

Simplified Trips-on-Project Software (STOPS): Strategies for Successful Application

presented to

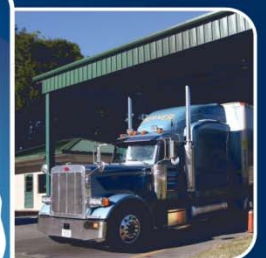
Transit Committee
Florida Model Task Force

presented by

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Date

May 5, 2015



Overview



- Background
 - New Version 1.50 of STOPS
 - Setting up for success
 - Developing forecasts
 - Wrap up

Our Work with STOPS



- The Federal Transit Administration (FTA) commissioned Cambridge Systematics (CS) to produce several independent ridership forecasts using STOPS
- CS collaborated with FTA and Resource Systems Group (RSG) on some preliminary training materials to help users work with STOPS
- CS currently is working with STOPS to produce forecasts for potential New Starts and Small Starts projects



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New Version 1.50 of STOPS



- Similar in operation to prior releases, but new version is designed to generate more accurate results due to the following major changes
 - Revised nonhome-based (NHB) trip procedures
 - Enhanced the schedule-based path-building
 - Simplified the process of coding bus rapid transit (BRT) facilities
 - Improved representation of station-level impedance
 - Redefined the Fixed Guideway Visibility Factor

New Version 1.50 of STOPS (continued)



- Similar in operation to prior releases, but new version is designed to generate more accurate results due to the following major changes
 - Expanded handling of multiple General Transit Feed Specification (GTFS) directories
 - Updated the model calibration
 - Added capacity to process split Census geography
 - Revised identification of project trips to include trips that neither board nor alight at a project station
 - Increased maximum problem size



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Many Details in Setting Up



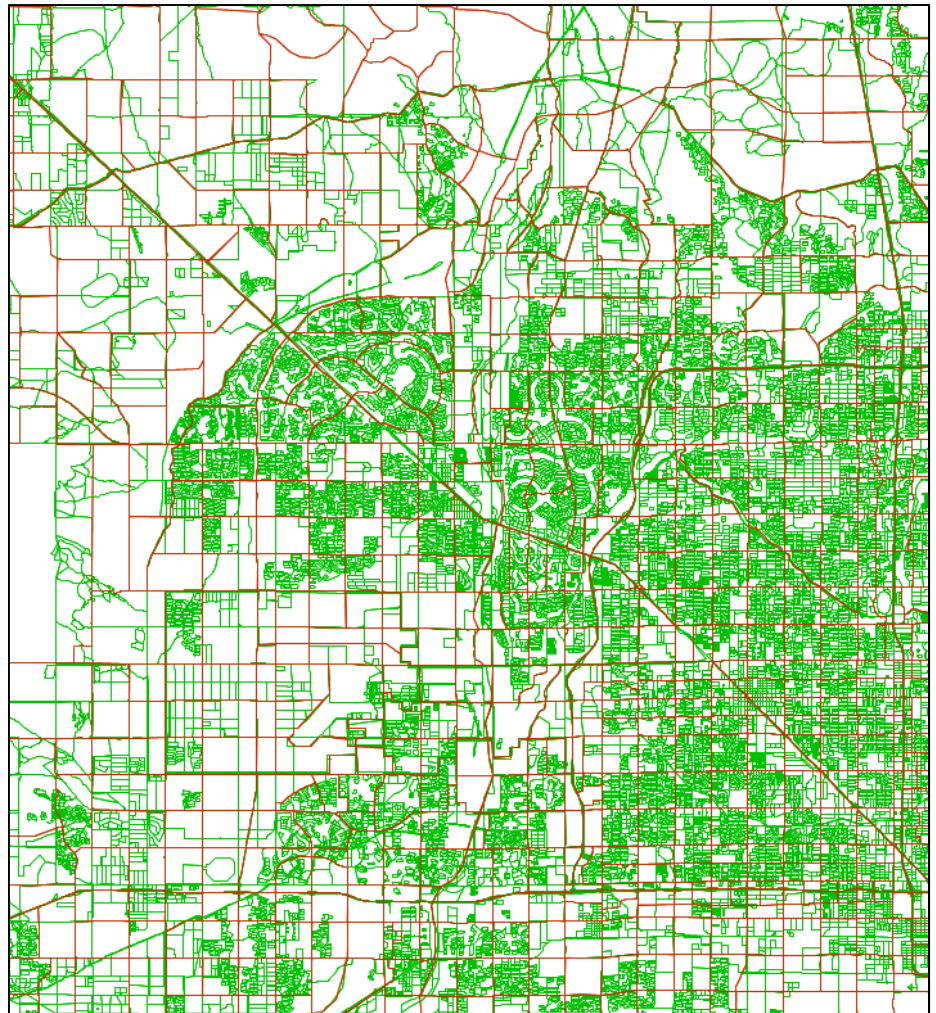
- While all of the inputs are straightforward, there are many details in getting started with a STOPS forecast
- Inspecting the inputs carefully can save many hours later
- Some areas where things can go wrong...
 - Coordinate systems
 - Census-Zone splitting
 - District systems
 - GTFS coding



Coordinate Systems



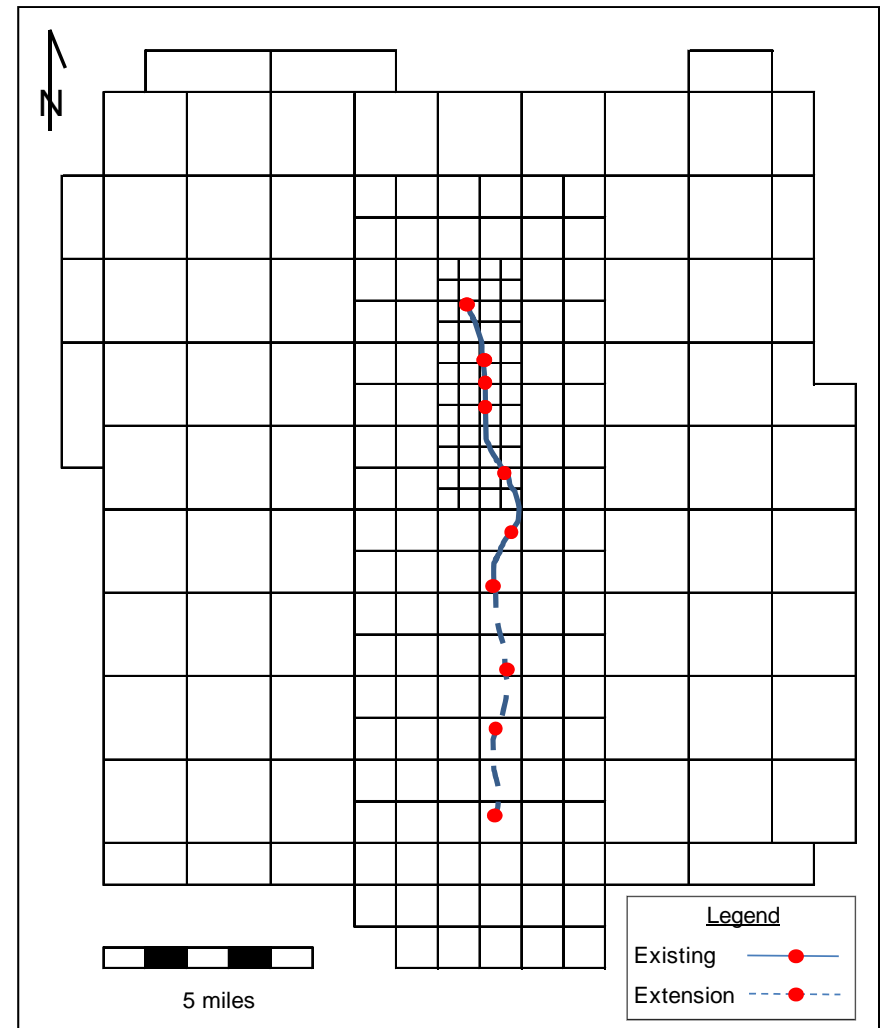
- STOPS uses coordinates to relate data from different sources
 - Census transportation analysis zone (TAZ), tract, or block group shapefiles
 - Station shapefiles
 - Metropolitan Planning Organization (MPO) TAZ shapefiles
 - GTFS stop objects
- STOPS expects coordinates that are latitude and longitude



Census-Zone Splitting



- STOPS uses census zones as the geographic reference for Census Transportation Planning Products (CTPP) Journey-to-Work (JTW) flows
- Good Practice
 - Large census zones split along project corridor
 - Large census zones split into smaller zones
 - Zones contain single station



Districts in STOPS Are Used in Several Ways

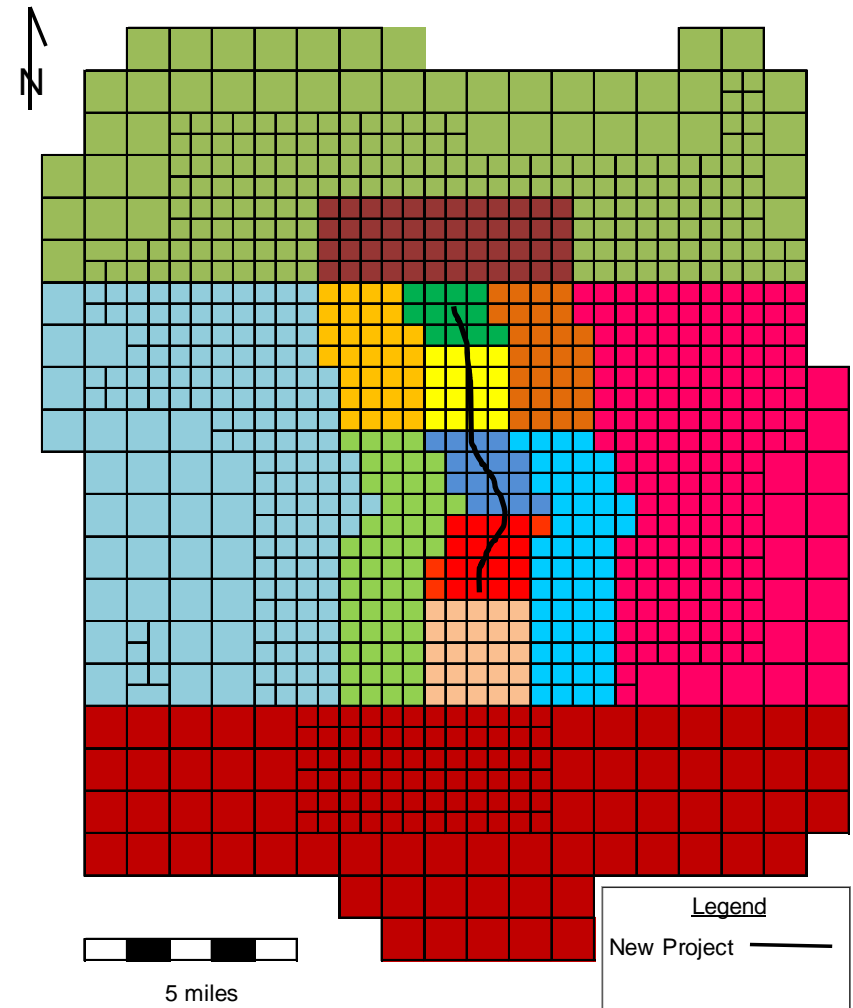


- Represent attraction areas for internal calibration
 - Match CTPP transit shares for each attraction district
- Supports the growth factoring step
 - Compute trips per worker and trips per employee in 2000 CTPP (by district) that are applied to each constituent zone future population and employment
- Used for reporting

District Definition



- Good Practice
 - Districts for central business district (CBD) and suburban activity center
 - Four districts representing different walk areas to project
 - Six districts representing extended corridor
 - Four districts covering remaining region



GTFS Coding Strategy



- GTFS coding can be laborious!
- Strategy to manage GTFS coding includes
 - Prioritizing coding changes according to the likely impacts on estimates of project ridership
 - Monitoring the impacts of changes on ridership to provide information on when to stop

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Developing Forecasts



Some Things That Can Go Wrong

- Assuming that the first complete model run represents a completed forecast
- Concentrating too much attention on issues that have relatively little impact on project ridership
- Ignoring issues that have a major impact on project ridership
- Failing to demonstrate that STOPS understands existing peer services and how ridership will change with the introduction of the project



Developing Forecasts (continued)



- It is recommended that users employ an application strategy
- An application strategy is an overall approach to creating plausible forecasts that is efficient and generates helpful insights along the way

Application Strategy



Plan from the very beginning to work from current conditions through all of the changes from today to the future with the project

Step	Demographics	STOPS Input Slots			Objective
		Existing Scenario GTFS	No-Build Scenario GTFS	Build Scenario GTFS	
1	Current	Existing	Existing	Existing	Calibration
2	Current	Existing	Existing	Build	Initial project ridership
3	Current	Existing	No-Build	No-Build	Impact of no-build network
4	Horizon Year	Existing	No-Build	No-Build	Impact of future year demographics
5	Horizon Year	Existing	No-Build	Build	Plausibility of horizon year project ridership

Running STOPS multiple times with small incremental improvements builds experience and increases confidence in the results



Preparing the Forecast



You aren't done until you have written up the results in plain language to describe

1. Existing ridership patterns and service characteristics
2. Service and ridership changes associated with the project itself assuming implementation in the current year
3. Service and ridership changes associated with implementation in the horizon year
 - a. Other projects and service improvements included in the no-build definition
 - b. Ridership changes associated with future demographics



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Acknowledgements and Thanks



- Jim Ryan, Federal Transit Administration
- Bill Woodford, Resource Systems Group
- Smith Myung, Cambridge Systematics
- Xuemei Liu, Cambridge Systematics



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