Innovations in Multi-Modal, Schematic Transit Mapping

Margaret Carragher, EIT
Georgia Institute of Technology
mcarragher3@gatech.edu

ABSTRACT
Cities like New York and Chicago have comprehensive rail networks that provide not only high frequency service, but also reach popular destinations and employment centers. Although many cities strive for similar transit infrastructure, acquiring the money and/or right-of-way to develop these transit systems takes time. As these systems are developed, cities are using alternative transportation modes such as light rail, streetcar, and local buses. Although historically rail and bus system maps have been separate, integration of these new modes requires integration of all system maps. Experts in the field of transit mapping have been calling for frequent transit maps, which highlight routes that provide frequent service or reach important destinations, regardless of mode. This project examines reactions of transit riders and non-riders to these new multi-modal, schematic maps. Using Metropolitan Atlanta Regional Transit Authority (MARTA) in Atlanta as a case study, the research team created multiple maps to gauge reactions through surveys. Each map adds BRT and local bus routes that meet specific frequency and/or location criteria to the existing rail map. Through surveying individuals with different transit ridership habits, this project explores the potential to affect ridership on these alternative modes and enhance understanding beyond the rail map. The results demonstrate the need to simplify system maps, the public desire for frequency mapping, and the potential to increase ridership on alternative modes. The final product will guide transit agencies in determining criteria to create maps that are easy to understand and incorporate multiple transportation modes.

PROJECT GOALS
1. Examine reactions to multi-modal, schematic maps and what riders are looking for in system maps.
2. Explore whether adding bus routes to a schematic rail map has the potential to increase bus ridership.
3. Explore how adding bus routes to a schematic rail map affects understanding of an overall transit system.

KEY RESEARCH QUESTIONS ASKED IN THE SURVEY
• Is it more important for maps to indicate bus and train routes that reach popular destinations or that come more often?
• If one of these maps replaced the current MARTA overall map, would you ride the bus more?
• If one of these maps replaced the current MARTA overall map, would it help you understanding of the overall MARTA system?

PROMPT FOR SURVEY
We asked participants which attribute was more important for bus routes to have to be shown on a multi-modal map. We also asked if they would ride the bus more if one of these maps replaced the current MARTA overall map. See Figures below.

CONCLUSIONS
These multi-modal maps were found to be particularly effective for:
- More prominently display service that is frequent and/or reaches popular destinations
- Simplifying bus service for popular routes
- Improving perception of transit coverage

Map used in both surveys conducted for this project, Margaret Carragher
mcarragher3@gatech.edu