

Applying the AcciMap approach to a fatal e-scooter crash: A Safe System approach to analyzing micromobility

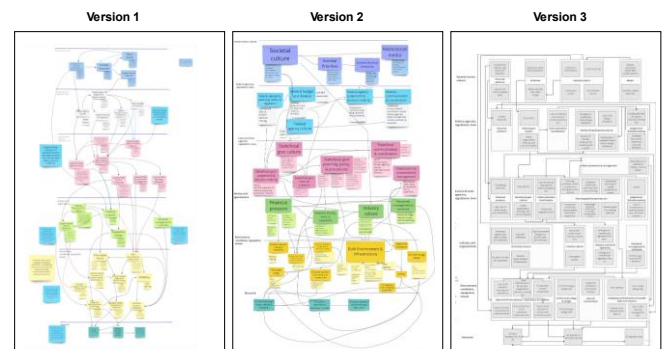
This report describes the use of an AcciMap to analyze a fatal e-scooter collision in Nashville, TN—the first time this methodology has been applied to a collision involving an e-scooter and the second time it has been applied to an event involving a micromobility device. In addition, this project demonstrates that an AcciMap can be successfully applied using public data sources commonly available to transportation safety professionals. This example of a systems thinking tool provides a set of methods to help tangibly realize a Safe System approach and inform a more holistic and systems-based understanding of crash incidents, as well as potential opportunities for intervention.

A leading benefit of applying the AcciMap methodology is that, through identifying and organizing potential causal factors according to system levels, we can understand and hypothesize about entire causal pathways, including the myriad mechanisms and decisions that resulted in an event, thereby avoid placing undue blame on the frontline actors and actions. As part of a more systemic approach to safety, potential countermeasures can be developed for all system levels.

Many previous applications of the AcciMap approach have characterized events of unusual circumstances or severity due to the large amount of data generated (crash reconstructions, interviews). While these comprehensive investigations are a rich source of data, they are uncommon and are rarely performed for more mundane, “routine” incidents, due to the resources required to perform this scale of data collection and synthesis. In the U.S., where tens of thousands of traffic fatalities occur annually, such resources are not available

for investigating most traffic collisions, even fatal ones. Therefore, we used publicly available resources (crash and media reports) as data sources for our analysis.

While we were able to complete a detailed and comprehensive AcciMap for the fatal e-scooter collision, we likely missed several factors that contributed to the crash. In addition, data gaps resulted in a considerable degree of speculation about the role of certain factors, as well as relationships between factors. Finally, the results from our AcciMap may not be generalizable to other e-scooter incidents. However, despite these limitations, the methods developed by our team provide a useful, practical framework for applying a more systemic lens to understanding incidents involving micromobility devices.



Draft stages of the AcciMap

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