E-Scooter Safety and Carbon Information: Briefing Note

04/09/2023

Version History

Revision Number	Revision Date	Nature of Revision	Checked by	Reviewed by	Approved by

Purpose

At its pre-meeting of the Overview and Scrutiny Group, the Combined Authority Transport and Infrastructure Committee asked for e-scooter safety. This update includes data on carbon savings.

The briefing provides an overview of national and local safety information and Cambridge specific carbon saving data.

National Safety Data

In December 2022, the Department of Transport (DfT) published the National Evaluation of E-scooter Trial Findings Report. It includes data collected between July 2020 to December 2021 and focuses on the e-scooter trial areas.

At a national level, 14.5 million trips were made between July 2020 until the end of December 2021. Over the period, an average e-scooter trial trip length was 2.2km and took 14 minutes.

The national evaluation noted that 5 percent of e-scooter users had experienced a collision in the previous 12 months. Less experienced users reported the majority of collisions, for the most part these did not involve other road users with the main contributing factor reported by users being rider error. The evaluation highlighted that with more experience and training, particularly for new users, could help improve rental e-scooter safety.

The National Evaluation of E-scooter Trial Findings report can be found here, National evaluation of e-scooter trials (publishing.service.gov.uk).

More recently, the DfT published on 24 May 2023, 'Reported road casualties Great Britain: e-scooter factsheet 2022.' The factsheet examines the main trends in collisions involving e-scooters and the casualties involved, collected in STATS19 reportable incidents. This data is provisional and final figures are expected in the Autumn of 2023.

The provisional data is for 2022, as supplied by police forces up to 5 May 2023 – some police forces were unable to supply data or complete data. E-scooter is not one of the designated vehicle types collected in a STATS19 reportable collisions, as such they would be classed as other vehicle and can only be identified using a free text box.

The factsheet covers both rental and privately owned e-scooters and can be found by following the link, Reported road casualties Great Britain: e-Scooter factsheet 2022 - GOV.UK (www.gov.uk)

Key points highlighted by the factsheet are,
- There were 1,369 collisions involving e-scooters, compared to 1,352 in 2021.
- Of all collisions involving e-scooters, 342 included only one e-scooter with no other vehicles involved in the collision (single vehicle collision), compared to 324 in 2021.
- there were 1,458 casualties in collisions involving e-scooters, compared to 1,434 in 2021.
- of all casualties in collisions involving e-scooters, 1,117 were e-scooter users, compared to 1,102 in 2021.

- there were 12 killed in collisions involving e-scooters (11 of whom were e-scooter riders) compared to 10 in 2021.
- our best estimate, after adjusting for changes in reporting by police, is that there were 421 seriously injured and 1,025 slightly injured in collisions involving e-scooters, this compares to 418 and 1,006 respectively in 2021.
- Excluding e-scooter casualties themselves the main types of other road users involved in collisions involving e-scooters are pedestrians and cyclists.
- The three most common type of injuries sustained in collisions involving e-scooters (to the e-scooter users or others) are all of slight severity.

Cambridge Safety Data

As part of the e-scooter trial, and in line with DfT legislation, Voi captures and reports on accident data to the CPCA and to the DfT monthly. Voi captures these incidents through three main channels:

1. In-app incident reporting, used primarily for users
2. Through their customer service/support channel, allowing observers of an accident to make a report even if they are a user
3. Proactively through customer outreach for anyone leaving a negative review (i.e. if a user leaves a negative review at the end of their ride, Voi's customer service team reaches out proactively to ask if they are OK or if they had an accident. This goes above and beyond expectations of DfT legislation.)

Through the ease of reporting and the numerous reporting channels, Voi captures a large amount of data in relation to incidents, likely more than any other mode of transport (e.g., private bicycles would not have this, and due to no claims implications, drivers are not encouraged to report minor issues when driving).

To date, there have been 77 reported serious incidents in Cambridge, across 2.3 million journeys, meaning 1 in every 30,000 trips has been reported to have a serious incident in line with DfT definitions, and a median of 16 serious injuries per 1 million km travelled. Comparing this to local or national cycling data is very difficult, due to the differences in reporting channels as referenced above, likely leading to an underreporting of other travel modes. There is no discernible difference between accident rates reported on Voi's e-bikes or e-scooters in Cambridge.

It should be noted that there is a number of safety measures in operation within the Cambridge trial,
- Online safety test;
- Online safety school;
- In person safety events that include free helmet promotions;
- The app has a reaction test to mitigate intoxicated use;
- Helmet selfie which awards loyalty points for wearing a helmet; and
- Users can opt to reduce the speed from 12.5mph to 9mph.

Cambridge Trial Carbon Data

To date in Cambridge, there have been 2.3 million rides on Voi's e-scooters and e-bikes. Voi runs bi-annual (summer and winter) surveys where it asks users in Cambridgeshire what mode of transportation they would have taken if they did not take an e-bike or e-scooter on their last trip and uses this to inform modal shift statistics. The summary of this shows that 33% of trips would have been taken by private or rental car (taxi or car share) instead, and 10% of trips replacing bus services.

Voi worked with Dr Manos Chaniotakis (Lecturer in Transport Modelling and Machine Learning at University College London), to understand what this is equivalent to in terms of carbon saving. Summary below:

- CO_2e reduction in tonnes: 350
- Air quality PM2.5 reduction in kg: 70
- Car trips replaced: 825,000

Table for Comparison:

Equivalencies		Comparison	source
1 tonne CO_2	0.22	Car driven for one year	EPA
1 tonne CO_2	427.75	litres of gasoline burned	EPA
1 tonne CO_2	501	kg of coal burned	EPA
1 tonne CO_2	0.5	CO2 budget per capita	Ecochain /Greenpeace
1 tonne CO_2	185	steaks	Ecochain
1 tonne CO_2	121,643	smartphone charges	EPA