BURGESS & NIPLE

Correcting the Signal

Filling in the Active Transportation Data Gap and Accounting for Bias

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BIO

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RELEVANT EXPERIENCE

- Masters from UW-Madison in Environmental Science
  - Mixed methods research predicting algal blooms
- 3 years as a research analyst in emergency management
- Past 3 years as a Data Scientist at Burgess & Niple

- Masters from Kansas State University
  - Regional and Community Planning
- 15 years transportation planning at MPOs, FHWA, and now B&N
- Portland Transportation Planning Section Director

The Situation... No Data

You are a local agency and you want to know where to put a RRFB, but you don't have pedestrian or bike user date. What do you do?

Data-Driven Decisions… In Theory

We have more data than ever – and it's still hard to use

The Expectation	The Reality
▪ More data ▪ More tools ▪ Better decisions	▪ Difficulty finding the *right* data ▪ Data introduces bias

Data-Driven in Active Transportation

Most Planning Problems

- Data overload
- Siloed systems
- Manual workflows
- Static output

Active Transportation Planning Problems

- Limited or no volume data
- No monitoring
- Inconsistent counts
- Unclear assets

Safety Analysis in Active Transportation

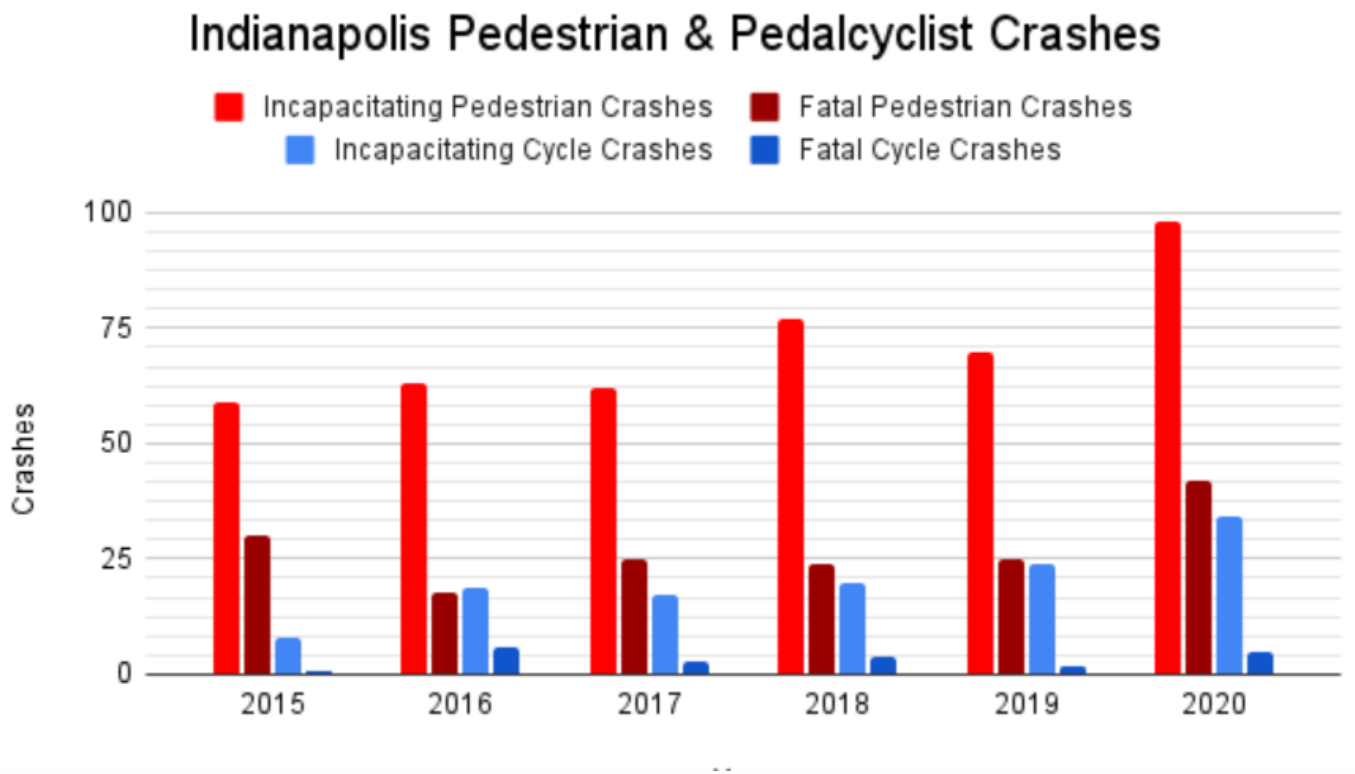
VRU Crash Data

VRU Volume Data

Case Study: Indianapolis Vision Zero

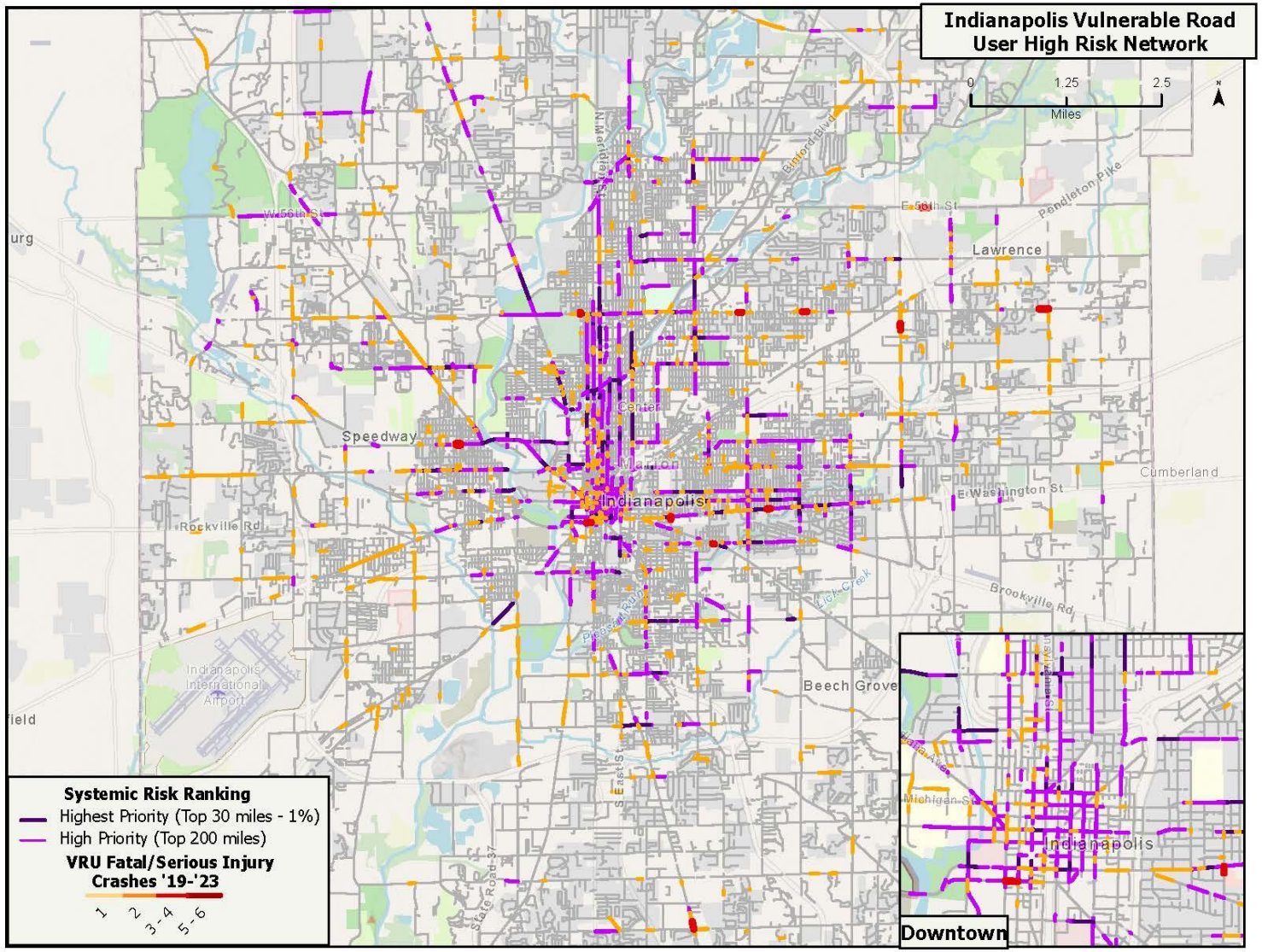
Indianapolis Vision Zero

- High Injury Network
- High Risk Network
- Equity Analysis

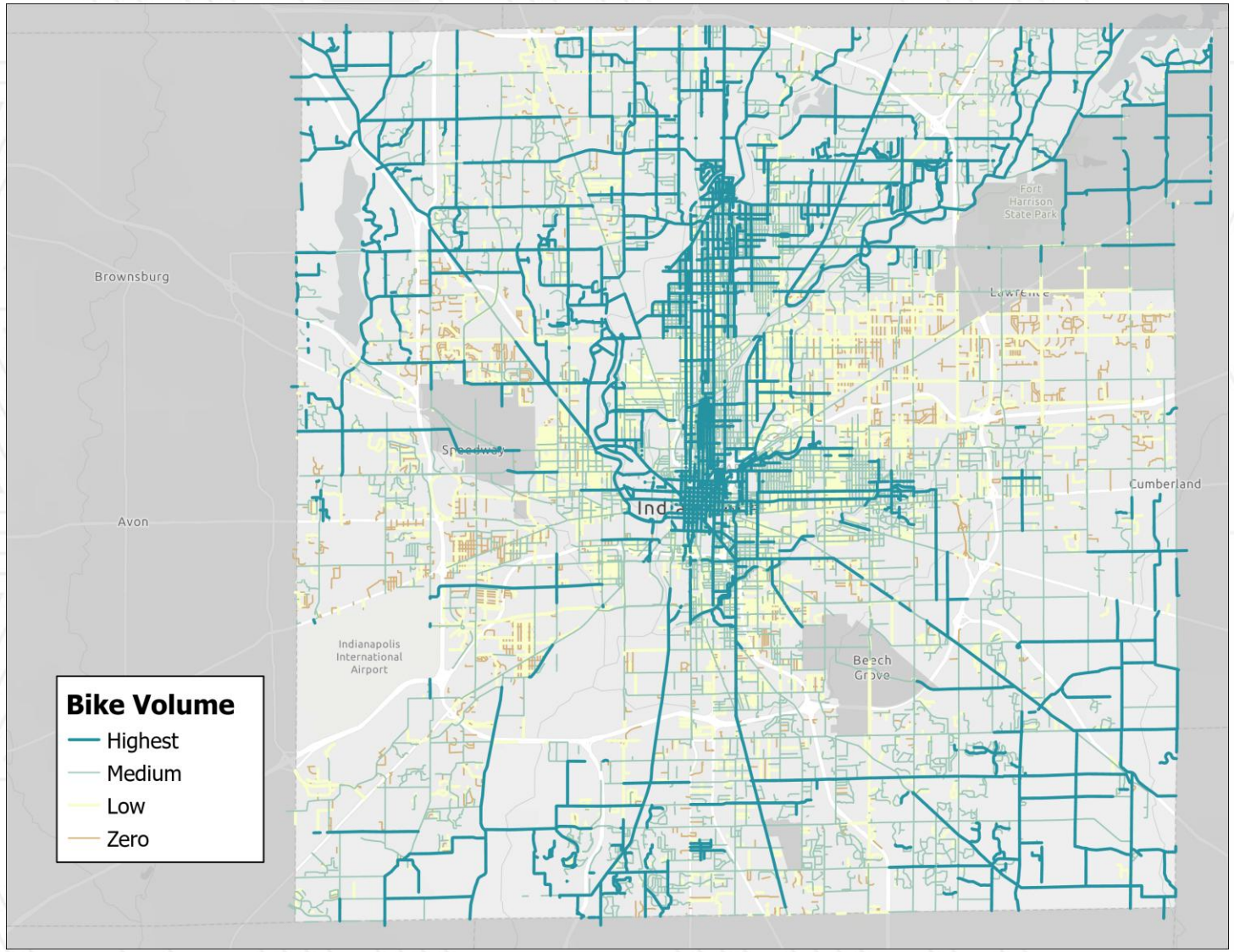


VRU High Risk Network

- Predictive analysis
  - Where are VRU-related crashes likely to occur
- Network Characteristics
  - Speed, Lanes, Functional Class
- VRU Volume/ Exposure?



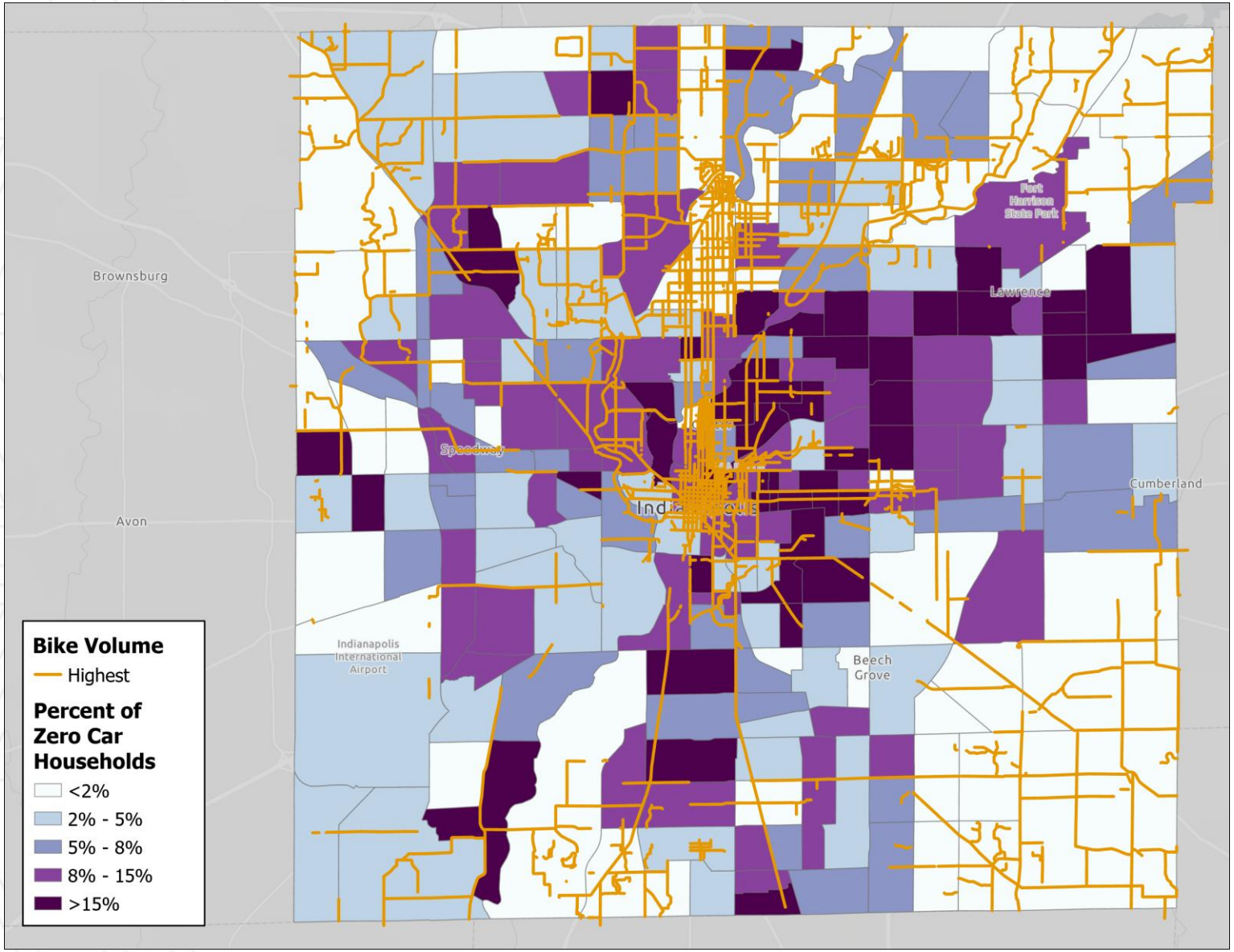
Filling the AT Data Gap



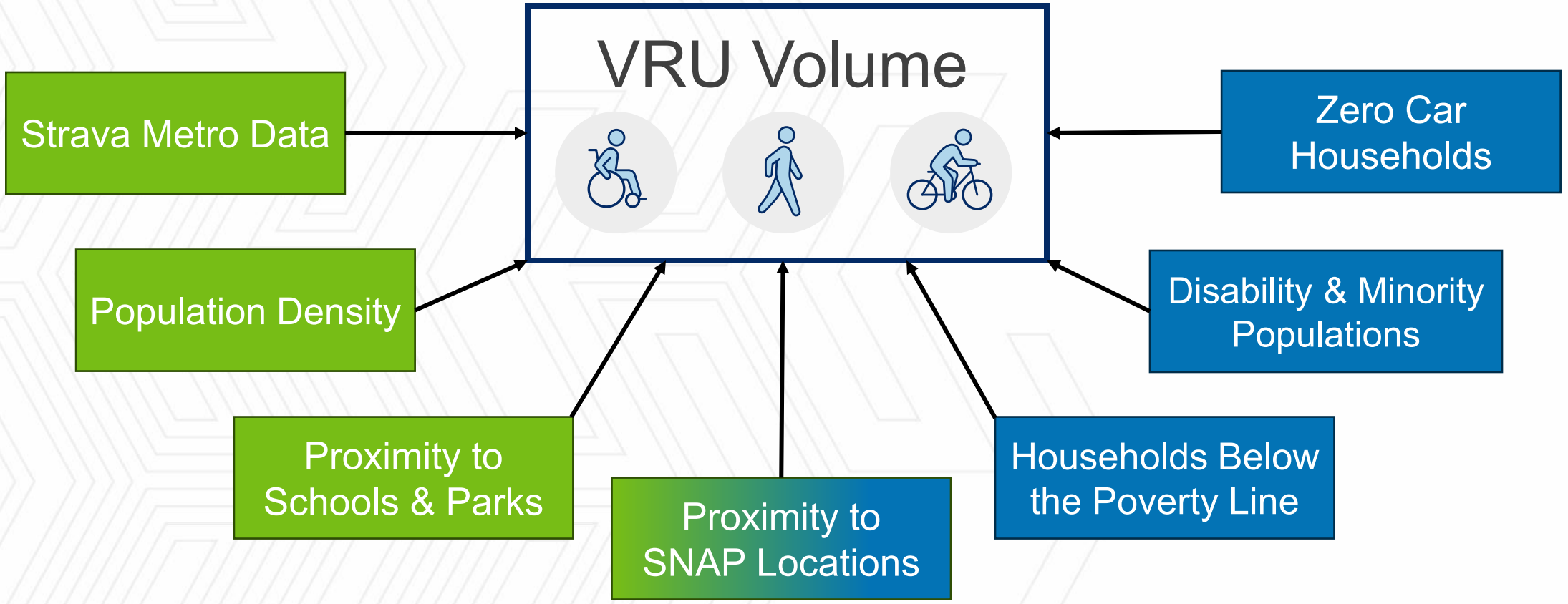
- Used Strava Metro to get Bike and Ped data
- Separated into bins
- Considerations
  - Who uses Strava?
  - What is the typical use for Strava?
  - How does this effect the data?

Bias in Strava Data

- Average Strava User
  - Higher Average Income
  - 30's – 50's
  - White
  - Men
- Typically used to track exercise
- Still shows where people are comfortable biking



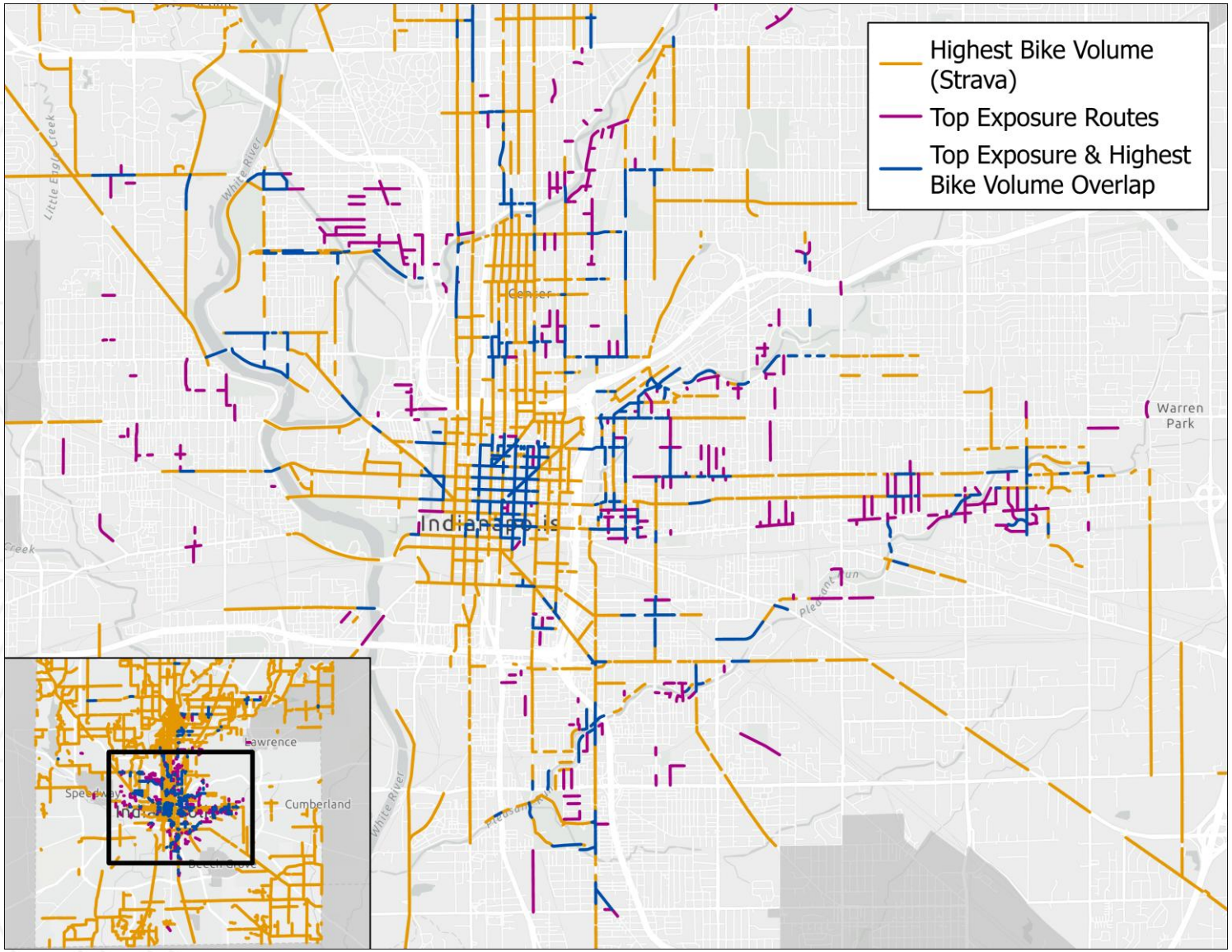
Correcting the Signal



No single dataset tells the full story, so we combine multiple signals

Correcting the Signal

- By combining all these metrics, we capture the ‘silent demand’
- Some areas line up well with the Strava high-use corridors
- Others are showing where Strava isn’t capturing the demand and need for safer AT infrastructure.



Correcting the Signal

Data Needs – Sparse data is an expectation in Active Transportation.

New Data Sources – Strava Metro volume data can help fill an important data gap.

Accounting For Bias – We know the data is biased but we can rely on other proxies to account for it.

Silent Demand – Bringing this data together allows us to extract insights and serve our communities equitably.

THANK YOU

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