



Simplified Trips on Project Software (STOPS)

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Southeast Florida FSUTMS Users Group Meeting

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Outline

- Overview
- Inputs/Outputs
- STOPS Interface
- Applications in Southeast Florida

STOPS Overview

- Limited implementation of the conventional 'four-step' trip-based model
- Major Focus – Forecasts trips on major-capital fixed guideway projects (BRT, Streetcar, Light, Heavy and Commuter Rails)
- Uses readily available inputs
- Easy to use
- Project sponsors may prepare forecasts with:
 - Regional travel models
 - Incremental models
 - STOPS
- Nationally calibrated, with adjustments made for local transit and fixed guideway systems

STOPS Inputs

- State-specific census shape file
- CTPP 2000 Parts I, II & III files
- Census 2010 block-boundary file
- General Transit Feed Specification (GTFS) time tables to represent current transit services
- Locations of project stations
- Definition of corridor districts
- MPO data
 - Year 2000 population and employment by zone
 - Current year and horizon years population and employment by zone
 - Zone-to-zone peak period highway impedances from the regional travel model for current and horizon years

STOPS Outputs

- Main STOPS report
 - Calibration summary
 - District-to-district and station-to-station flows
 - Total linked transit trips
 - Incremental linked transit trips: Build minus No-build
 - Linked transit trips that use the project
 - Station volumes
 - By mode of access at the production end of the trip
 - District-to-district changes in person-miles of travel in automobiles
- Graphical outputs
 - Trip ends (productions or attractions) selected by:
 - Existing, No-build, Build, project, trip gains, or trip losses
 - Attraction district or production district
 - Transit path-type
 - Access mode
 - Trip purpose
 - Household auto-ownership

STOPS Interface

STOPS Main Menu-v1.01 - 09/04/2013

Initial STOPS Set-up Steps

Select GIS Executable: C:\Program Files (x86)\ArcGIS\Desktop10.1\bin\ArcMap GIS

Select Python Executable*: C:\Python27\ArcGIS10.1\pythonw.exe

* - Only used for ArcGIS

Scenario Set-up Steps

1. Select/Create Parameter File: C:\Projects\Oakland Park STOPS\SEA\Seattle.c

2. Specify Station Locations: FILES FOUND!

3. Edit Parameter File: FILES FOUND!

4. List and Check TAZ and CTPP Files: FILES FOUND!

5. List and Check GTFS Files: FILES FOUND!

5a. EXST GTFS Test 5b. NOBL GTFS Test 5c. BLD GTFS Test Optional

6. Define Forecast Years: FILES FOUND!

Data Preparation Steps

7. Create Station Buffers: FILES FOUND!

8. Define Districts and Zonal Data: FILES FOUND!

9. Create MPD-TAZ Equivalency and Generate Zonal SE Forecasts: FILES FOUND!

10. Prepare Pedestrian Environment Data: FILES FOUND!

STOPS Batch Steps

Current Year: 2010 Opening Year: Not Defined 10 Year: Not Defined 20 Year: Not Defined

11. Run Batch Steps: COMPLETE!

☒ CTPP Extract COMPLETE!
☒ GTF Path COMPLETE!
☒ GTF Post COMPLETE!
☒ Prepare Forecast Years COMPLETE!
☒ STOPS COMPLETE!

STOPS Reporting

12. Report STOPS Results

13. Map STOPS Results

Messages

1. STOPS Returned to Main Menu

Update File Status











Exit

Manual Steps

Automatic Steps

1. Select/Create Parameter File

- Create a new folder and a new control file
- For subsequent scenarios, this control file set-up can be copied
 - Copies all the input files in this case

Name	Date modified	Type	Size
 Districts	5/6/2014 10:19 AM	File folder	
 GTFOutput	5/1/2014 1:17 PM	File folder	
 Inputs	5/6/2014 10:19 AM	File folder	
 Logfiles	6/3/2014 3:26 PM	File folder	
 OutputData	5/1/2014 9:39 PM	File folder	
 Reports	5/6/2014 10:16 AM	File folder	
 Scratch	5/6/2014 10:07 AM	File folder	
 Skims	5/1/2014 6:38 PM	File folder	
 Stops	5/1/2014 1:17 PM	File folder	
 TRL_BLD.ctf	4/23/2014 4:21 PM	CTL File	4 KB

2. Specify Station Locations

- Opens a nationwide database of fixed guideway stations in ArcGIS/Transcad
- Add any existing stations missing from the file
- Add new project stations
- For all the stations active in the current scenario, define:
 - Station location (for new stations)
 - Station sequence
 - Station name
 - Station code (short name for stations)
 - Station group
 - Group name
 - Daily boardings (for existing stations)
 - GTFS STOP_IDs
 - STOPS type (indicates whether station is part of current scenario)
 - New station indicator (value of 1 implies new project station)

2. Specify Station Locations (Contd.)

Table												
STOPStations												
	STATIONSEQ	STATION	STAT_CODE	STAT_GRP	GRP_NAME	DAILYBOARD	STOP_ID1	STOP_ID2	STOP_ID3	STOP_ID4	STOPSTYPE	NEWSTATION
	60	DADELAND SOUTH	MRL_DLDS	11	MR-11	7632	9528 M	9529 M			4	0
	59	DADELAND NORTH	MRL_DLDN	11		6614	9526 M	9527 M			4	0
	58	SOUTH MIAMI	MRL_SMIA	10		4127	9524 M	9525 M			4	0
	57	UNIVERSITY	MRL_UNIV	10		2227	9522 M	9523 M			4	0
	56	DOUGLAS ROAD	MRL_DGLS	10		4239	9520 M	9521 M			4	0
	55	COCONUT GROVE	MRL_CCGR	10	MR-10	2064	9518 M	9519 M			4	0
	63	MIA LOWER RAMP	MOV_MIAW	13	MOV-13	5000	56 M				0	0
	38	MIAMI AIRPORT	TRL_MIAA	6	TRL-6	900	90018 T				2	0
	62	MIA Concourse E	MOV_MIAE	13		5000	10493 M				0	0
	61	MIA MR	MRL_MIAA	7		1500	10494 M	10495 M			3	0
	37	HIALEAH MARKET	TRL_HIAM	6	TRL-6	300	90017 T				2	0
	46	EARLINGTON HEIGHTS	MRL_ERLG	7	MR-7	1799	9500 M	9501 M			4	0
	39	PALMETTO	MRL_PALM	7		1427	9486 M	9487 M			4	0
	40	OKEECHOBEE	MRL_OKEE	7		1447	9488 M	9489 M			4	0
	41	HIALEAH	MRL_HIAM	7		1766	9490 M	9491 M			4	0
	36	TRI-RAIL/METRORAIL TRANSFER	TRL_MRLX	5	TRL-5	2759	90016 T	9493 M	9492 M		2	0
	45	BROWNSVILLE	MRL_BROW	7		1046	9498 M	9499 M			4	0
	44	DR MARTIN LUTHER KING JR	MRL_MLKJ	7		1500	9496 M	9497 M			4	0
	43	NORTHSIDE	MRL_NORT	7		1660	9494 M	9495 M			4	0

- Station groups play a critical role in calibration of STOPS to local conditions
 - Try different groupings

3. Edit Parameter File

STOPS Control File Editor - E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\OPB.ct

Run Name: OPB BAT lane with BRT

System Name: Broward Co.

Geography Type: TZ (CTPP Zones)

State 1: FL (12-Florida)

Optional State 2 (blank if no state 2): Not Defined

Optional State 3 (blank if no state 3): Not Defined

MPD Code: 2681 (FL-Fort Lauderdale [Broward County MPD])

Optional ARRF Parameters: ☐ Suburb-CBD System Flag

GTF File Set 1:

Existing Directory: BCTEXIST\

No-Bld Directory: BCTEXIST\

Build Directory: BCTBLD\

Optional Suffix:

Schedule Day: 6/ 5/2013

Route ID: 1 to 100

Trip ID Position*: 1 to 100

Stop ID Position*: 1 to 100

Optional GTF File Set 2:

Existing Dir.:

No-Bld Dir.:

Build Dir.:

Optional Suffix:

Schedule Day: 8/ 5/2013

Route ID: 1 to 100

Trip ID Position*: 1 to 100

Stop ID Position*: 1 to 100

Optional GTF File Set 3:

Existing Dir.:

No-Bld Dir.:

Build Dir.:

Optional Suffix:

Schedule Day: 8/ 5/2013

Route ID: 1 to 100

Trip ID: 1 to 100

Stop ID: 1 to 100

Optional GTF File Set 4:

Existing Dir.:

No-Bld Dir.:

Build Dir.:

Optional Suffix:

Schedule Day: 8/ 5/2013

Route ID: 1 to 100

Trip ID Position*: 1 to 100

Stop ID Position*: 1 to 100

STOPS Parameters:

Ratio of HBD:HBW 0-Car HH TransitTrips (default 1.098)	0.7230	Ratio of NHB:HB 0-Car HH TransitTrips (default 0.199)	0.2330
Ratio of HBD:HBW 1-Car HH TransitTrips (default 0.535)	0.5440	Ratio of NHB:HB 1-Car HH TransitTrips (default 0.193)	0.2400
Ratio of HBD:HBW 2-Car HH TransitTrips (default 0.503)	0.6570	Ratio of NHB:HB 2-Car HH TransitTrips (default 0.234)	0.2200

Degree of Fixed Guideway Visibility (1.0=Full, 0.5=Partial, 0.0=None): 0.2000

Save and Exit

Exit Without Saving

Messages:

Notes: * Optional character position designators for GTF ID Fields. Used when IDs exceed 9 characters in length but a subset of characters would generate a short unique ID.

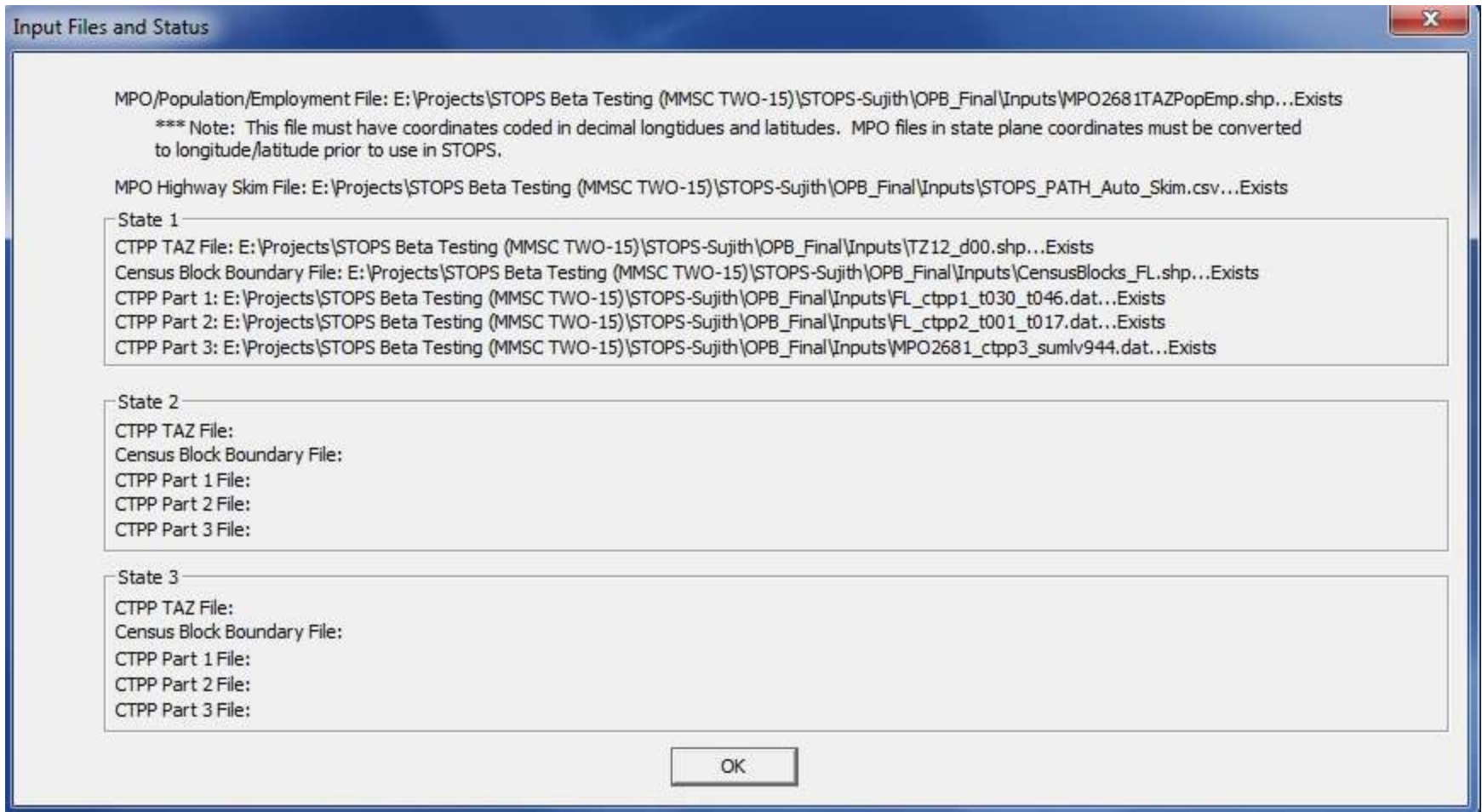
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Useful when dealing with multiple transit agencies

Default values can be changed based on survey data

FTA recommended values based on the project mode

4. List and Check TAZ/CTPP Files



Input Files and Status

MPO/Population/Employment File: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\MPO2681TAZPopEmp.shp...Exists

*** Note: This file must have coordinates coded in decimal longitudes and latitudes. MPO files in state plane coordinates must be converted to longitude/latitude prior to use in STOPS.

MPO Highway Skim File: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\STOPS_PATH_Auto_Skim.csv...Exists

State 1

CTPP TAZ File: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\TZ12_d00.shp...Exists

Census Block Boundary File: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\CensusBlocks_FL.shp...Exists

CTPP Part 1: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\FL_ctpp1_t030_t046.dat...Exists

CTPP Part 2: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\FL_ctpp2_t001_t017.dat...Exists

CTPP Part 3: E:\Projects\STOPS Beta Testing (MMSC TWO-15)\STOPS-Sujith\OPB_Final\Inputs\MPO2681_ctpp3_sumlv944.dat...Exists

State 2

CTPP TAZ File:

Census Block Boundary File:

CTPP Part 1 File:

CTPP Part 2 File:

CTPP Part 3 File:

State 3

CTPP TAZ File:

Census Block Boundary File:

CTPP Part 1 File:

CTPP Part 2 File:

CTPP Part 3 File:

OK

5. List and Check GTFS Files

GTFS Files and Status - Part 1 - Existing Scenario

STOPS uses computerized schedule data in GTFS format. Most transit agencies maintain schedule data in GTFS format for existing conditions. These files can be edited in a text editor and displayed using a variety of techniques. Since a metropolitan area may have multiple transit operators with individual GTFS files, STOPS allows the user to combine up to 4 separate GTFS file sets. Each is coded with a prefix (Up to 40 characters; e.g., 'Metro', or 'CountyBus') added to the standard GTFS file names. The first file set may use a blank prefix but all other file sets must have a non-blank prefix. The following is a list of files based on the prefixes coded in the control file.

Agency	E:\Projects\STOPS Beta Testing (MMSC	GTFS Fileset 2
Calendar	E:\Projects\STOPS Beta Testing (MMSC	
Routes	E:\Projects\STOPS Beta Testing (MMSC	
Trips	E:\Projects\STOPS Beta Testing (MMSC	
Stops	E:\Projects\STOPS Beta Testing (MMSC	
Stop_times	E:\Projects\STOPS Beta Testing (MMSC	
Frequencies (optional)	E:\Projects\STOPS Beta Testing (MMSC	
PNR (recommended)*	E:\Projects\STOPS Beta Testing (MMSC	
Editlist (optional)*	E:\Projects\STOPS Beta Testing (MMSC	

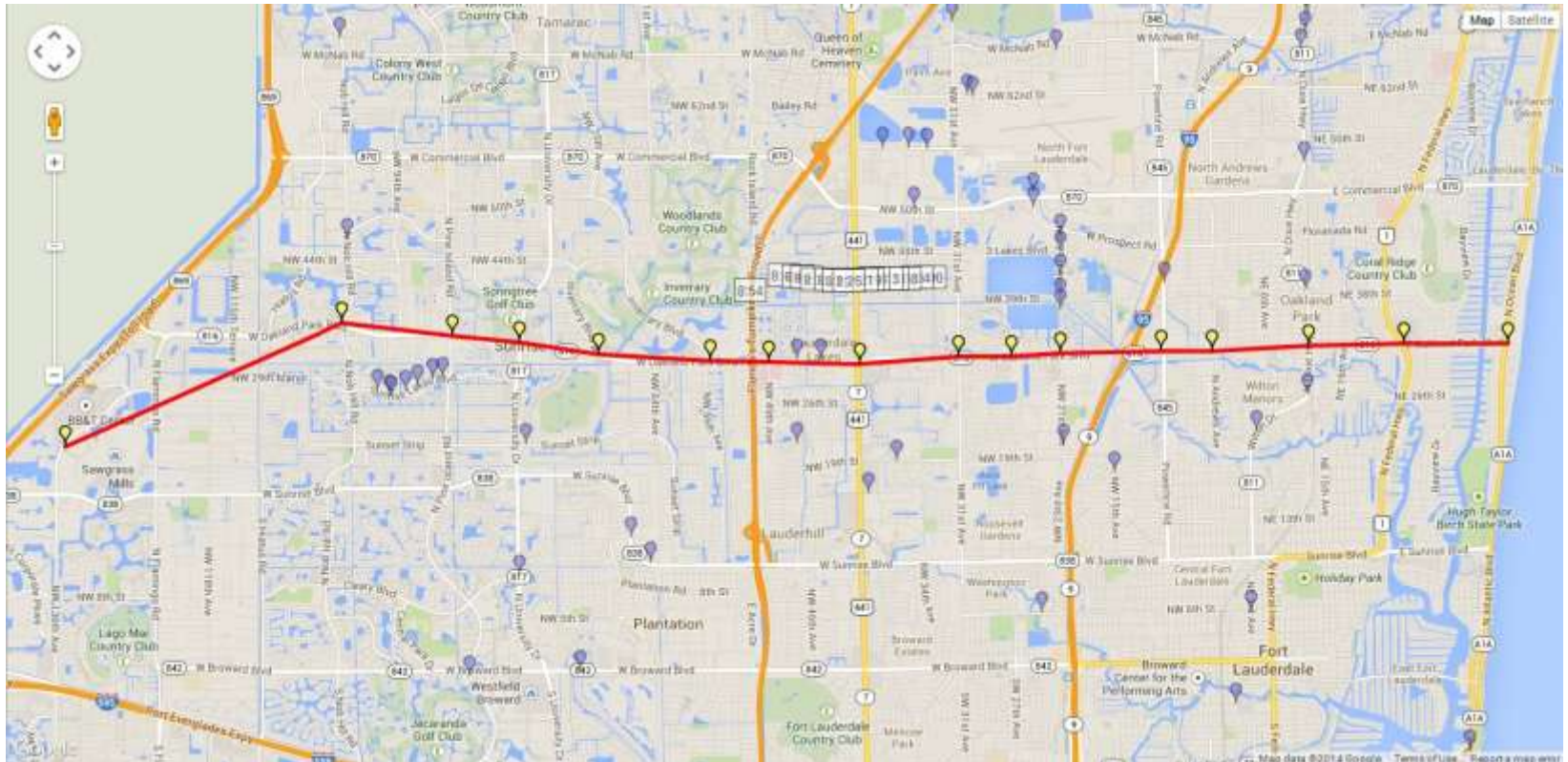
Agency	GTFS Fileset 3	GTFS Fileset 4
Calendar		
Routes		
Trips		
Stops		
Stop_times		
Frequencies (optional)		
PNR (recommended)*		
Editlist (optional)*		

* STOPS extension to General Transit Feed Specification standard

OK

5a,5b,5c. EXST/NOBL/BLD GTFS Test

- GTFS coding and editing is complex
- Steps 5a, 5b, 5c help in visualizing the coded GTFS files for the existing, no-build and build conditions respectively



6. Define Forecast Years

Forecast Year Parameters

Numeric TAZ Field Name* TAZ_REG

	CTPP Year**	Current Year***	Opening Year	10-Year Forecast	20-Year Forecast
Year	2000	2010			2035
Population/Household Field Name	POP_00	POP_10			POP_35
Employment Field Name	TOTE_00	TOTE_10			TOTE_35

* NOTE: Numeric TAZ field is required to run STOPS

** NOTE: CTPP Year (2000) field names for population/household and employment are required to run STOPS

*** NOTE: Current year number, population/household field and employment field are required to run STOPS

Weekday Unlinked Regional Bus and Rail Transit Trips (blank= do not calibrate to regional transit trips)

124556

Weekday Regional Linked Transit Trips Made by Travelers from Home-to-Work or Work-to-Home

35373

Growth Factor Geography

☐ Zone

☒ District

OK Cancel

Can be obtained from survey/NTD.

Steps 7 & 8

- Step 7: Create Station Buffers
 - Automatically creates 25 mile buffers around project stations
- Step 8: Define Districts and Zonal Data
 - Opens ArcGIS/Transcad
 - Group zones into districts (preferably less than 15)
 - Districts need to be defined only once

Steps 9 & 10

- Step 9: Create MPO-TAZ Equivalency and Generate Zonal SE Forecasts
 - Automatically creates an equivalency file between MPO zone system and CTPP geography
 - Important: MPO and CTPP shape files should be in the same co-ordinate system
- Step 10: Prepare Pedestrian Environment Factors
 - Automatically generates an estimate on the number of census blocks contained in each unit of CTPP geography

Step 11: Run Batch Steps

STOPS Main Menu-v1.01 - 09/04/2013

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Select GIS Executable: C:\Program Files (x86)\ArcGIS\Desktop10.1\bin\ArcMap GIS

Select Python Executable*: C:\Python27\ArcGIS10.1\pythonw.exe

* - Only used for ArcGIS

Scenario Set-up Steps

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2. Specify Station Locations: FILES FOUND!

3. Edit Parameter File: FILES FOUND!

4. List and Check TAZ and CTPP Files: FILES FOUND!

5. List and Check GTFS Files: FILES FOUND!

5a. EXST GTFS Test 5b. NOBL GTFS Test 5c. BLD GTFS Test Optional

6. Define Forecast Years: FILES FOUND!

Data Preparation Steps

7. Create Station Buffers: FILES FOUND!

8. Define Districts and Zonal Data: FILES FOUND!

9. Create MPD-TAZ Equivalency and Generate Zonal SE Forecasts: FILES FOUND!

10. Prepare Pedestrian Environment Data: FILES FOUND!

STOPS Batch Steps

☒ Current Year ☐ Opening Year ☐ 10 Year ☐ 20 Year

2010 Not Defined Not Defined Not Defined

11. Run Batch Steps: COMPLETE!

☒ CTPP Extract COMPLETE!

☒ GTF Path COMPLETE!

☒ GTF Post COMPLETE!

☒ Prepare Forecast Years COMPLETE!

☒ STOPS COMPLETE!

STOPS Reporting

12. Report STOPS Results

13. Map STOPS Results

Manual Steps

1. STOPS Returned to Main Menu

Automatic Steps

Update File Status Exit

Step 12: Report STOPS Results

- Opens a notepad window and displays the results for the selected year

T2_BCTEXTST#BCTEXTST#BCTBLD_STOPSY2010Results.pm - Notepad

File Edit Format View Help

ALL AUTO OWNERSHIP LEVELS

Table 4.01
*** WEEKDAY LINKED TRANSIT TRIPS (All Transit/All car HH) ***
District to District MODEL Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

Idist	West	Sunri	Tamar	Plant	Laude	Laude	Oakla	Wilto	Ft.La	North	South	Other	Total
West	183	654	315	261	277	101	213	115	51	401	389	0	2960
Sunri	152	1090	237	541	237	231	251	266	191	362	856	0	4413
Tamar	187	274	578	307	765	323	395	299	95	672	425	0	4320
Plant	182	1129	490	932	688	519	470	758	217	833	1544	0	7762
Laude	63	155	121	151	680	250	511	518	110	466	300	0	3325
Laude	61	220	199	208	576	428	376	900	149	392	777	0	4286
Oakla	54	144	147	109	904	234	1921	1189	401	904	651	0	6658
Wilto	53	345	155	228	923	673	1651	3118	883	873	2212	0	11114
Ft.La	3	34	30	25	53	46	95	255	157	22	191	0	911
North	250	633	643	443	1918	451	2221	1219	523	12261	1469	0	22031
South	129	1142	372	592	946	654	938	1572	1405	996	20043	0	28790
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1317	5820	3287	3797	7967	3909	9042	10209	4183	18182	28837	0	96570

Table 4.02
*** WEEKDAY INCREMENTAL LINKED TRANSIT TRIPS (All Transit/All car HH) (VS. NO-BUILD) ***
District to District MODEL Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

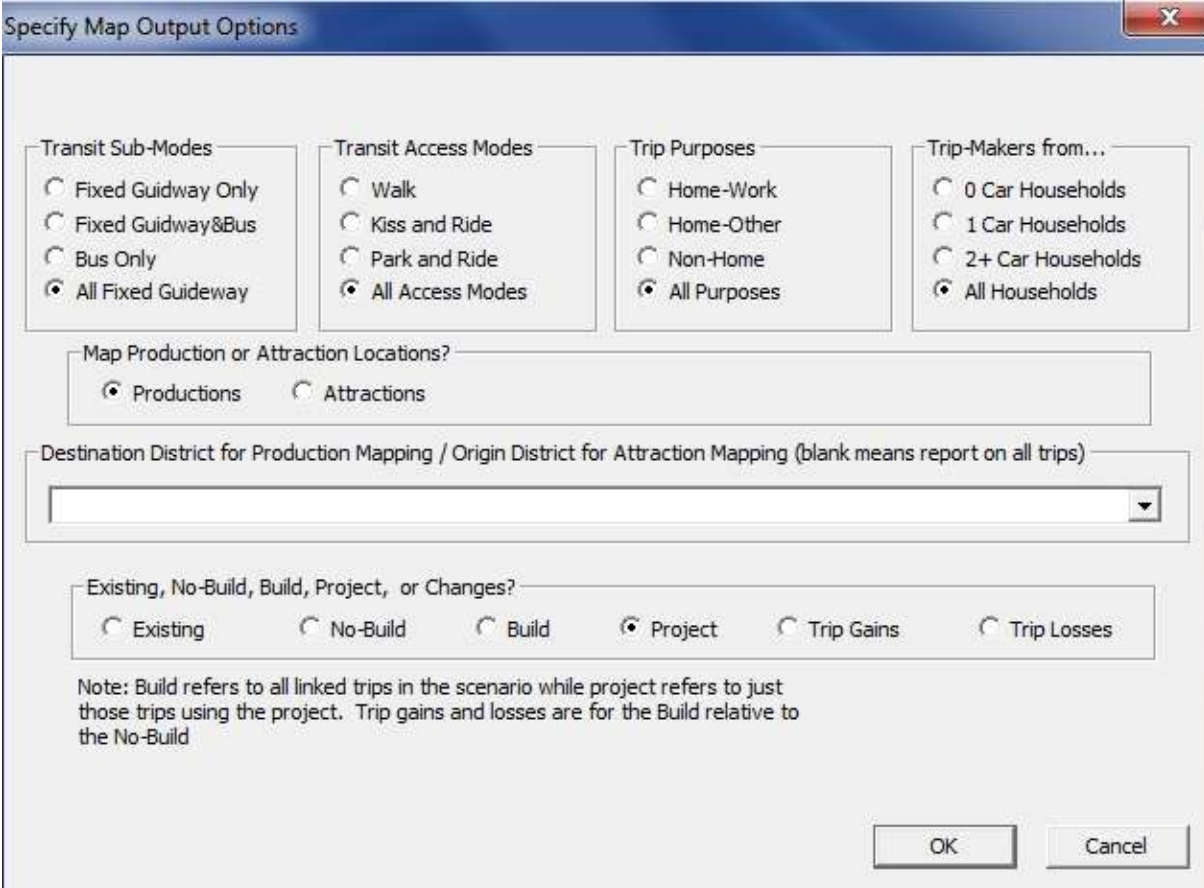
Idist	West	Sunri	Tamar	Plant	Laude	Laude	Oakla	Wilto	Ft.La	North	South	Other	Total
West	3	34	33	29	38	18	43	31	8	33	33	0	302
Sunri	5	21	26	25	52	33	61	44	6	42	12	0	329
Tamar	14	22	40	15	47	22	53	47	3	37	19	0	318
Plant	20	40	36	20	94	38	88	66	1	126	11	0	540
Laude	4	32	19	21	19	15	41	51	3	12	23	0	240
Laude	5	22	11	11	13	7	39	23	1	24	10	0	166
Oakla	4	37	36	26	32	37	44	43	2	21	26	0	309
Wilto	10	38	37	23	32	30	42	39	2	32	21	0	306
Ft.La	1	4	6	2	1	2	3	3	0	0	0	0	22
North	6	57	38	38	12	41	56	58	1	0	19	0	328
South	5	15	27	15	42	28	45	30	0	20	2	0	229
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	79	322	309	226	382	272	515	435	26	348	176	0	3089

Table 4.03
*** WEEKDAY LINKED TRANSIT TRIPS ON PROJECT (All Transit/All car HH) ***
District to District MODEL Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

Idist	West	Sunri	Tamar	Plant	Laude	Laude	Oakla	Wilto	Ft.La	North	South	Other	Total
West	7	89	93	86	89	39	101	68	16	73	81	0	743
Sunri	12	51	60	60	120	60	133	87	13	93	23	0	714
Tamar	37	46	118	40	119	60	130	101	6	85	37	0	779
Plant	52	115	94	60	257	106	252	178	1	328	21	0	1465
Laude	7	67	35	55	45	27	83	117	6	25	55	0	521
Laude	12	53	30	24	29	12	112	51	0	55	16	0	395
Oakla	8	79	71	55	65	81	97	83	0	42	50	0	632
Wilto	21	82	77	49	71	70	89	76	0	72	44	0	652
Ft.La	2	11	13	2	0	1	2	0	0	0	0	0	32
North	13	130	81	87	26	96	126	126	4	1	39	0	729
South	11	34	55	29	99	65	87	62	0	43	6	0	491
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	183	758	730	546	921	616	1210	952	47	817	373	0	7152

Step 13: Map STOPS Results

- Automatically creates a dot-density plot of trips in GIS/Transcad based on options selected



The dialog box titled "Specify Map Output Options" contains several sections for configuring map output. It includes four groups of radio buttons for Transit Sub-Modes, Transit Access Modes, Trip Purposes, and Trip-Makers from... It also has a section for Map Production or Attraction Locations, a dropdown for Destination District, and a section for Existing, No-Build, Build, Project, or Changes. A note at the bottom explains the Build and Project options. OK and Cancel buttons are at the bottom right.

Specify Map Output Options

Transit Sub-Modes

- ☐ Fixed Guidway Only
- ☐ Fixed Guidway&Bus
- ☐ Bus Only
- ☒ All Fixed Guideway

Transit Access Modes

- ☐ Walk
- ☐ Kiss and Ride
- ☐ Park and Ride
- ☒ All Access Modes

Trip Purposes

- ☐ Home-Work
- ☐ Home-Other
- ☐ Non-Home
- ☒ All Purposes

Trip-Makers from...

- ☐ 0 Car Households
- ☐ 1 Car Households
- ☐ 2+ Car Households
- ☒ All Households

Map Production or Attraction Locations?

- ☒ Productions
- ☐ Attractions

Destination District for Production Mapping / Origin District for Attraction Mapping (blank means report on all trips)

Existing, No-Build, Build, Project, or Changes?

- ☐ Existing
- ☐ No-Build
- ☐ Build
- ☒ Project
- ☐ Trip Gains
- ☐ Trip Losses

Note: Build refers to all linked trips in the scenario while project refers to just those trips using the project. Trip gains and losses are for the Build relative to the No-Build

OK Cancel

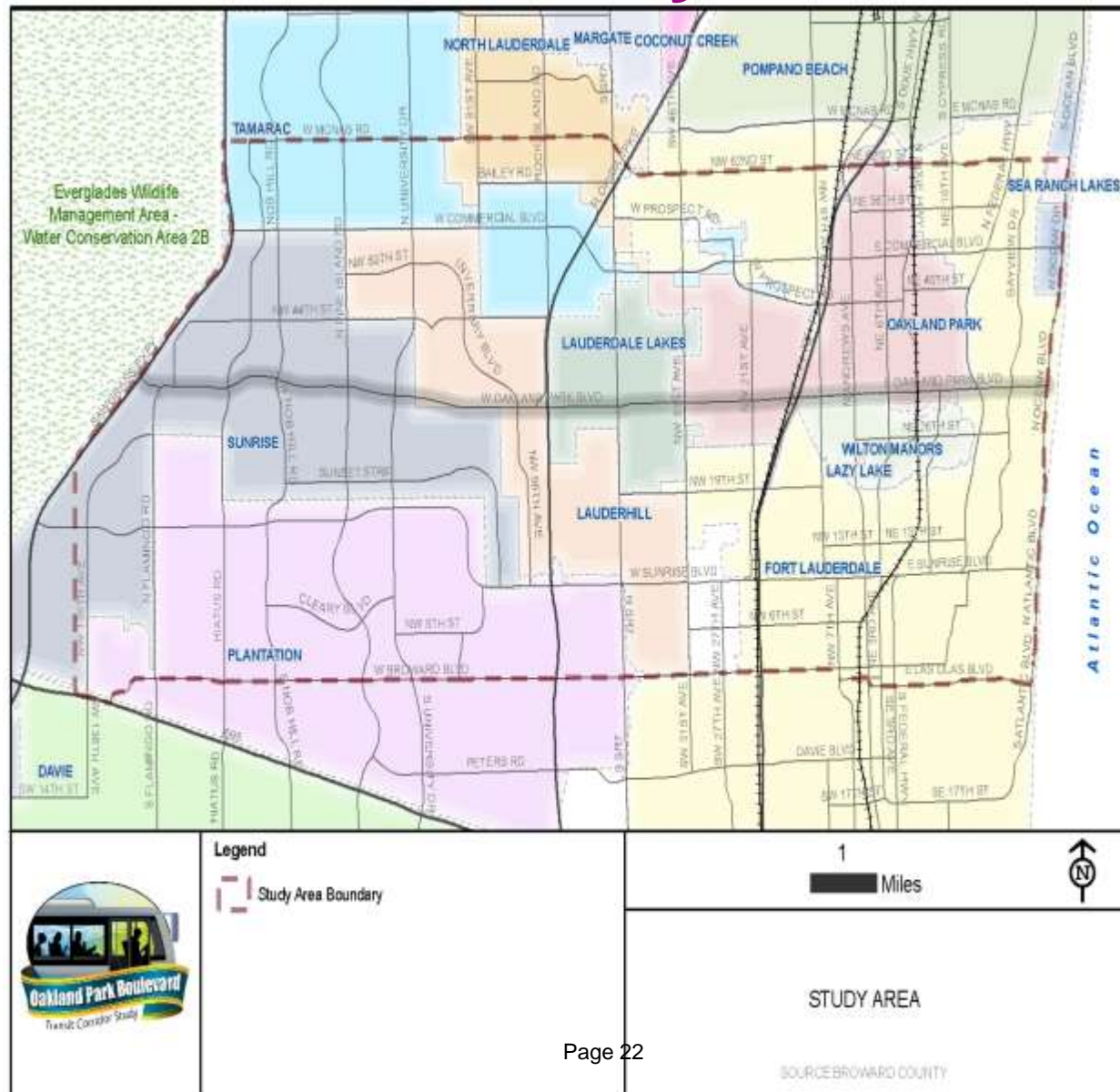
Applications in Southeast Florida

- Two known applications in Florida, both in Southeast Florida:
 - Oakland Park BRT (for Beta-Testing the pre-released version of STOPS)
 - Tri-Rail Coastal Link (TRCL)

Oakland Park BRT: Setup

- Alternatives result from multi-modal AA in District 4
- Existing conditions
 - 13.6 mi, 6 LD arterial roadway; 50,000-65,000 AADT
 - Route 72: 9,000 daily boardings; 15-20 min headways
- Key alternative
 - Bus Rapid Transit operating in Business Access and Transit (BAT) lane; 15 min headway
 - Local service continues to operate
- STOPS inputs/parameters
 - Broward County Transit's GTFS data
 - Auto skims from SERPM 6.7.1
 - 2000 and 2010 MPO ZDATA
 - Visibility factor = 0.0-0.2
 - System-wide and corridor-focused transit on-board surveys

Oakland Park BRT: Study Area



Oakland Park BRT: Trips on Project

- STOPS → 7,150 project linked trips in current year
- Compared to two other independent forecasts
 - SERPM 6.7.1: updated to adequately reflect local bus corridor travel patterns
 - Data-driven/Simplified model: based on route-specific transit survey data

	STOPS (Pre-released version)	Data-Driven/Simplified Model (SFSTM)	SERPM 6.7.1
Project trips	6,500-7,200	3,900	3,600
Work vs. non-work split	56% vs. 44%	n/a	50% vs. 50%
0-car vs. 1+-car split	34% vs. 66%	n/a	54% vs. 46%
Walk-/drive-access split	91% vs. 9%	90% vs. 10%	94% vs. 6%

Oakland Park BRT: Findings

- STOPS forecasts are much higher than other two methods, probably a result of the underlying local service and the nature of the corridor
- Trip purpose and access mode results very comparable

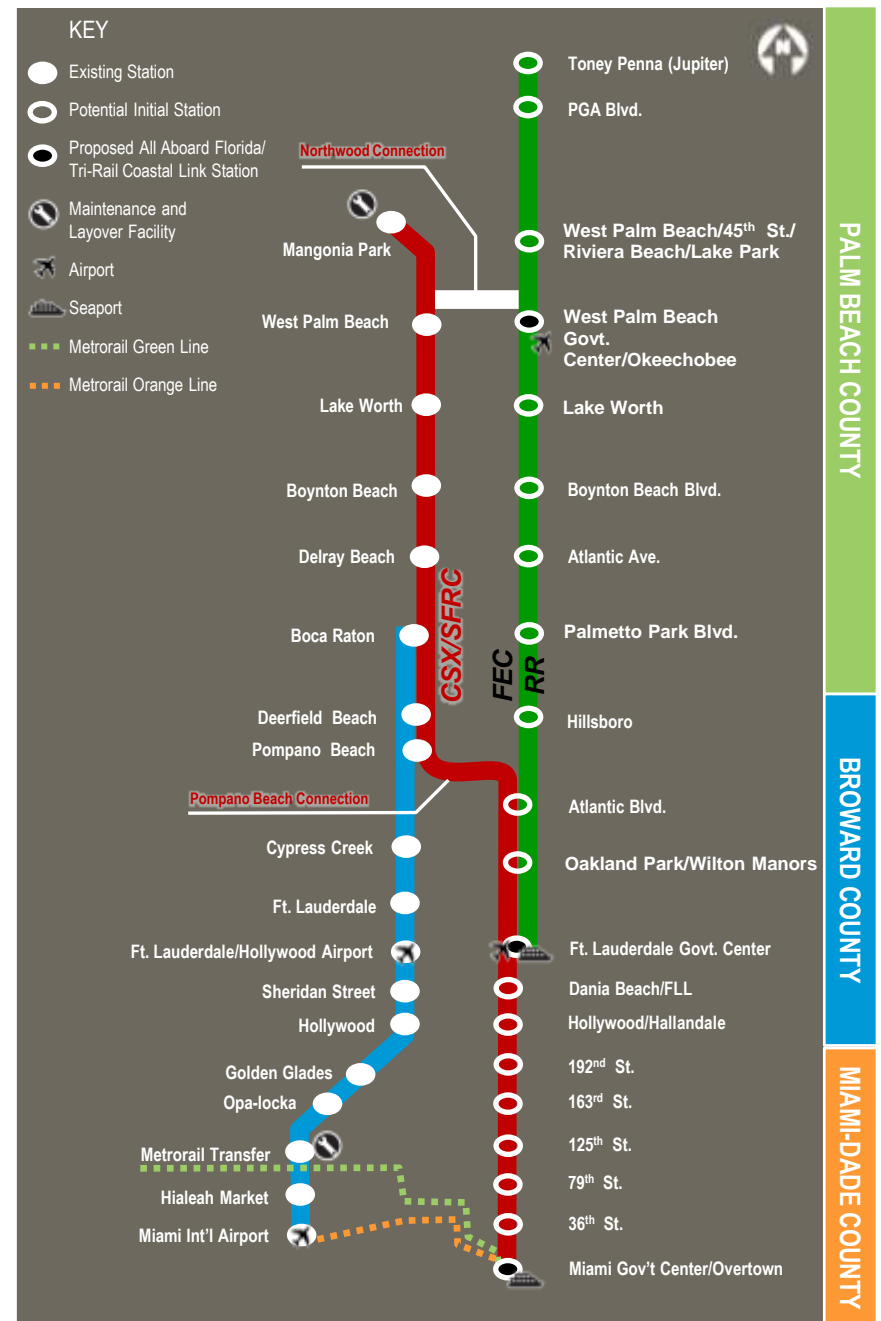
Tri-Rail Coastal Link: Setup

- Extension to existing Tri-Rail service
- Result of Systems Planning Study in District 4
- Existing conditions
 - 85-mile corridor
 - I-95 AADT ranges from ~150,000 to 300,000
 - Local bus, express bus and Tri-Rail in corridor today: ~60,000 boardings
- Build Alternative modeled
 - 20-station extension
- STOPS inputs/parameters
 - GTFS data from the region's 4 transit agencies
 - Auto skims from SERPM 6.7.2
 - 2010 and 2040 MPO ZDATA
 - Visibility factor = 0.5



Existing
Tri-Rail
system
←

Modeled
TRCL
system
→



Tri-Rail Coastal Link: Forecasting Approach

- Local travel model is used for primary forecasts (SERPM 6.7.2)
 - Calibrated to local conditions and Tri-Rail's unique travel markets
- STOPS used to develop auxiliary set of forecasts and assist addressing uncertainty

Tri-Rail Coastal Link: Trips on Project

'Current' Year (2013)

	STOPS (Version 1.02)	SERPM 6.7.2
Project trips	13,100	12,400
Work vs. non-work split	40% vs. 60%	61% vs. 39%
0-car vs. 1+-car split	36% vs. 64%	25% vs. 75%
Walk-/drive-access split	60% vs. 40%	40% vs. 60%

Horizon Year (2040)

	STOPS (Version 1.02)	SERPM 6.7.2
Project trips	16,300	19,600
Work vs. non-work split	38% vs. 62%	68% vs. 32%
0-car vs. 1+-car split	36% vs. 64%	21% vs. 79%
Walk-/drive-access split	59% vs. 41%	37% vs. 63%

Tri-Rail Coastal Link: Trips on Project (2)

	STOPS	SERPM 6.7.2	Relative Difference
'Current' Year (2013)	13,100	12,400	+ 7%
Opening Year (2020)	13,900	13,650	+ 2%
Horizon Year (2040)	16,300	19,550	- 17%

Tri-Rail Coastal Link: Key Findings

- STOPS produced aggregate ridership figures similar to local travel models
 - However, local models appear to produce more intuitive results for sub-markets (e.g., walk-access, transit dependents)

Useful Links

- Software, User Guide, Example Application
http://www.fta.dot.gov/grants/15682_15620.html
- Census boundary and CTPP files
http://www.fta.dot.gov/grants/15682_15621.html
- GTFS files
<https://code.google.com/p/googletransitdatafeed/wiki/PublicFeeds>
- Visualizing GTFS feed (download the most recent version of "Prebuilt Windows versions of FeedValidator, ScheduleViewer, and other tools")
<https://code.google.com/p/googletransitdatafeed/downloads/list>