Solving the first mile/last mile knowledge gap with GIS & Remix
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ABSTRACT TEXT: In January 2017, Pinellas Suncoast Transit Authority expanded its first mile/last mile service, Direct Connect, from a small pilot project to a fully-fledged program that encompasses all of Pinellas County. With Direct Connect, transit riders can take a subsidized ride with Uber, a local taxi service, or a wheelchair provider to or from designated bus stops.

GIS was central to the planning of Direct Connect, helping staff to set parameters for the program and to explain its zone-based system to riders. By using online transit planning platform Remix, however, PSTA will go one step farther, providing customers and staff with an interactive visualizations to more intuitively understand the program implications.

In this session, we'll explore best practices around using Remix to engage the community. Specifically, we'll walk through how PSTA displayed the geographic boundaries of Direct Connect zones to riders by importing zone boundary shapefiles as data layers in Remix. We'll also touch on how planning staff will be able to utilize Remix to evaluate the relationship between Direct Connect and the existing transit network in order to plan future modifications to the program and find opportunities to reallocate existing resources from low performing routes to the core transit network.

Interactive Isochrone Mapping and Conversations about Transit System Design
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ABSTRACT TEXT: For many years transit professionals have used various tools to visualize how different transit system designs can affect access to and around the city. Isochrone mapping is a powerful way to see how different transit network designs can affect travel times. Jarrett Walker and Associates has led multiple cities and transit agencies through public processes where the outcomes produces by transit networks based on different choices are explicitly compared.

As technologies have improved, isochrones maps have become a larger part of how we communicate the differences in outcomes between different transit system designs. Now, in partnership with Michael Baker International, we have developed an interactive webmap tool that allows anyone to explore different transit concepts for different destinations in the context of redesigning the transit system in Richmond, Virginia.

This session will explore the technical hurdles of transitioning from GTFS outputs of a Remix transit network to a Network Analyst based multimodal network in the ArcGIS Server environment. We will explain the methods in building the ArcGIS networks and key choices in how to design the user interface of the tool. And we will discuss how the tool enhanced the conversations with the public, stakeholders and elected officials about the different transit concepts.
Spatial Tools for Understanding Transit Capacity Constraints  
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ABSTRACT TEXT: The Boston Region Metropolitan Planning Organization (MPO) is responsible for conducting the federally required metropolitan transportation-planning process for the Boston metropolitan area. The MPO uses this process to develop a vision for the region and then decides how to allocate federal and state transportation funds to programs and projects roadway, transit, bicycle, and pedestrian that support that vision. The transit system is a significant part of this vision, serving over 1,000,000 transit trips daily on rapid transit, commuter rail, bus, and ferry transit modes. Many of these services have capacity constraints during peak period use, which can be a function of the vehicles or the headways being used. Understanding where the capacity constraints are in the system and how they impact the rest of the system is an important question the MPO helps our local transit agencies understand using a suite of modeling tools. The goal of the research was threefold: quantify the definition of capacity constraints by transit mode, develop tools for analyzing them, and then a means to effectively visualize the results of the capacity constraints on the transit system.

The initial research focused on defining what the realistic capacity is for each type of transit vehicle and service operated in the region. Our MPO uses a traditional, trip-based regional travel demand model represented in a spatial modeling package called TransCad for estimating demand for all of the transportation modes. The second part of the research focused updating the methodology in the spatial modeling software to constrain demand on transit vehicles and services. This methodology is intended to enable the model to more accurately reflect how people react to congestion in the transit system and potentially change their route or path choice. The result showed the expected shifts in ridership across modes and services, as well as changes to trip cost and travel time. The third piece of this research involved visualizing the results of the updated methodology in order to understand where the constraints in the system are and understand what their impact on the transit system is.