

## E-cargo bicycles: on cycle path of carriageway?

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### 1 INTRODUCTION

To ensure that e-cargo bicycles and other light electric vehicles are technically safe and used safely, an Approval Framework for Light Electric Vehicles (LEV framework) is being developed in The Netherlands. The LEV Framework also governs the place on the road of LEVs. Sessions with road authorities in the preparation of the LEV framework in 2020 showed that some road authorities were concerned about heavy e-cargo bicycles on bicycle paths because of their size and the mass difference with cyclists [1]. For this reason, it was investigated what the most suitable traffic rules are for the place on the road of heavy e-cargo bicycles for transporting goods or children with a maximum construction speed of 25 km/h: the cycle path, the carriageway or, depending on the traffic situation, a tailor-made solution in between.

### 2 APPROACH

This abstract is based on Rijkswaterstaat's Background Report Place on the Road of the electric cargo bike [2]. This report describes options for legally regulating the place on the road, contains statistics on the width of bicycle paths in the Netherlands and literature to determine the social effects of the options. The report also discusses, for example, the relationship with EU Regulation 168/2013. Under the supervision of the TRIDÉE research agency, the options were discussed in working sessions with knowledge institutions, enforcers, road authorities, courier companies and social organizations.

### 3 OPTIONS PLACE ON THE ROAD

In this study, options are compared with the zero option, in which the cycle path remains the starting point for the place of the heavy e-cargo bike on the road. Other options restrict the ability to use cycle paths and require the use of the carriageway. It is estimated that when the LEV Framework comes into effect, there will be approximately 10,000 heavy e-cargo bicycles.

The following options for the place on the road are considered:

- Heavy e-cargo bike follows the rules for cyclists (zero option)
- Heavy e-cargo bikes with greater mass mandatory on the carriageway
- Heavy e-cargo bikes with greater width mandatory on the carriageway
- Customization at the municipal level linked to slow mopeds on the carriageway: existing option in The Netherlands whereby municipalities can require 25 km/h mopeds, and in this option also e-cargo bikes, to travel on the carriageway
- Heavy e-cargo bikes mandatory on the carriageway when it has a speed limit of 30 km/h
- Advisory bicycle path at 30 km/h

## 4 CONCLUSIONS

The main conclusions of the study are:

- The most important preconditions for traffic rules are that they are understandable for all road users and enforceable. These preconditions come under pressure when heavy e-cargo bicycles are no longer allowed on the cycle path, because the number of heavy e-cargo bicycles is still small (approximately 10,000 vehicles in 2022 [3]) and they are visually difficult to distinguish from light e-cargo bicycles that must stay on the cycle path..
- Safe use is an important motivation for the LEV framework. Overall, the heavy e-cargo bike on the cycle path is the most favourable for road safety. At speeds of up to approx. 30 km/h, vehicles with large differences in mass can be safely mixed. With speeds of up to 25 km/h for the e-cargo bike, the speed difference with motorized traffic on a 50 km/h carriageway is too great while the speed on the cycle paths will remain under 30 km/h.
- On 30 km/h roads with separate cycle paths where the limit is properly observed, the heavy e-cargo bike could travel safely on the roadway. As indicated in the first conclusion, this would not be understandable and enforceable. Moreover, the length of 30 km/h roads with separate cycle paths is small and it appears that the limit is frequently exceeded on these roads.

## DISCUSSION

Understandability and enforceability of traffic rules are preconditions and necessary to achieve the intended effect. Given the aim of the LEV Framework to enable safe use, road safety is a crucial aspect for assessing rules. The work sessions showed that road authorities and social organizations consider the cycling climate important. The cycling climate benefits from keeping large and heavy vehicles such as e-cargo bikes off the cycle path. On the other hand, environmentally friendly transport with, among other things, LEVs is valued by stakeholders, of which the use is most stimulated by allowing the use of bicycle paths. With these considerations, it was decided to formulate the main conclusions on comprehensibility, enforceability and road safety.

As yet, little empirical research on the effects of place on the road of the e-cargo bike is available. Monitoring of the LEV framework is planned and can help build knowledge.

## REFERENCES

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