or later than the rest of the week.