Municipal Parking Trends Between 2020 & 2021 Surrounding Jackson Square

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Background & Problem Statement

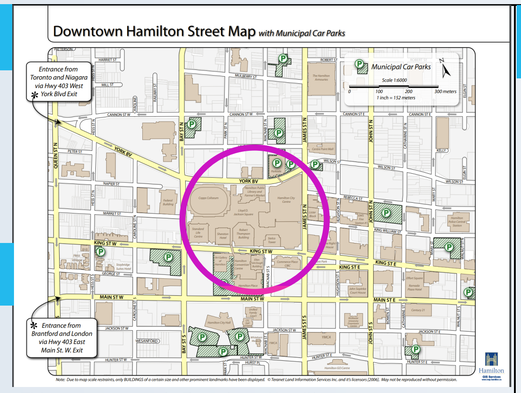
Jackson Square is a high traffic establishment and are a hub for commercial and corporate buildings, such as business, shopping, transportation, and entertainment services. Jackson Square is encircled by four main streets in Downtown Hamilton. Between 2020 and 2021 during the Covid-19 pandemic, there have been significant trends with public parking lots within the area of Jackson Square.

Goal and Objectives

This project is intended to showcase the comparison of vehicle flow, duration, and pay rates between 2020 and 2021 in the public parking lots around Jackson Square. The trends determine the future state usage in the lots in these areas.

The objectives of the project are as follows:

- Trends of parking lots at JS and its surrounding areas.
- Comparison of parking lots between 2020 and 2021 using datasets provided by the project owner.
- Assessing four main lots within a walking distance from JS and analyzing these data.
- Recommending solutions for the future state.



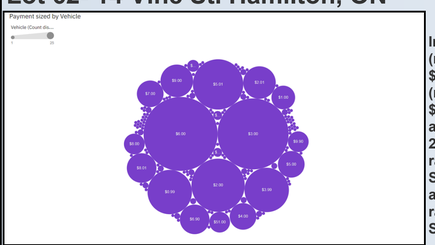
This map represents Downtown Hamilton where the purple circle represents Jackson Square(JS) area and its surroundings.

LotNumber	Location	LotAddress	Walking_Distance_JS
13	Wilson Steet and James North	96 James St. N.	6 minutes
62	Vine Street	14 Vine St.	8 minutes
69	York Boulevard Parkette	12 York Blvd.	6 minutes
76	Catharine Street South and Hunter Street East	75 Catherine St. S.	11 minutes

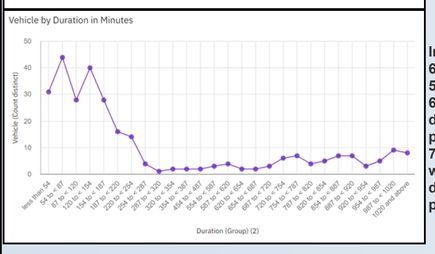
This photo represents the lots that are being analyzed. These are the walking distances from the lot to JS. The team has used Google Maps to measure the walking distance.

2020 Parking Analysis and Graphs

Lot 62- 14 Vine St. Hamilton, ON

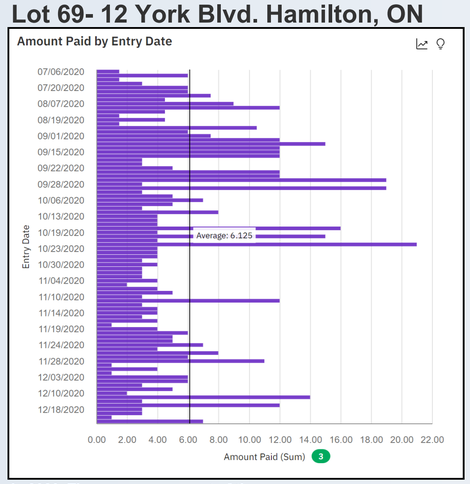


In 2020, the most paid rates were $3 (note that the rate/hour increased from $2 to $3 on September 22nd, 2020), $6 (note that the rate/hour increased from $6 stay all day at 13 hours to $12 stay all day at 17 hours on September 22nd, 2020). The second most paid rate was $2 (the rate/hour prior to September 22nd, 2020). $0.99, $3.99, and $5.01 were the third most paid rates which were all paid after September 22nd, 2020 in lot 62.



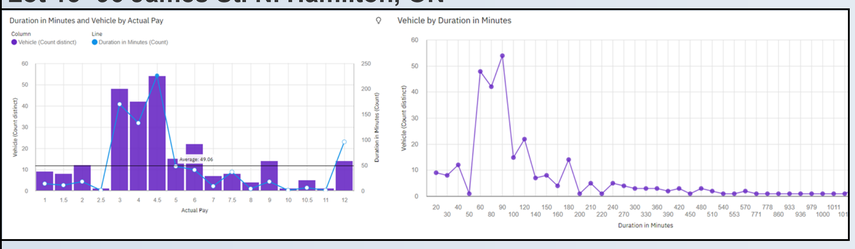
In 2020, 189 vehicles parked in lot 62. Of that 189, 44 stayed between 54 and 87 minutes, 30 of that stayed 60 minutes (being the most popular duration time). The third most popular duration time was 720 and 754 minutes with 26 parked vehicles which is in the 12-hour range, but it did not qualify for stay all day parking.

Lot 69- 12 York Blvd. Hamilton, ON



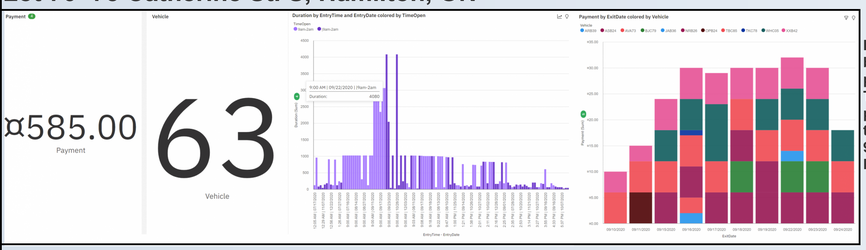
In 2020, The average payment of the year was $6.125 for $3 per hour and $12 dollars for Stay All Day for lot 69.

Lot 13- 96 James St. N. Hamilton, ON



In 2020, 54 distinct vehicles stayed of 90 minutes in Municipal Parking Lot 13 in Hamilton, Ontario. There were 834 distinct license plates that used the lot. The price was $3 per hour, where the Stay All Day price was $12.The most popular durations were between 60 and 90 minutes. The average duration for each vehicle was just under 50 minutes.

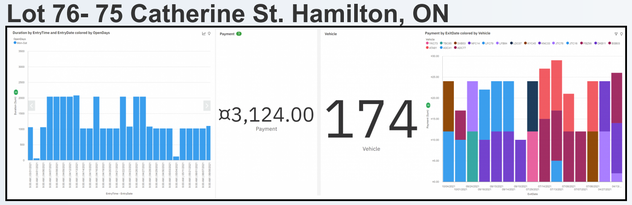
Lot 76- 75 Catherine St. S, Hamilton, ON



In 2020, the month of September was the busiest at lot 76. The average was around $8 per day. In 2020, Lot 76 had revenue of $585. There were 63 distinct vehicles using the parking lot. These graphs show the entry time to lot 76 during 2020. The bars indicate that 9:00 AM was the peak time for the usage of the lot.

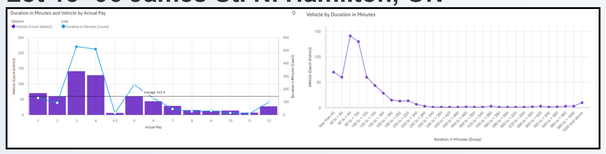
2021 Parking Analysis and Graphs

Lot 76- 75 Catherine St. Hamilton, ON



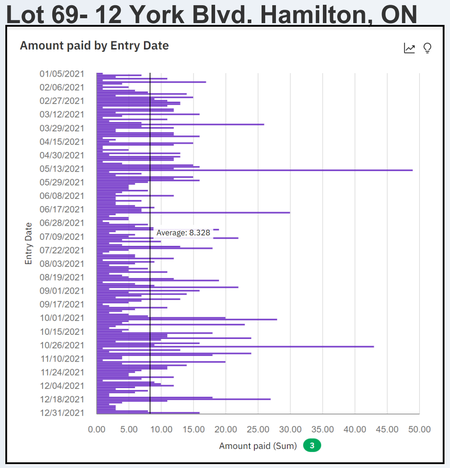
These graphs analyze the payment by vehicle upon exit date. In 2021, lot 76 had a revenue of $3,124 throughout the year which has significantly increased compared to 2020. There were 174 distinct vehicles who have used the lot spaces. The graphs illustrate the peak times where parking spots are being used. According to data analysis, it has showed that 9:00 AM was the peak time in 2021 for the usage of the lot.

Lot 13- 96 James St. N. Hamilton, ON



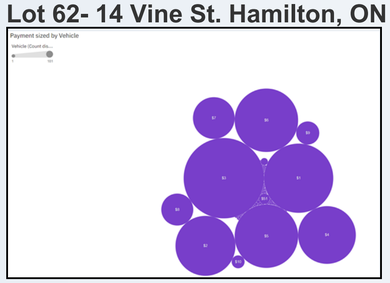
In 2021, there were 1864 distinct license plates that used Parking Lot 13 at 96 James Street North. The average duration for each vehicle was just over 2 hours. The average pay for 2021 was $3, the price per hour is $3 an hour, where the Stay All Day price was still $12. In 2021, 141 distinct vehicles stayed between 60 and 80 minutes. The most popular durations were between 60 and 120 minutes.

Lot 69- 12 York Blvd. Hamilton, ON

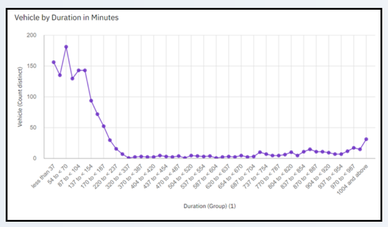


This graph shows the amount paid by day in 2021 at lot 69 by entry date with an average of $8.328 for the stay.

Lot 62- 14 Vine St. Hamilton, ON



In 2021, the most paid rate was $3 (the current hourly rate). The second most paid rate was $1 (paying for ~ 30 minutes of parking). The third most paid rates were $5 (paying for ~ 1 hour and 40 minutes of parking) and $6 (for 2 hours of parking).



In 2021, 986 vehicles parked in lot 62. Of that 986, 181 stayed between 54 and 70 minutes, 102 of that stayed 60 minutes (being the most popular duration time).

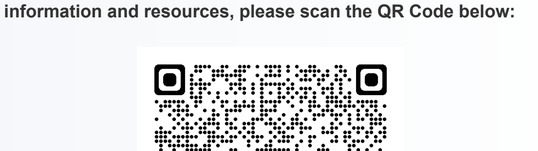
Conclusion

- After analyzing the data, it shows that the needs for parking around Jackson Square will be increasing due to the fact that Covid-19 vaccination rates are getting higher, shops are opening and employees head back to work. The data shows that pay rate has changed in some lots which may affects the usage of these parking spots.
- There was a huge jump in the number of vehicles that made use of the parking lot nearby Jackson Square, specifically Lot 69 on York Boulevard increased from 130 vehicles in 2020 to a total of 417.
- Whilst there was no significant change in the parking fee for lot 69, user behavior indicated a preference for longer parking hours in 2021 compared to 2022.
- Lot 76 on Catherine St had a jump in the pay rate from $1 per hour in 2020 to $3 per hour. Also, the stay all day rate increased from $6 to $12 for stay all day from 9:00 AM till 2:00AM for lots 76 and 62 on Vine St.
- Lot 76 had a jump in the vehicle flow in 2021 which tripled from 2020. Moreover, the payment in 2021 was 6 times than the payment in 2020.
- Lot 62's revenue increased from $6,350.93 in 2020 to $18,280.32 from July to December 2021 despite vehicles staying for shorter periods of time.
- In Lot 13 on James St N, the number of distinct vehicles doubled between 2020 and 2021.
- The average duration on lot 13 increased by 50%.

LotNumber	LotAddress	Amount Per Day	Year
76	76 Catherine Street West	$12	2021
76	76 Catherine Street West	$6	2020

50%

LotNumber	LotAddress	Amount Per Hour	Year
76	76 Catherine Street West	$3	2021
76	76 Catherine Street West	$1	2020



Recommendations

After analyzing the data and deriving conclusions out the analysis, the team has some recommendation for the parking lots:

- Different rate for Pay All Day to $15 in Parking Lot 13 to accommodate lost revenue and inflation as the most popular duration is 3 hours.
- As Covid-19 wanes with more people working from home and shift to e-commerce, Hamilton municipal parking may consider repurposing parking lots into communal spaces which may still be able to produce revenue such as: public gardens, art spaces, or food truck parking.
- Incentivize free parking spaces with electrical vehicle charging stations, where it is free parking for up to 2 hours. Also, there would be a charge the hourly rate to the maximum rate if vehicles staying any longer.
- Decrease Stay all Day parking rate time from 17 hours to 12 hours.
- Allow up to 30 minutes of free parking past 5PM for delivery drivers to utilize.
- Have cheaper rates for municipal parking lots nearby Jackson Square to reduce congestion in Jackson Square's underground parking and increase walking for Jackson Square users.
- Encourage more people to use the Passport Parking app
- Collect more data for parking analysis.

References

For all information and resources, please scan the QR Code below: