ABSTRACT(S) IN THIS SESSION

Uber Movement: Open Data for Better Urban Planning
Rik Williams, Research Scientist, Uber Technologies Inc., San Francisco, CA

ABSTRACT TEXT: The Uber smartphone app connects riders to drivers in over 450 cities worldwide. As Uber trips traverse these cities, data on speed and location can be derived from GPS pings, providing rich geospatial and time-series data about local traffic conditions. In early 2017, Uber began releasing anonymized and aggregated data on travel times within select cities through its Movement platform. Ultimately, the goal is to release similar data in most cities where Uber operates in order to help inform transit route planning, congestion mitigation, and other challenges facing urban transportation professionals.

Here I will present an overview of the Movement platform, highlighting its data and functionality, and presenting case studies that illustrate how it can be used to explore traffic and congestion patterns.

Travel Demand Modeling for Transit Expansion Projects: Making Sense of Large Data using GIS
Nilesh Deshpande, AICP, Transportation Planner, WSP Parsons Brinckerhoff, Atlanta, GA

ABSTRACT TEXT: Travel demand models are extremely valuable in the environmental impact assessment of transit expansion projects. While traditional four-step trip based travel demand models are still more commonly used, increasing number of metropolitan planning organizations are adopting activity based travel demand models for preparing travel forecasts for their regions. Atlanta Regional Commission adopted a new regional activity based travel demand model in 2016. The power of the ABM lies in its ability to explore origin-destination patterns by sub-area, and to stratify these based on populations of interest by looking at different demographic characteristics by household such as age or income. Spatial analysis of such outputs can lead to valuable insights into travel patterns. With the added details of demographic stratification, activity based travel demand models commonly result in gigabytes of outputs. Analyzing such large data by traditional methods in GIS can be extremely time-consuming. With millions of records to process, a simple query can potentially take hours to complete. Our team was a consultant on a couple of transit expansion studies in the Atlanta region. As a part of the transit expansion studies, various tools such as Cube, ArcGIS, R programming, SQLite were used to analyze the outputs of the travel demand model. Python was also used to automate workflows. This presentation aims to showcase our findings about processing and visualizing large datasets.

Using Data Driven Pages to Produce Route Sheets for Bus Transit Service
Peter Hadley, Transportation Planner, Foursquare ITP, Rockville, MD

ABSTRACT TEXT: Have you ever been asked to produce multiple small-scale, specialized maps of your latest analysis for a variety of clients or elected officials? Dread having to re-make the same map 100+ times but for different geographies and at different scales? Was there a font change at the 11th hour, requiring you to open those 100 .mxd files to restyle each legend?

At this session, participants will learn how to use Esri map book tool to automatically generate multiple maps on one dataset to increase efficiencies and output from your GIS department. Presenters will review how to:

- Prepare your data for use in data driven pages (tips and tricks)
- Style your data to automatically emphasis the object(s) in focus
- Create and index additional data layers for labeling or other important spatial information
- Set-up a map template for effective mapbook production using dynamic text; and how to
- Use Python code (arcpy) to mass export and individually name map files in a variety of formats.

Presenters will show how they generated 60 detailed transit maps for new bus route proposals as part of a bus transit network redesign project in the Baltimore region, with repeated updates over three phases of planning. Presenters will provide background information on the problems they faced and the solutions they devised to resolve these problems.

This workshop is geared towards entry- to mid-level ArcGIS users and map-makers as well as advocacy or government professionals working with the public or other stakeholders.