

# Leveraging E -bike Sharing GPS Data to Evaluate Usage of Cycling Infrastructure

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# When do people use our bike lanes?

To quantify the value of different projects to our bike network, we need a better understanding of biker preferences.

*When do bikers use a street **without** a protected bike lane? Why?*

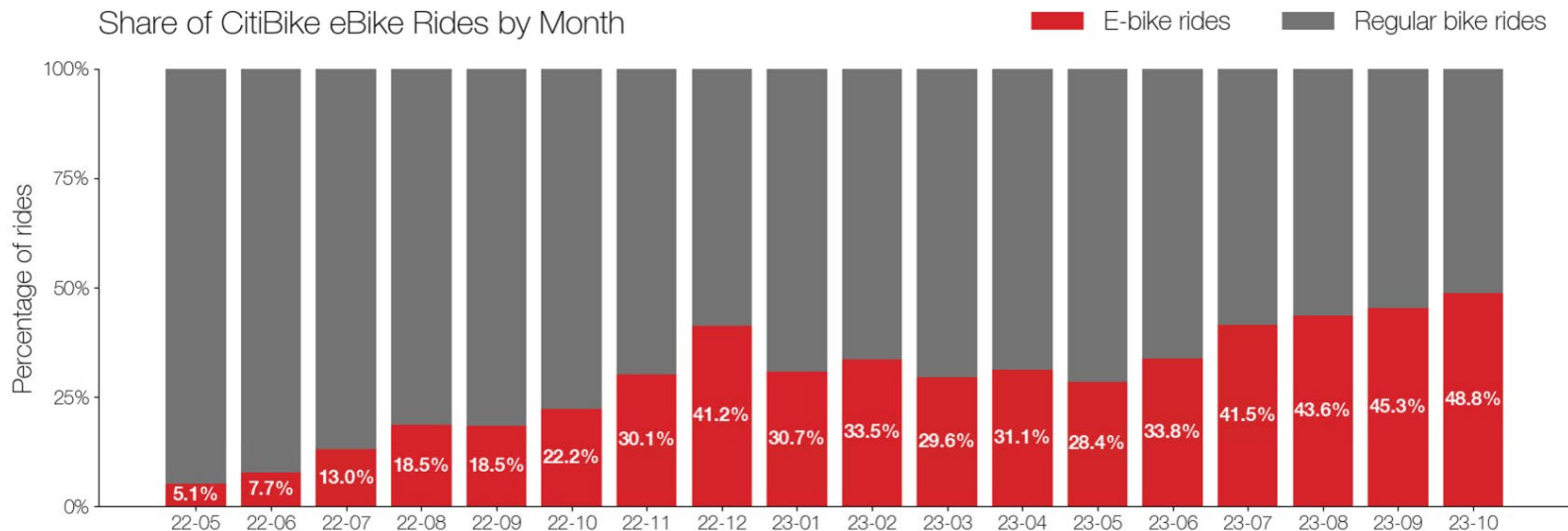
*How fast do bikers **divert** from their paths to use a new bike lane? Why?*

We would like to estimate fine-grained bike ridership (over time, street by street) and model route choices across our network.



# Our data: *CitiBike e-bike GPS traces*

We have **route** data on all CitiBike e-bike rides (~18M trips in 2022-23 period)



Growing fleet + population of interest!

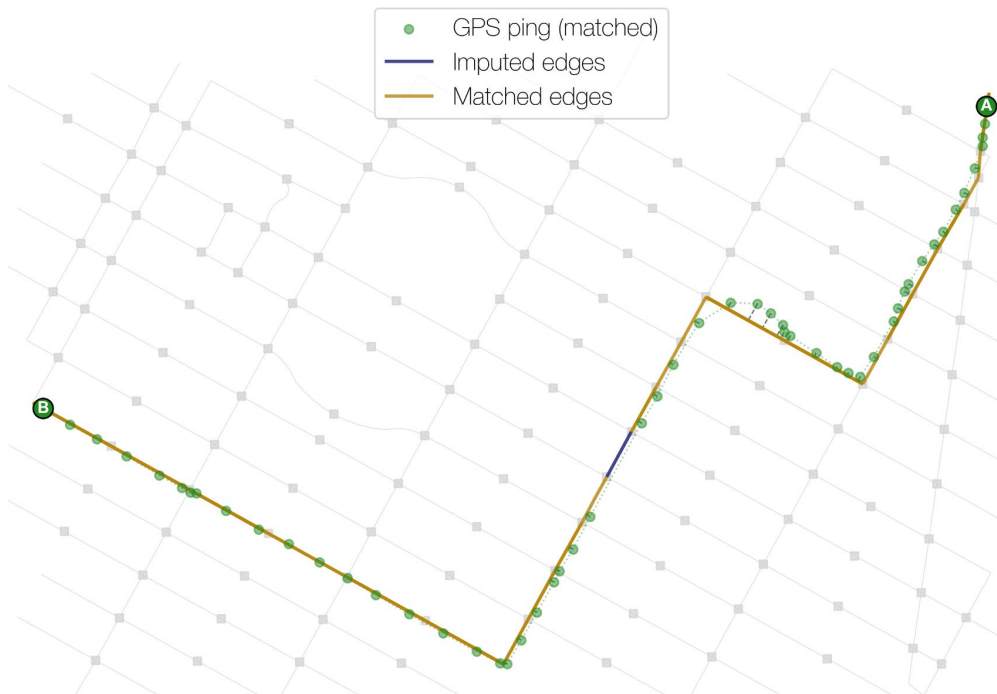
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CitiBike e-bikes have **GPS trace data**

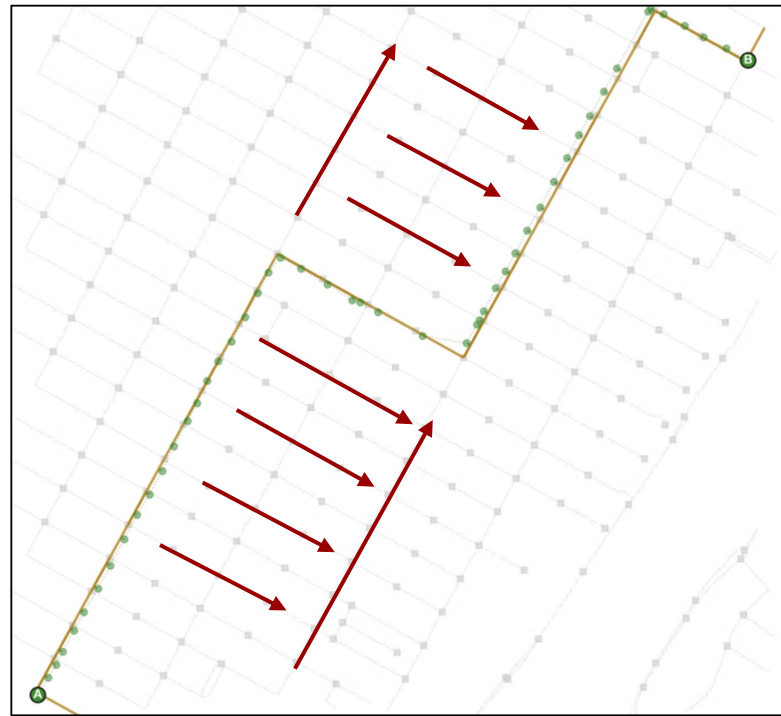
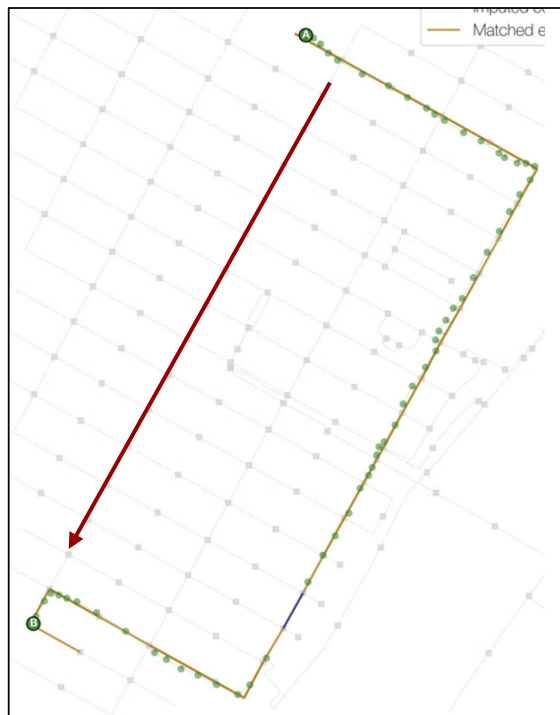
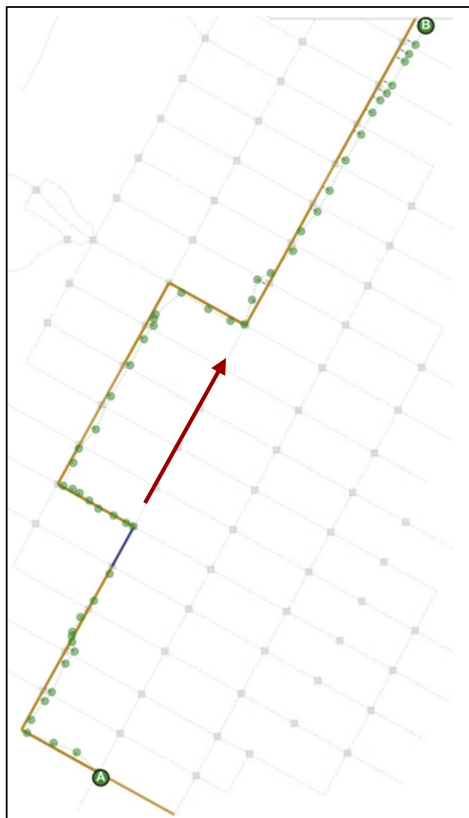
A ping roughly every 7 seconds!

We develop an algorithm to process these pings as **routes** on the network (*map-matching*)

This data reveals **preferences** for certain paths and allows for analyses beyond origin-and-destination



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Thank you!

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