End of Season report to City of Ottawa
Dec 2021 (date range beginning to 30th Nov)

User Profile:

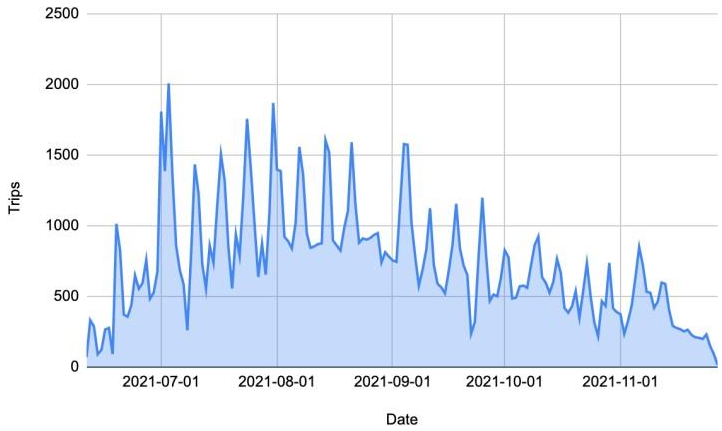
Neuron does not collect this information due to privacy reasons. As part of our mid year end survey, we do provide our riders an opportunity to anonymously self-report this type of demographic information.

As per the survey, majority of the riders were under the age of 43 years old with the maximum being under the 25-34 year range.

E-scooter Availability and Utilization

Neuron launched operation for the first time in Ottawa in June 2021. Even with being a new operator in Ottawa we saw good demand in the first 2 months of full operations. During this period, ridership was primarily driven by favourable weather conditions and higher availability of our fleet as we ramped up our operations. In other words, demand consistently increased along with supply.

We started seeing a dip in our ride numbers only with the introduction of our worlds first, AVAS technology. This enabled the scooter to emit sound when on a trip. Neuron was the only operator to pilot this feature across Ottawa. We started the pilot in August. By November we had more than 100 scooters with this sound technology.

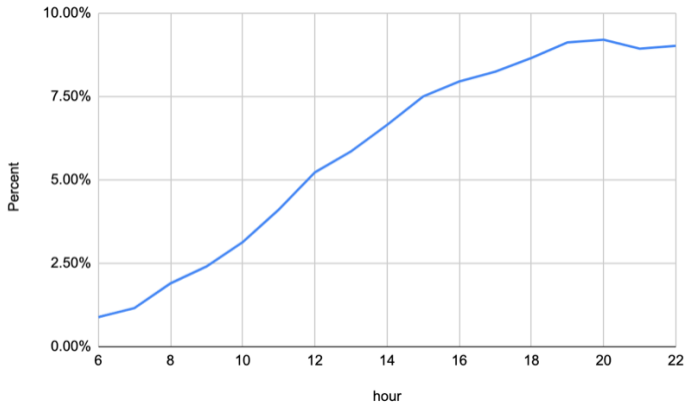


We also observed a reduction in ridership through October and November as temperatures dropped.

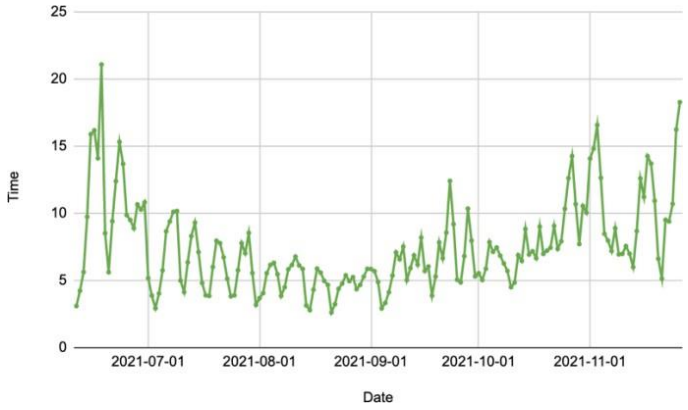
Parking & Ridership

On an average we saw close to 2 trips per deployed scooter per day. Additionally, there were more than 32000 users who took at least 1 trip since the beginning.

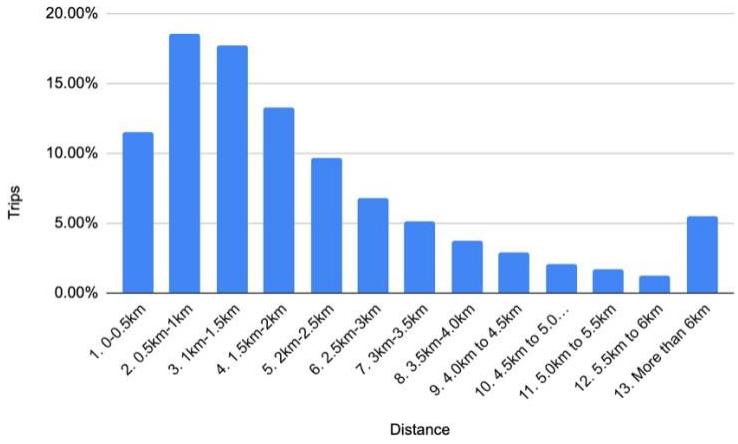
We saw that most of the rides would happen in the evening and the night. Maximum number of trips happened post 6 pm in the evening .



Average Walk-time: 5.37 mins
Note: We don't track find query, we use reserve as proxy and only for those who turn on GPS. So we use another proxy: walk time from reservation to start time for all successful reservations. This would not necessarily include only walking time.

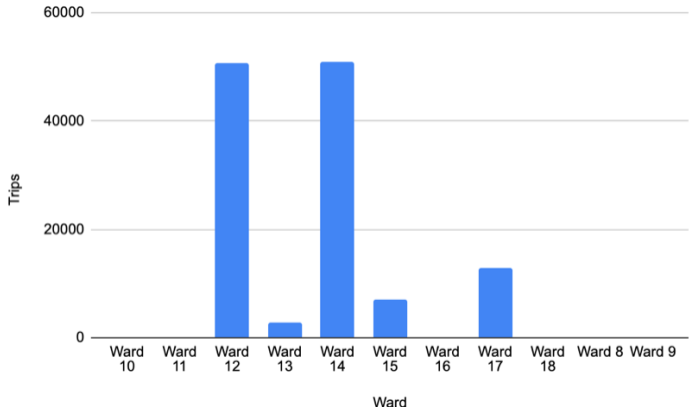


The average trip Distance was 2.2 km per ride. Most of the rides were between 0-2.5 km.

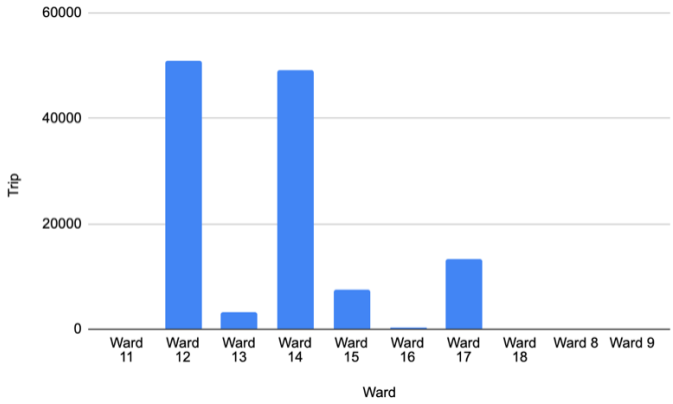


Trip origins and destinations

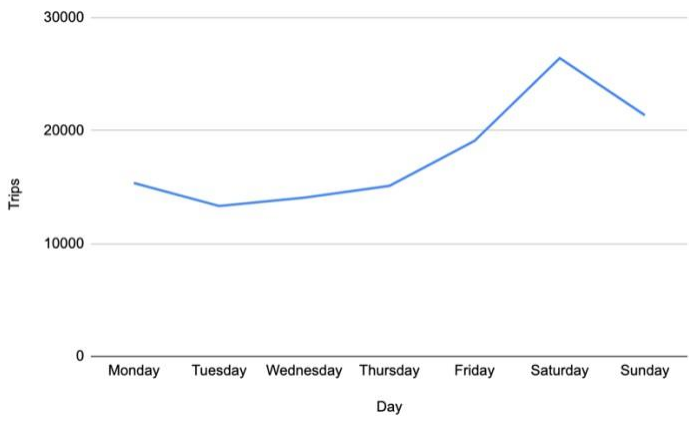
Trip starts by wards



Trip ends by wards



We saw rides on Friday, Saturday, and Sundays being much higher than on weekdays. Saturdays were the best day followed by Sunday and then Friday. But the demand on weekdays was also consistently higher.



Total trips for the season was close to 125000

Parking

Mis-parked e-scooter reports have dropped below 0.85% of all trips that occurred during peak summer operations

Neuron has the ‘most frictionless’ and ‘no-app’ e-scooter reporting system, with QR inquiries accounting for 70% of parking issues reported

Neuron remains the only voice assisted e-scooter that provides audio contact information when e-scooter is interacted with.

Reported Incidents

We have had 12 incidents of thefts and 8 incidents of vandalised scooters. This is below or on par with some of the other cities we operate in globally.

Education & Outreach

We conducted 9 scootsafe events. This is where our safety ambassadors would setup a tent for the entire day and interact with the public. We would also conduct safety quizzes and provide helmets.

Our major messaging and education during this time was around sidewalk riding and parking correctly.

Efforts undertaken to encourage safe parking in 2021 include:

- Rider education: #ScootSafe street pop-ups; Safety Ambassador intervention; direct rider communication (in-app, email); riding rules affixed to e-scooters
- Rider incentivization for appropriate parking
- Audio reminder when a ride is completed to park appropriately
- Optimizing riding areas with 'no-parking zones' to ensure sidewalks remain unobstructed on an ongoing basis

Through the 2021 operating season, Neuron has optimized Ottawa geofences and introduced 'no sidewalk riding' programs:

- 'No Sidewalk Riding' deckle placed on all e-scooters
- Rider education: #ScootSafe street pop-ups; Safety Ambassador intervention; direct rider communication (in-app, email), riding rules affixed to e-scooters
- Geofences put in place to prevent and discourage sidewalk riding
- Rider suspensions and bans for sidewalk riding

Supporting local businesses and economic recovery

- 79% of Neuron's Ottawa riders use e-scooters to visit restaurants, cafes, and explore the city
- 67% made a purchase on their most recent trip

Reducing car journeys, congestion and emissions

- 47% of all Neuron trips in Ottawa replaced car journeys - helping to avoid an estimated 20,168 kg CO2e in the city this riding season

Embraced by the community

- Neuron riders have travelled over 260,000 km in the city this season
- 82% believe e-scooters have had a positive impact on the community

Extending transportation options

- In addition to recreational uses, over one third (36%) of Neuron riders are using e-scooters to commute, while 41% are using them to shop and do errands

We have made several product/technological enhancements during the season:

- Acoustic vehicle alerting system (AVAS) - we were the only operators in the pilot to trial the sound that a scooter would make to ensure pedestrians hear the scooter and would be alerted to its presence. We piloted 100 scooters with the AVAS sound. This project was started in Aug 2021.
- HALT scooters - in line with the commitment in the RFP, we piloted 300 scooters with our HALT technology which increased the accuracy of the scooters and ensured that riders would not be able to ride on sidewalks. We have geofenced a lot of the sidewalks in Ottawa on the busy streets.
- Topple Detection - Neuron launched the topple detection feature where users are not allowed to end their rides unless the scooter is in an upright position. Additionally, in case a scooter toppled over while parked our ground team would be alerted and would fix the issue.
- No sidewalk riding stickers - Neuron has also ensured that all scooters have a large No sidewalk riding stickers
- Braille Stickers - Neuron ensured at all scooters have a stickers with company name and contact information in Braille grade 1

Appendix:

Availability

	0-5	`6-11	`12-17	`17-23
2021-06-07	61	76	85	93
2021-06-14	267	279	290	301
2021-06-21	460	459	459	458
2021-06-28	442	448	447	440
2021-07-05	453	456	454	452
2021-07-12	449	450	450	448
2021-07-19	439	441	441	436
2021-07-26	443	447	448	444
2021-08-02	435	442	439	434
2021-08-09	434	446	442	437
2021-08-16	442	450	447	444
2021-08-23	439	451	449	445
2021-08-30	447	450	447	442
2021-09-06	436	448	444	442
2021-09-13	452	454	450	450
2021-09-20	449	448	444	444
2021-09-27	411	412	406	399
2021-10-04	405	406	406	402
2021-10-11	406	406	407	405
2021-10-18	406	404	399	404
2021-10-25	408	408	407	404
2021-11-01	392	390	385	382
2021-11-08	287	288	284	278
2021-11-15	214	211	209	201
2021-11-22	108	102	95	89

Appendix - Pilot Paper on the sound emitting Technology

AVAS (Acoustic Vehicle Alerting System) Project – Ottawa

The intent of the AVAS project was to emit a constant sound from the e-scooter that would alert pedestrians of the e-scooter.

Neuron was the first and only operator in Ottawa to pilot, in August 2021, the AVAS sound i.e. a constant sound emitted from the scooter to alert pedestrian.

The team at Neuron took the lead on this initiative and ran 3 different pilots from Aug to Nov 2021. This was in consultation with the City of Ottawa and the accessibility stakeholder group. The thought was to ideate and consult as a group together to try different sounds and the reaction the rider and pedestrians had to these sounds. At multiple times Neuron met with and demonstrated the sound technology along with the City of Ottawa and the accessibility stakeholder group to get feedback and share results of the pilot.

Phase wise approach

Pilot 1 started in Aug 2021 with Neuron sharing 6 sounds with the accessibility stakeholder group and based on the feedback narrowed it down to 1 sound, the low pitched beeping at a 3 second interval. The sound was agreed upon only after a live demonstration of 3 different sounds and discussion with the stakeholder group.
We started with a restricted area in Little Italy (Preston Street) and a fleet size of 30 scooters. Operationally we had to deploy additional staff to ensure that all 30 scooters with the sound were rebalanced to Preston street multiple times a day.
The first pilot was run for 7-10 days post which Neuron rolled out 3 different surveys:
Pedestrians: Neuron surveyed residents, workers, business owners in the area to get feedback on the sound, what they feel about it, was it audible etc.
Accessibility Groups: The stakeholder groups were encouraged to see the scooters in action and provide feedback of the sounds.
Rider Survey : Understand the riders perspective and get feedback from the users on the sound, what they felt about it, was it audible etc.

There were 2 feedbacks that we received from the stakeholder group, the beeping sound that was initially selected was like the APS sound in Ottawa and needed to be changed. Since only Preston Street was selected for the trial, the opportunity to hear the sound was limited and the pilot area needed to be expanded. The riders didn't like the sound and we started to see a drop in the ride numbers and a drop in the trip ratings for scooters with the AVAS sound.

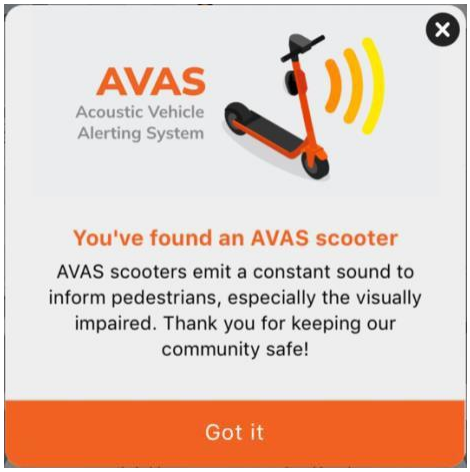
Pilot 2 started in Oct and the sound was changed to a bell sound at a 2 second interval. Again, this sound was agreed upon only after a live demonstration and discussion with the stakeholder group. This number of scooters in this phase was increased to 70 scooters and the area was expanded to the Glebe, which is everything south of the 417 to Sunnyside Avenue from Rochester Street to the corner of Hawthorne/queen Elizabeth parkway.

Once again the riders were incentivized to provide feedback and once again they didn't like the bell sound. We again saw a drop in the number of trips and a drop in the trip ratings.

It was then decided to inform the riders at the start of the trip that the scooter they had chosen was an AVAS scooter and the reason for the AVAS sound.

Pilot 3 was started in Nov with 100 scooters which was more than 35% of the Neuron fleet size at that time. In this phase the sound remained the same i.e. the bell at a 2 second interval and the pilot area was expanded to include the whole city.

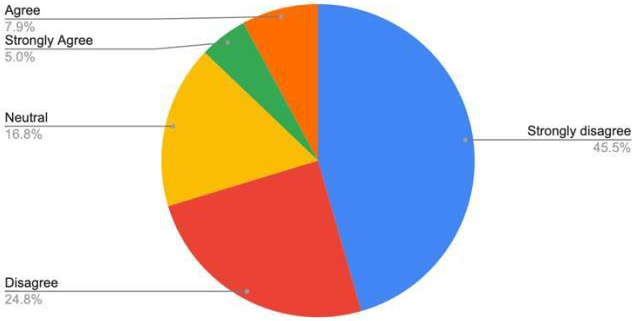
In this phase Neuron implemented a popup at the start of the trip, "You've found and AVAS scooter" popup to let users know that the scooter will emit a sound and that the sound is to inform the pedestrians around the scooter. The trial's purpose was to get insight on whether informing users before the trip will change their perception of the sound during the trip.



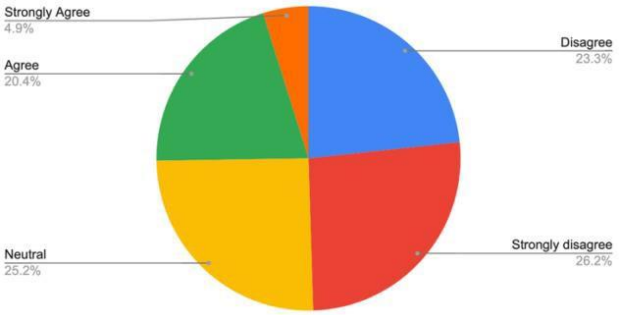
Survey Results (Pilot 3)

When you were riding the scooter, what did you think the noise…

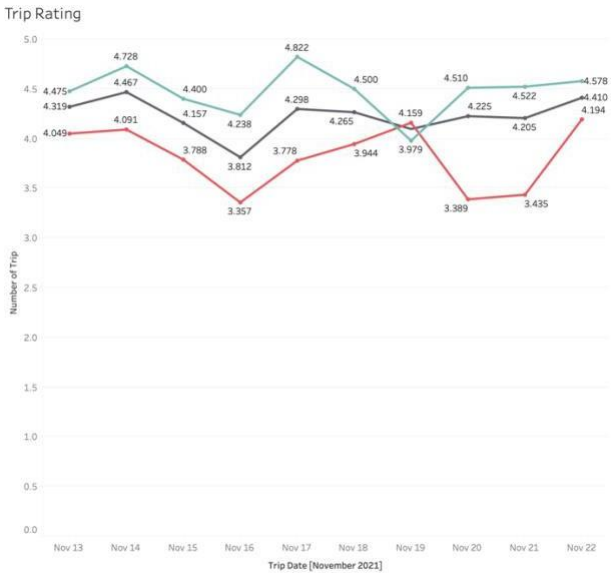
To what extent do you agree/disagree? [As a rider, I liked the experience with the ambient noise]



To what extent do you agree/disagree? [The ambient noise was indeed working well to enhance the safety for pedestrians]



The average trip rating for scooters with the AVAS sound is depicted in RED and the trip rating for the scooters without the AVAS sound is depicted in BLACK. We see a clear drop in the ratings in the AVAS scooters vs a NON AVAS scooter.



The trip ratings for our New HALT technology is depicted in GREEN. The HALT technology has better sidewalk detection and location technology that reduces GPS drift and hence makes for a better ride.

Conclusion and recommendation

The survey data suggests that a large number of riders appreciate and recognize the reason for the AVAS sound.

The ratings for the AVAS scooters could be low due to multiple reasons but the one that stands out is that only 100 scooters had the sound, and that the user had an option to take a NON AVAS scooter and scooters from other operators.

This may also be one of the reasons why we see a decrease in rides over the pilot period on AVAS scooters.

For next year Neuron recommends the following:

- More innovation and testing will be need to be done on the right sound, constant sound vs chirp/beep/bell etc.
  Some comments from the rider survey:
  - "I understand it's for safety, but I think all riders should know how and when to use a bell, same rules apply for bicycle"
  - "awful! if every ride I took had the scooter's bell ringing constantly like the ride I just had, I would not ride with neuron again. If it was a subtle ambient noise it would be ok, but this scooter's bell was ringing continuously."

- Industry wide consolidated effort and testing required - All Operators to have the same sound across the entire fleet. This will help in understanding the actual impact of the AVAS sound on the trip ratings and trip numbers, this year riders had an option to switch to other operators and other non AVAS scooters.

- Use of technology to make overall experience better, different sound levels at different time of the day and at different locations in the city. There may not be a need to have a sound play at a high volume at 6am on a Sunday morning in a residential area.

End of Season report to City of Ottawa
Dec 2021 (date range beginning to 30th Nov)

<table>
<tr><th>Data request</th><th>Neuron Response/Notes</th><th>Supporting File</th></tr>
<tr><td>• User profiles (age, gender – if available)</td><td><table><tr><td>18-24</td><td>22.2%</td></tr><tr><td>25-34</td><td>36.8%</td></tr><tr><td>35-43</td><td>15.4%</td></tr><tr><td>44-54</td><td>13.7%</td></tr><tr><td>55-64</td><td>9.4%</td></tr></table></td><td></td></tr>
<tr><td>• E-scooter availability, utilization, turnover, parking duration, and charge, by location (including specific neighbourhoods and in close proximity to transit stations)</td><td>Charge - daily (no data available)</td><td>Availability - Hourly basis - [Confidential] scooter_av... (by week by hour)

Utilization - daily (daily trips) - [Confidential] scoot...

Parking duration - daily (24-daily average trip duration) This has been defined as the time between the scooter being IN_STATION to IN_TRIP. Parking duration is recognised at the point of the scooter going from IN_STATION to IN_TRIP
[Confidential] parking_du...</td></tr>
<tr><td>• Trip origins and destinations by street segment/zone (to be specified by the City)</td><td></td><td>Link to trip origins by ward - [Confidential] trip_starts_...

Link to trip destinations by ward - [Confidential] trip_ends_by_wa...</td></tr>
<tr><td>• Distance travelled from the initial e-scooter “find query” to the e-scooter (if available)</td><td>We don’t track find query, we use reserve as proxy and only for those who turn on gps. So we use another proxy: walk time from reservation to start time for all successful reservation:
Average 5.37 min
This would not necessarily include only walking time.</td><td></td></tr>
<tr><td>• Trip distance (average and distribution)</td><td>Average Trip Distance - 2.19km</td><td>Distribution is in the file here - [Confidential] trip_distance_di...</td></tr>
</table>

• Total trips for the reporting period	Total trips - 124733 since beginning of operations	
• Trip profile by month , day of week, time of day (total trips, trips per e-scooter)		Total trips by month - [Confidential] trip... Trips per deployed scooter by month - [Confidential] trips_per_deploy... Total trips by day of week - [Confidential] trips_by... Trips per deployed scooter by day of week - [Confidential] trips_per_deploy... Total trips by time of day - [Confidential... Trips per deployed scooter by time of day - [Confidential] trip...
• Number of unique riders for the reporting period	Users who took at least 1 trip since the beginning - 32,010	
• Number of trips per rider (average and distribution)	Average number of trips per user - 3.9 trips	Distribution is in file here - [Confidential] user_trip_cnt_di...
• Number of riders using monthly passes	Number of riders who had at least 1 trip using monthly pass - 1,103	
• Number of riders who paid on a per trip basis	Number of riders who had at least 1 non-pass trip - 31,485	
• Reported comments, complaints, and injuries	Total Incidents: 20 Verified : 6 Received Medical Attention: 6 Unverified : 14	File with details: Neuron - Se...
• Incidents of theft and vandalism	So far we have had 12 incidents of thefts and 8 incidents of vandalised scooters	
• Education and outreach activities	Number of Scootsafe events: 9	
• GHG reporting	20,168 kg CO2e avoided	