Locating Where School Buses and Public Transportation Are Impacted by Congestion, Phase II

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WHY IT MATTERS

- Congestion causes delay for public transportation buses and school buses, reduces efficiency, and forces students and commuters to spend unneeded time traveling to their destinations.

- Congestion negatively impacts ridership experience due to higher bus fares, punctuality and reliability decline.

- For bus operators, decreases in operating speeds inversely increases operating costs.

- Improving the relationship between school and public buses is imperative to ensure continuation of these services
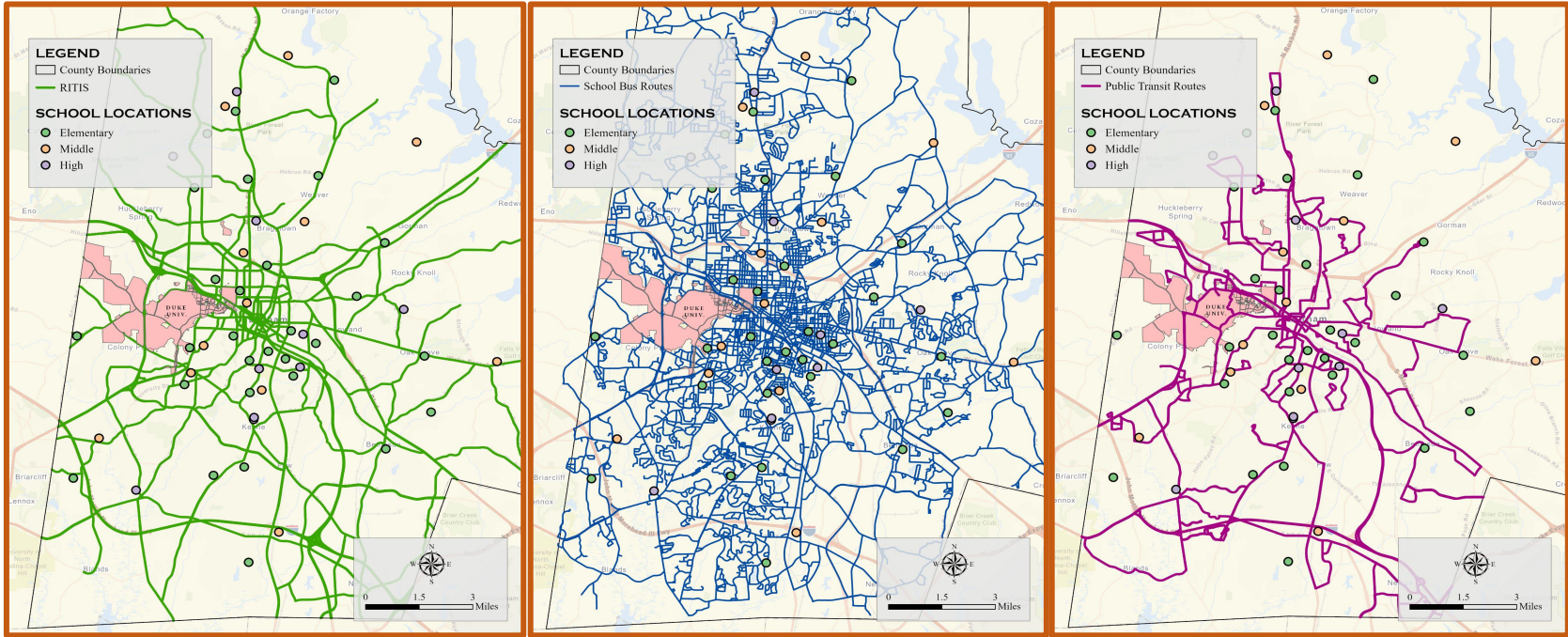

Phase I Recap

Datasets

Calculated time of delay for all transit and school buses in Durham, North Carolina.

Regional Integrated Transportation Information System
RITIS

Education Logistics Inc. Routing tool used by NC school districts
Edulog

General Transit Feed Specification; Routing public transit on Google Maps
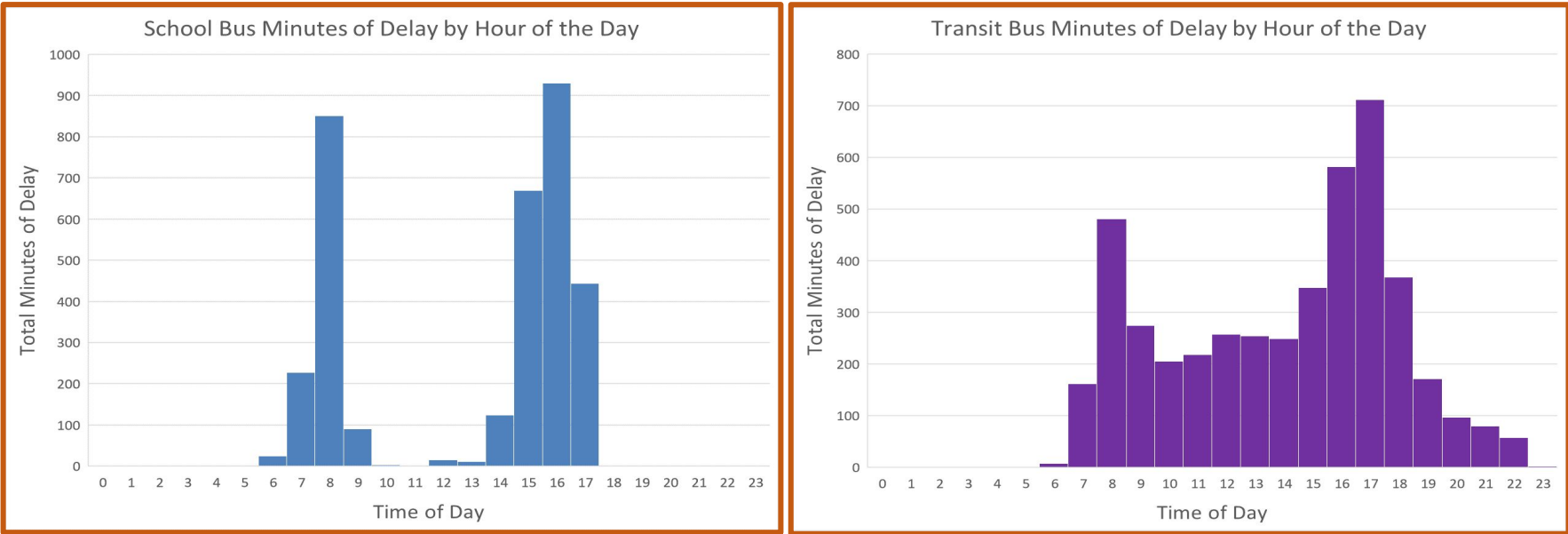GTFS

Quantitative Results
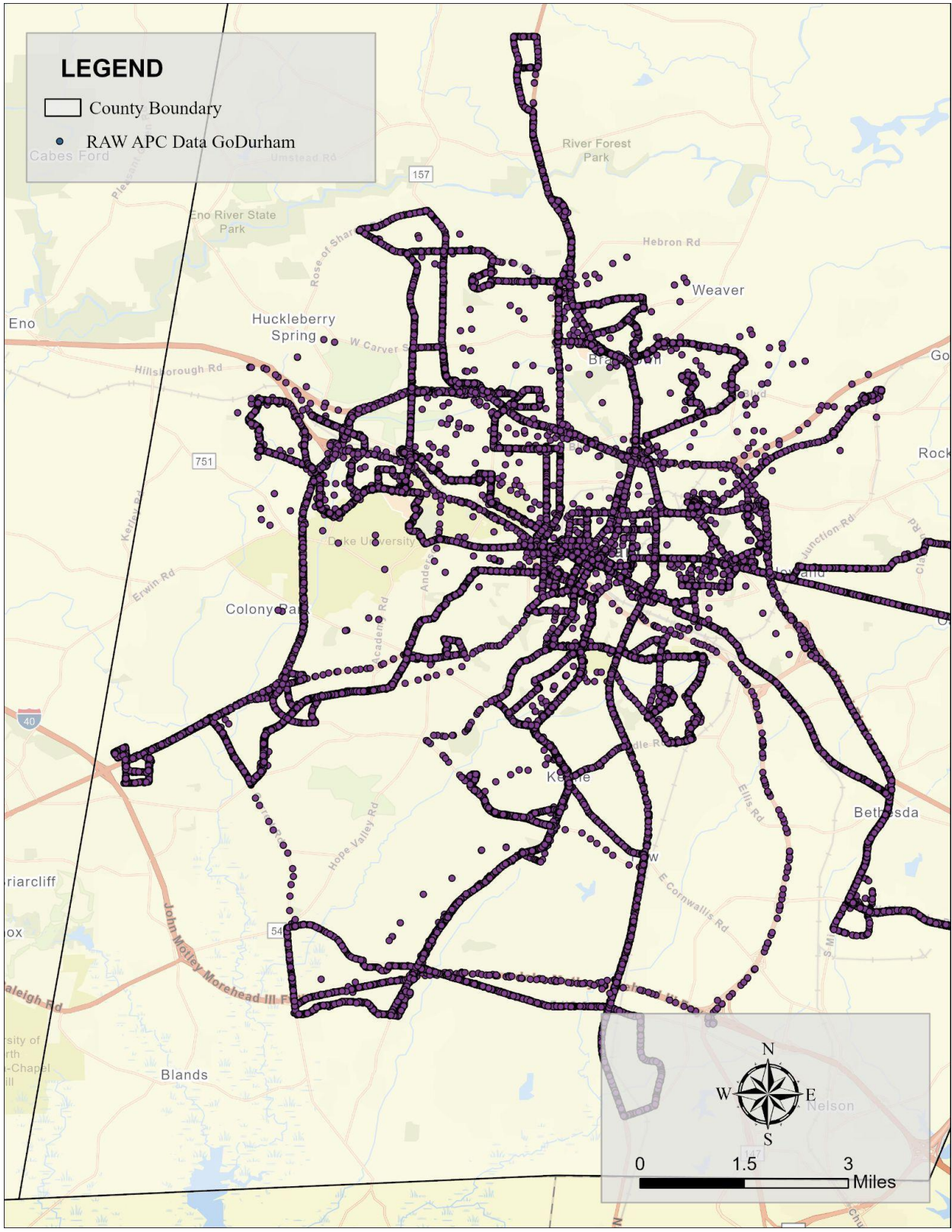
Web Mapping Application
Allows planners to visualize congestion throughout the day and multiply the delay by the hourly operating cost.
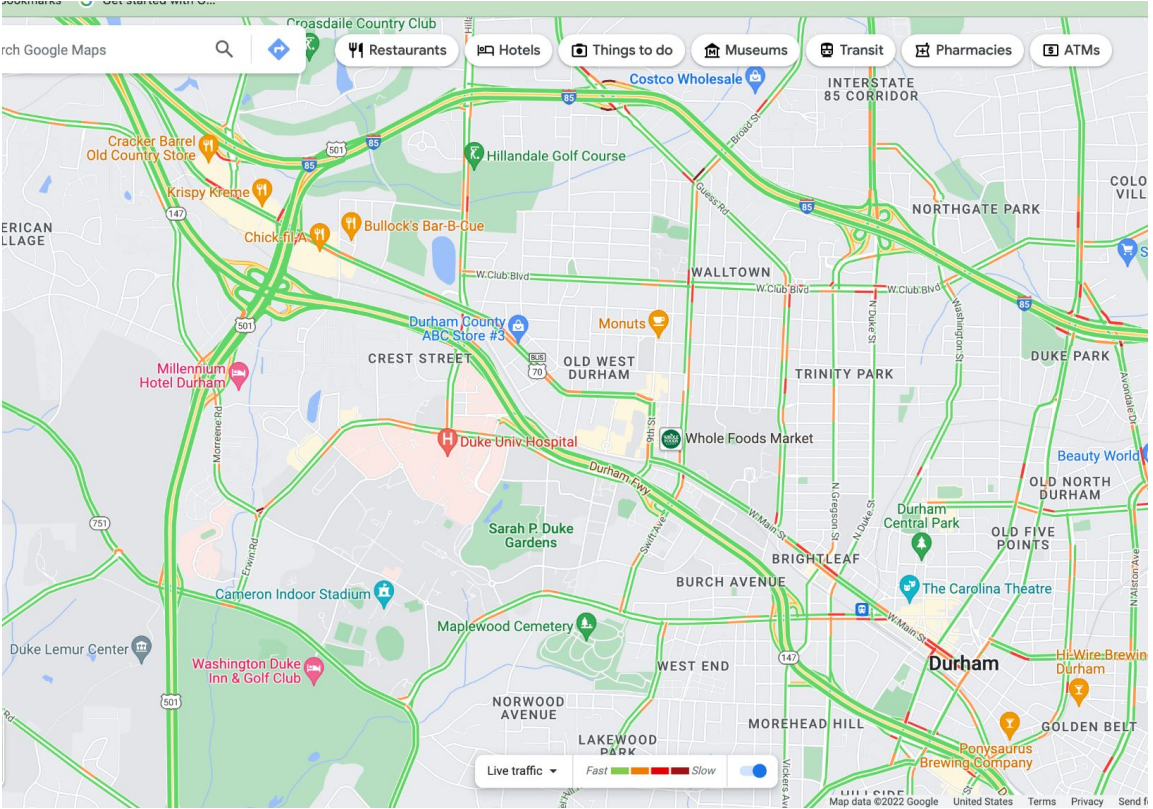
Daily Delay Profiles by Mode
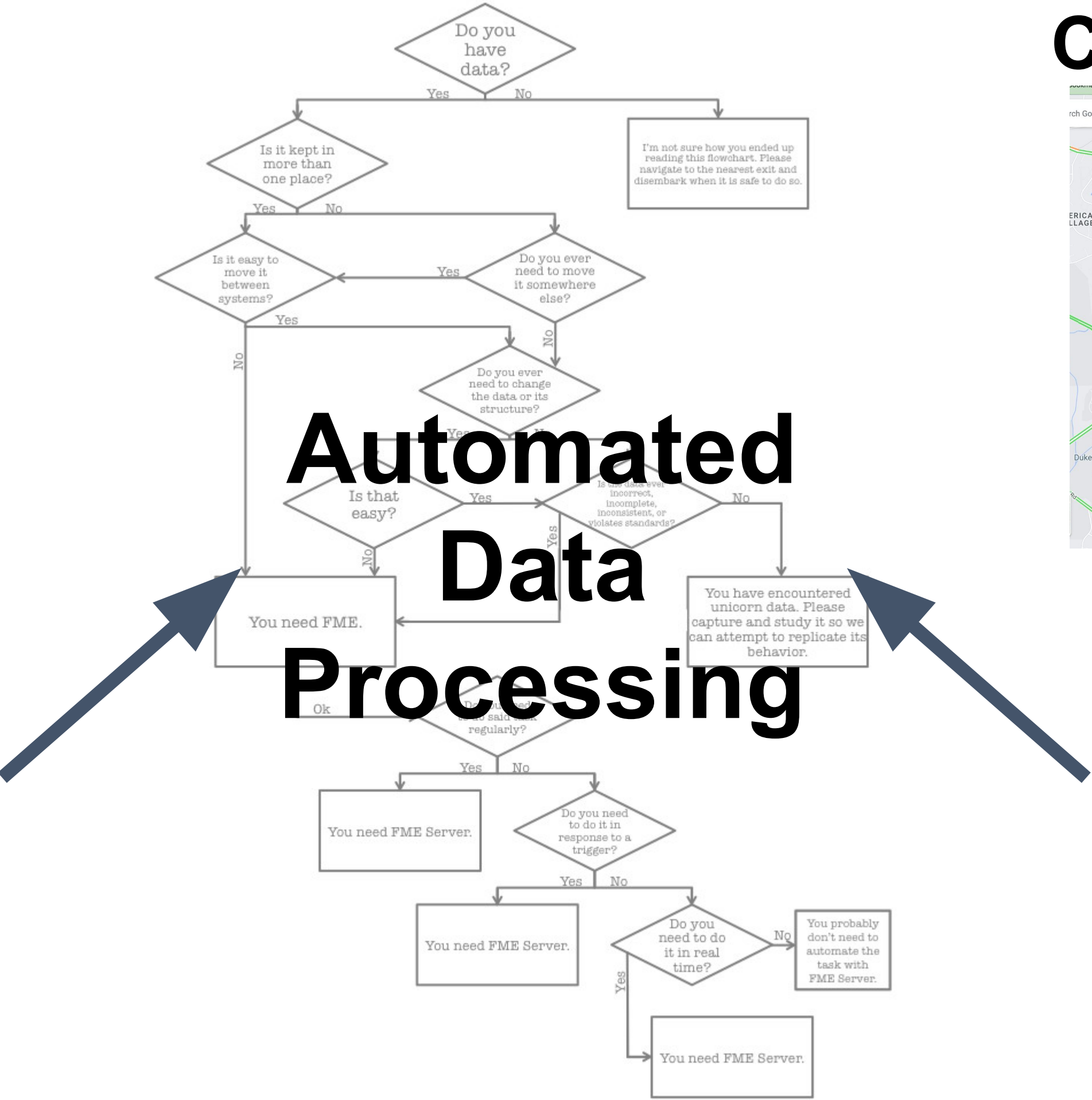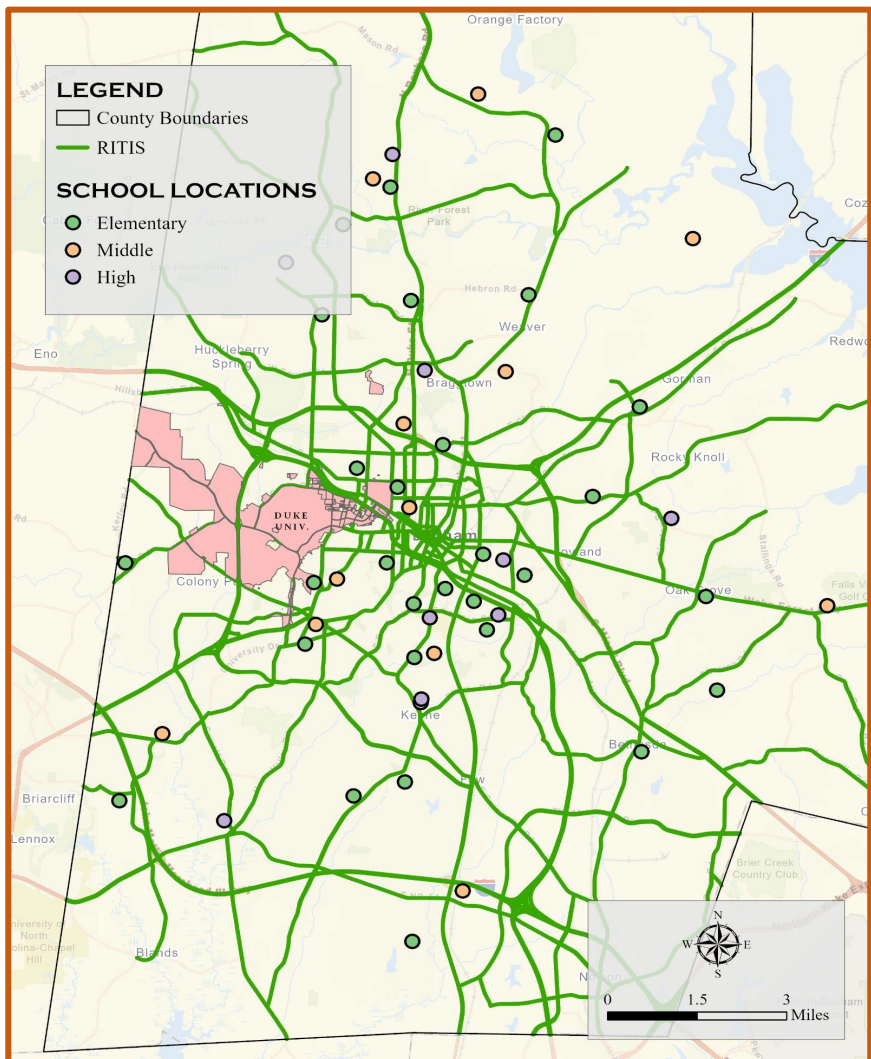

Automatic Vehicle Location

Common source data for public transit and school bus routes.

## Automated Data Processing

Local Road Congestion Dataset

Vs

Findings & Future Opportunities

- Modeling using widely-available resources allows for rapid calculations and can be conducted by those without strong GIS skills
- Combining transit and school buses increases the measured impact
- Slower speeds lead to increased journey time, decreased travel time reliability, higher costs, fewer passengers, and general service decline
- Identifies where to explore use of bus-on-shoulder, bus lanes, signal prioritization and re-routing.

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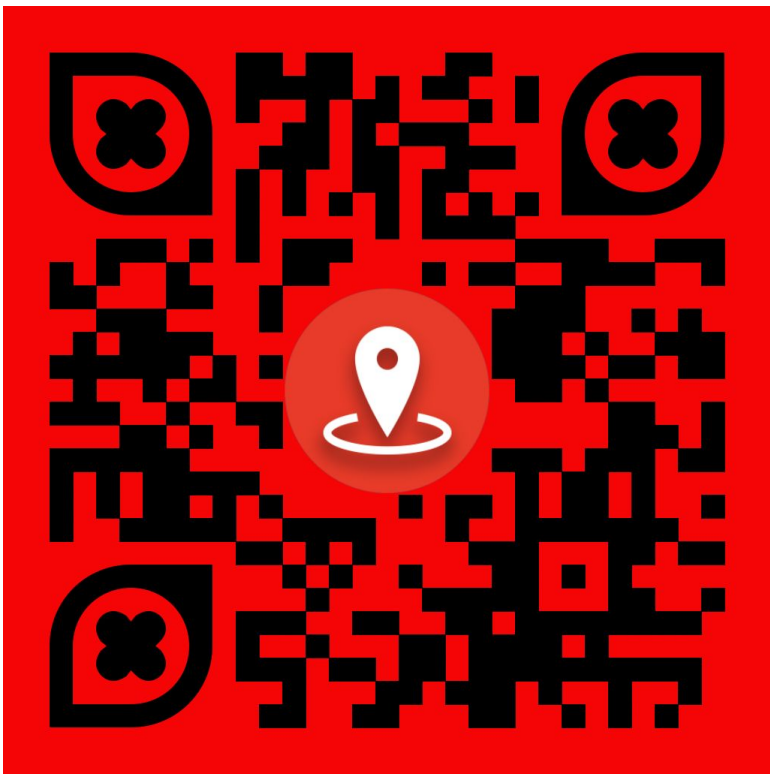
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