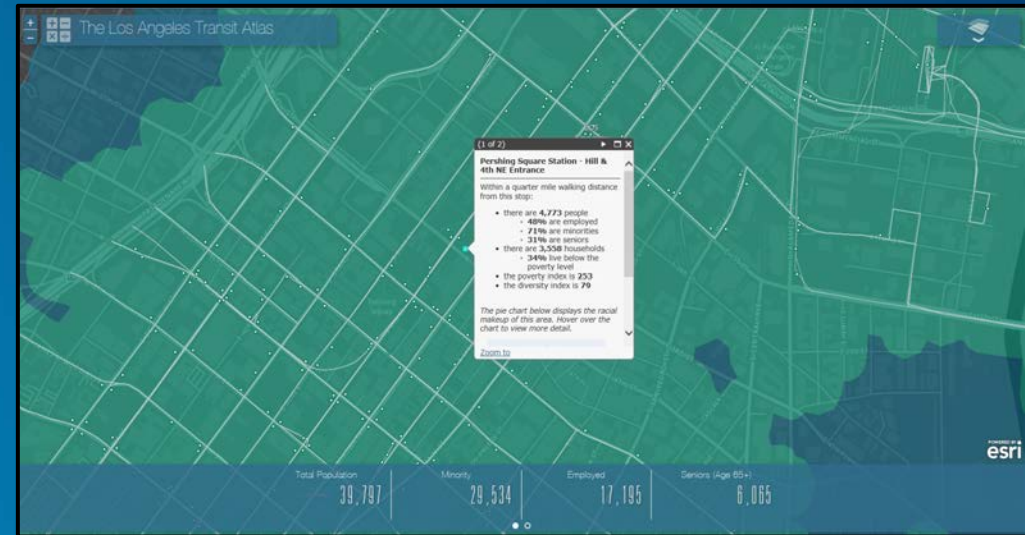
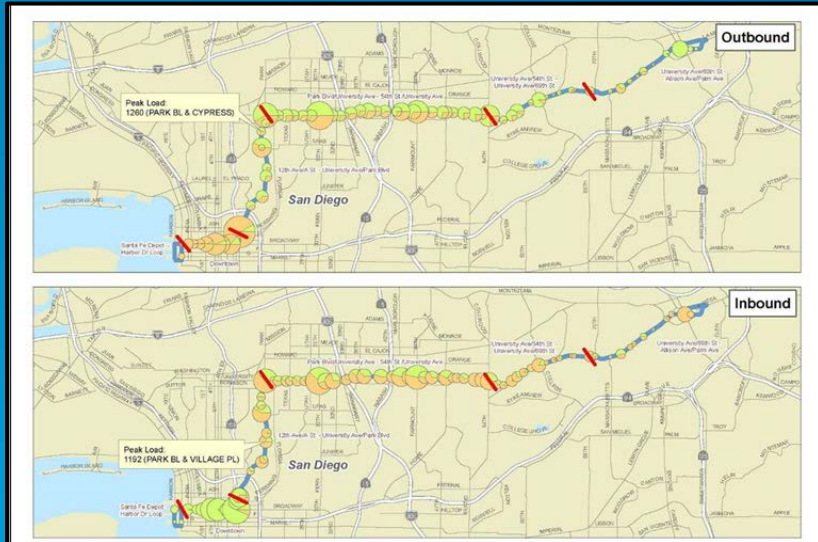




Esri Public Transport Webinar Series

Effective Transit Route and Stop Planning with TBEST

Effective Transit Route and Stop Planning with TBEST



Terry Bills, Esri

Rodney Bunner, ServiceEdge Solutions

Smart Cities Challenge

Requires Solving our Transportation and Mobility Issues



Key Public Transport Challenges:

- **How to Think Differently / How to Design More Effective Service in Response to Rapidly Changing Mobility**
- **New Data Sources**
- **Better Coordination Across Modes**
- **Better Design of Our Cities: Breaking Down the Silos**
- **Sustainability**

Key Public Transport Challenges:

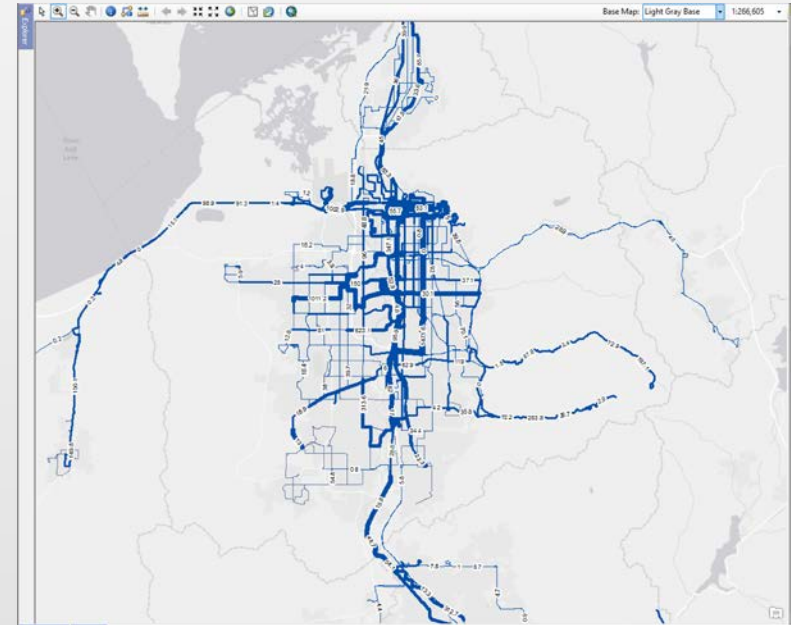
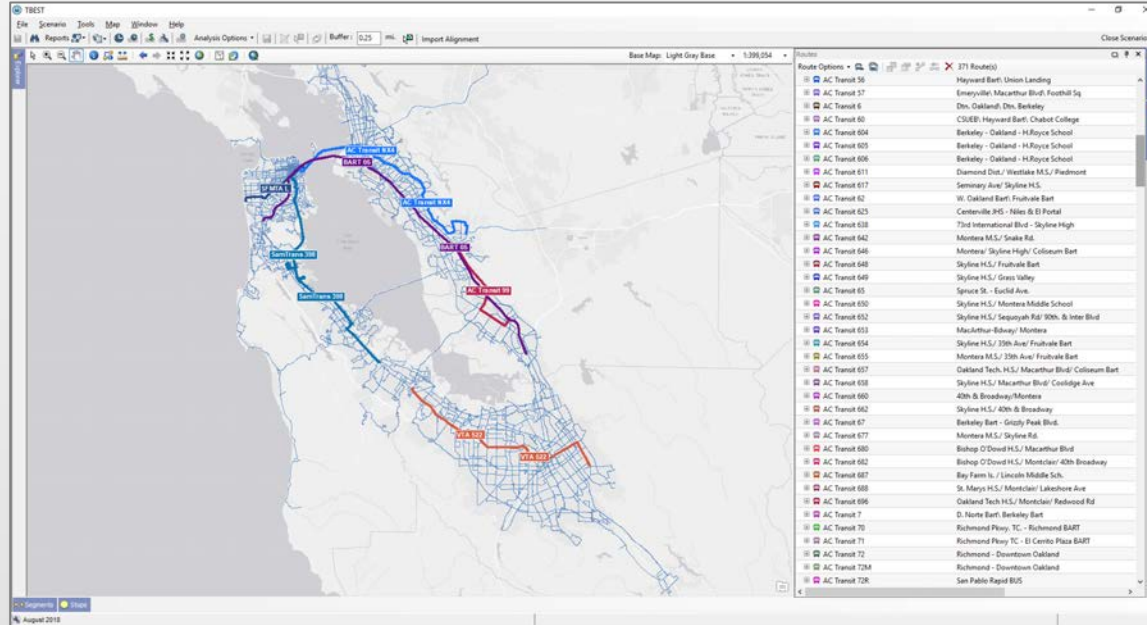
How to Provide Optimal Service at the Most Efficient Cost

High Levels of Customer Service (On-Time Performance, Meeting Customer Needs)

Maximizing Ridership, Accessibility, Equity

All with the Lowest Passenger Subsidy

TBEST FOR TRANSIT PLANNING



Terry Bills, Esri Global Transportation Industry Manager

Rodney Bunner, Manager, ServiceEdge Solutions



TBEST DEVELOPMENT TEAM

Public Sponsorship



**Research-based
Methodologies**



**Software Development,
Implementation and
Technical Support**



INTRODUCTION

What is TBEST?

Software tool providing transit data analytics and insights to support Transit Service Planning and Strategic Transportation Planning initiatives

What are the core TBEST features?

- Transit Demand Estimation
- Market Analysis
- Transit Operational Analysis
- Equity Analysis
- Accessibility Analysis
- Jurisdictional Analysis

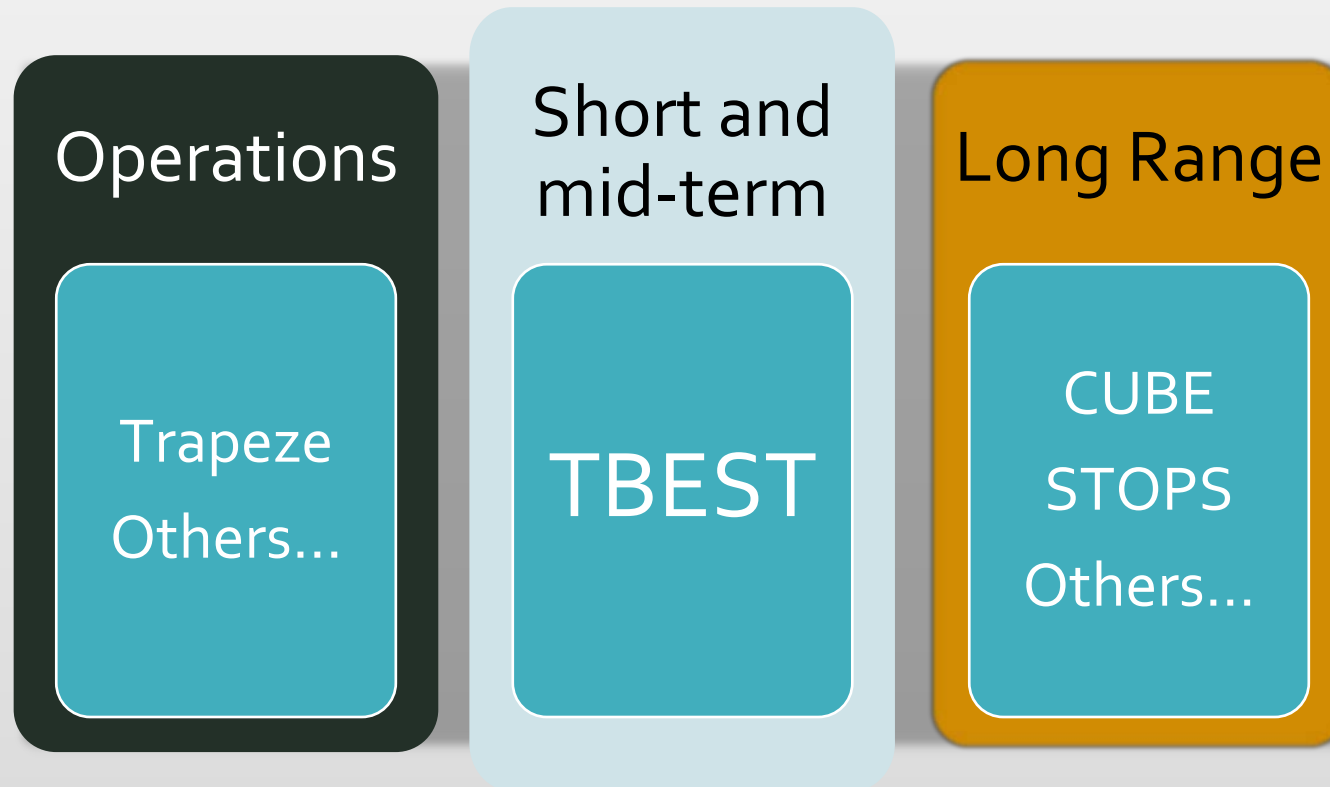
Who Maintains TBEST?

- FDOT manages TBEST development and provides TBEST data products for all Florida agencies
- Agencies outside of Florida are welcome to utilize TBEST
- Software download on the TBEST website (www.tbest.org)



WHY TBEST?

Transit Planning Software Gap



TBEST – SOFTWARE OBJECTIVES

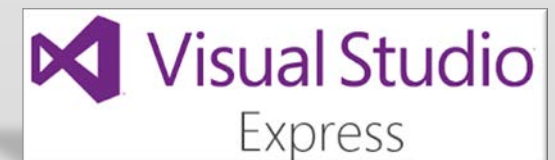
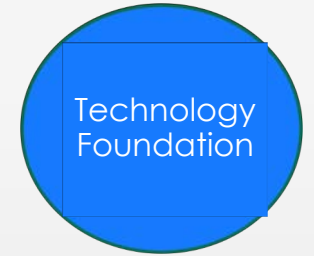
- 1 **Data Integration** – national, regional and local data
- 2 **Agency Policies** – embed local policies and operating conditions
- 3 **Transit Focus** - address transit-specific planning issues
- 4 **Scenario Planning** - quickly build transit service alternatives
- 5 **Efficiency** - consistent, streamlined and repeatable analysis workflows
- 6 **Communication** – dashboards, maps, tables, charts -> **decision-makers**
- 7 **Cost Effective** - free software; documentation and training videos provided; internal agency toolset

TBEST TRANSIT PLANNING SUPPORT

- Transit Development Plans
- Route Optimization Studies
- Operational Analysis (COA's)
- Regional Modeling
- BRT Modeling
- Title VI Triennial Reports
- Title VI Disparate Analysis
- Grant Applications
- Corridor Analysis

TBEST FRAMEWORK TECHNOLOGY

- Standalone desktop software with embedded ESRI technology
- Requires ArcGIS to be locally installed (Basic license-level)
- Compatible with ArcGIS versions 10.2 to 10.6.1 (not 10.6)
- Microsoft SQL Server LocalDB (installed with TBEST)
- Microsoft Visual Studio Express (optional model scripting)



GTFS NETWORK INTEGRATION

Network

GTFS Network Import Tool

- **Import** GTFS routes and service into TBEST scenarios
- Input GTFS data can be for **base year** service or **proposed** service
- Select representative Weekday, Saturday and Sunday service days
- With minimal review, the GTFS network is ready for TBEST modeling and analysis
- Add APC stop-level ridership data for TBEST application (stop_ridership.txt)

Source GTFS Zip File: C:\Projects\BayArea\ACTransit\gtfs.zip

Select GTFS Service Periods to define input Transit Routes and Service Levels

Weekday 08/17/2018 Date Saturday 08/18/2018 Date Sunday 08/19/2018 Date

1808FA-D2-Weekday-03
1808FA-D2-Weekday-03-SDOKon-110
1808FA-D2-Weekday-03-SDon-000010
1808FA-D2-Weekday-03-SDon
1808FA-D2-Weekday-03-SDOKon

1808FA-D2-Sunday-01-1
1808FA-D2-Saturday-01
1808FA-D3-Saturday-01
1808FA-D4-Sunday-01-1
1808FA-D4-Saturday-01
1808FA-D6-Sunday-51-1

1808FA-D2-Sunday-01
1808FA-D3-Sunday-02
1808FA-D4-Sunday-01
1808FA-D4-Weekday-01-1
1808FA-D6-Sunday-51
1808FA-D6-Weekday-01-1

Import Options...

Import	GTFS Route	Trips(WD)	Trips(Sat)	Trips(Sun)	Action	Replace TBEST Routes
<input checked="" type="checkbox"/>	1-San Leandro Bart\ Dtn. Oakland	239	218	217	Insert as a New Route	...
<input checked="" type="checkbox"/>	10-San Leandro Bart\ Hayward Bart	143	110	110	Insert as a New Route	...
<input checked="" type="checkbox"/>	12-Dtn. Oakland\ Dtn. Berkeley\ Gilman St.	98	70	70	Insert as a New Route	...
<input checked="" type="checkbox"/>	14-W. Oakland Bart\ Fruitval Bart	126	65	65	Insert as a New Route	...
<input checked="" type="checkbox"/>	18-San Pablo & Monroe\ Berkeley\ Merritt Bart	131	106	107	Insert as a New Route	...
<input checked="" type="checkbox"/>	19-Dtn. Oakland\ Fruitvale Bart	80	66	66	Insert as a New Route	...
<input checked="" type="checkbox"/>	20-Fruitvale Ave\ Alameda\ 11th M.L.K. Jr Wy	76	76	76	Insert as a New Route	...
<input checked="" type="checkbox"/>	200-Union City BART-Newpark Mall-Fremont ...	74	70	70	Insert as a New Route	...
<input checked="" type="checkbox"/>	21-Fruitvale Ave\ Alameda\ Oakland Airport	63	58	58	Insert as a New Route	...
<input checked="" type="checkbox"/>	210-Union Landing - Fmt. Blvd. - Ohlone	69	52	52	Insert as a New Route	...
<input checked="" type="checkbox"/>	212-Fremont BART-Newpark Mall-Pacific Co...	72	70	54	Insert as a New Route	...
<input checked="" type="checkbox"/>	215-Fremont BART-Mission-Warm Springs-In...	30	0	0	Insert as a New Route	...
<input checked="" type="checkbox"/>	216-U.C. BART-Niles-Fremont BART-Ohlone ...	29	26	26	Insert as a New Route	...
<input checked="" type="checkbox"/>	217-Fmt BART - Mission - Milpitas - Alder	65	60	60	Insert as a New Route	...

Select All

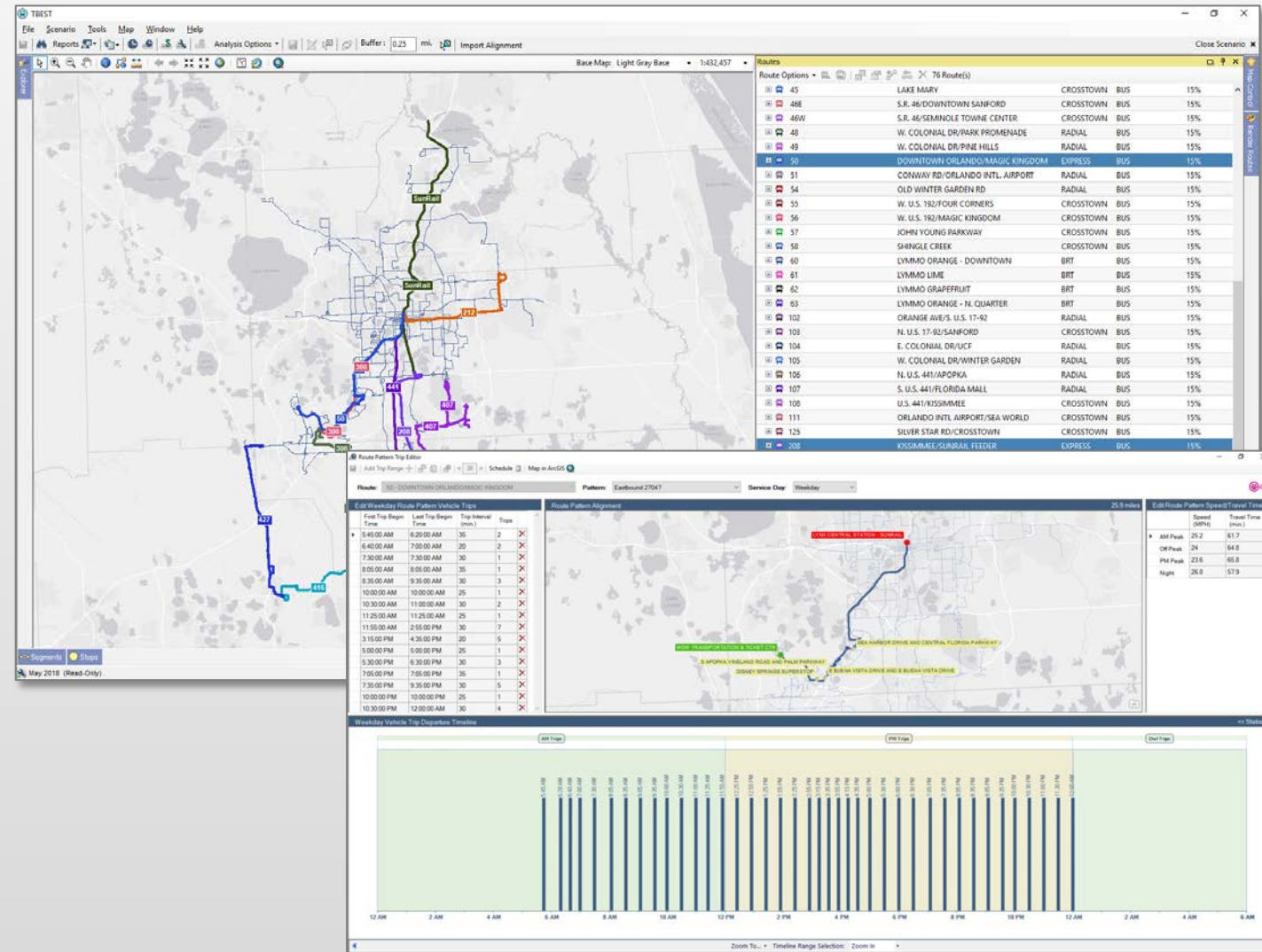
Exit Import

TBEST TRANSIT NETWORK EDITOR

Network

Construct Alternative Service Networks

- Service organized by Route
- Add/Edit/Remove Routes, Patterns, Segments and Stops
- Trip Editor to modify Vehicle Trips and Travel Times
- Assign Stop Amenities, Special Generators, Transfer Stations
- Intuitive, ArcGIS-based map editor components
- Configurable Base Map (AGOL & MXD)
- **Export TBEST** network to GTFS, shapefiles, KMZ, FGDB



TBEST Base Socio-Economic Data

Demographic

Census 2010 and ACS 5-Year

Employment

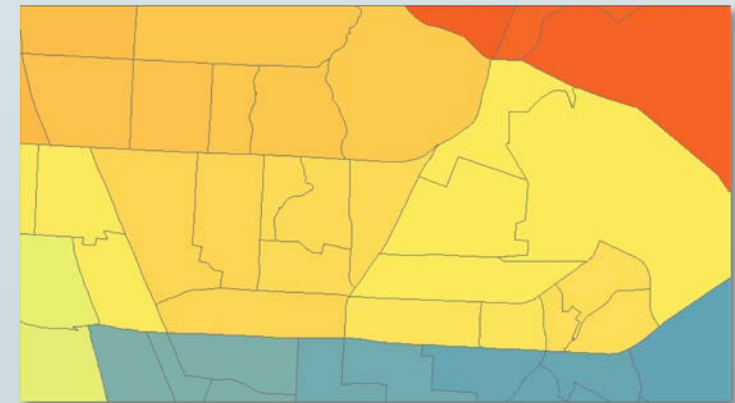
LEHD, Zonal or Address-Based

Parcel Land Use (optional)

Trip generation by land use type



Scenario - MPO Growth Projections



NATIONAL, REGIONAL, LOCAL AND COMMERCIAL

TBEST PARCEL EDITOR

Socio-Economic

Create Parcel Scenarios

- Edit parcels (add, move, delete)
- Edit land use distributions within a defined geography to reflect the planned land use mix (Transit Oriented Development)
- Option to auto-generate parcels based on specified parcel counts and building area by land use type

Parcel Distribution Editor

Land Use	Parcels	Dwelling Units	Population	Building Area (sq. ft.)	Land Area (sq. ft.)	Include
Residential - Vacant Residential	416	0	0.0	0	6,435,571	<input checked="" type="checkbox"/>
Residential - Single Family	2,368	2,443	5,272.2	5,498,296	28,734,959	<input checked="" type="checkbox"/>
Residential - Retirement Homes	0	0	0.0	0	0	<input type="checkbox"/>
Residential - Multi-family >= 10 units	2	599	1,419.8	675,528	1,879,283	<input checked="" type="checkbox"/>
Residential - Multi-family < 10 units	1	2	7.0	1,031	11,340	<input checked="" type="checkbox"/>
Residential - Mobile Home	314	366	661.0	385,365	2,150,343	<input checked="" type="checkbox"/>
Residential - Miscellaneous Residential	3	0	0.0	0	54,278	<input checked="" type="checkbox"/>
Residential - Cooperatives	0	0	0.0	0	0	<input type="checkbox"/>
Residential - Condominiums	0	0	0.0	0	0	<input type="checkbox"/>
Miscellaneous - Wellfields	0	0	0.0	0	0	<input type="checkbox"/>
Miscellaneous - Utilities	1	0	0.0	679	99,522	<input checked="" type="checkbox"/>
Miscellaneous - Subsurface Rights	0	0	0.0	0	0	<input type="checkbox"/>
Miscellaneous - ROW	14	0	0.0	0	1,667,377	<input checked="" type="checkbox"/>
Miscellaneous - Rivers and Lakes	11	0	0.0	0	1,641,605	<input checked="" type="checkbox"/>
Miscellaneous - Reclaimed Areas	5	0	0.0	0	287,795	<input checked="" type="checkbox"/>
Miscellaneous - Mining	0	0	0.0	0	0	<input type="checkbox"/>
System Parcel Distribution Totals	3,299	3,416	7,381	7,142,952	56,976,189	
System Percent Modified	-0.2 %	-0.2 %	-0.3 %	-0.2 %	0.0 %	

TBEST RIDERSHIP ESTIMATION

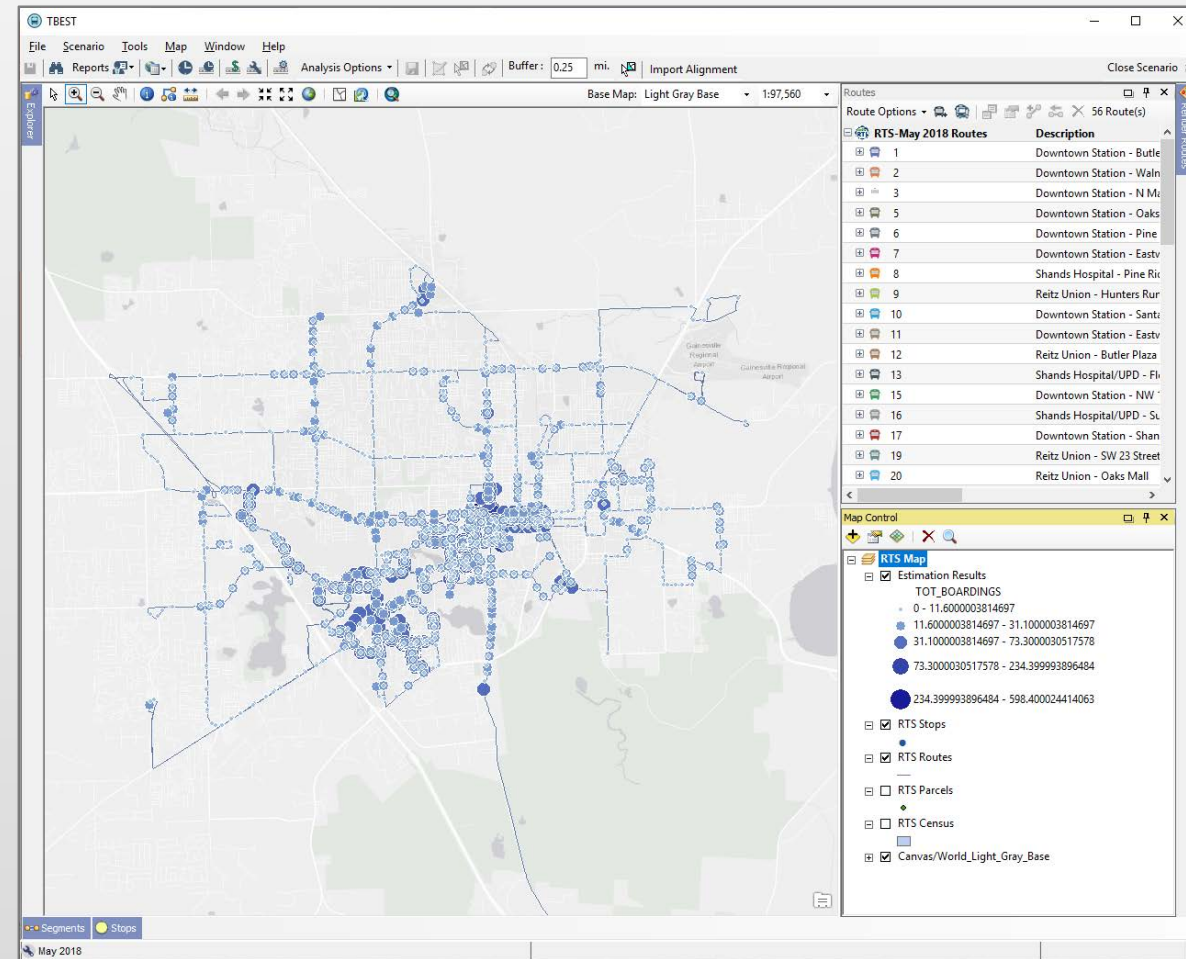
Estimation Model

TBEST Stop-Level Ridership Estimation Model responds to:

- service-level adjustments
- route re-structuring
- fare changes
- transfers
- walk markets
- destination markets
- BRT Characteristic Scoring

Model Validation Tools

TBEST creates adjustment factors to apply to scenario alternatives

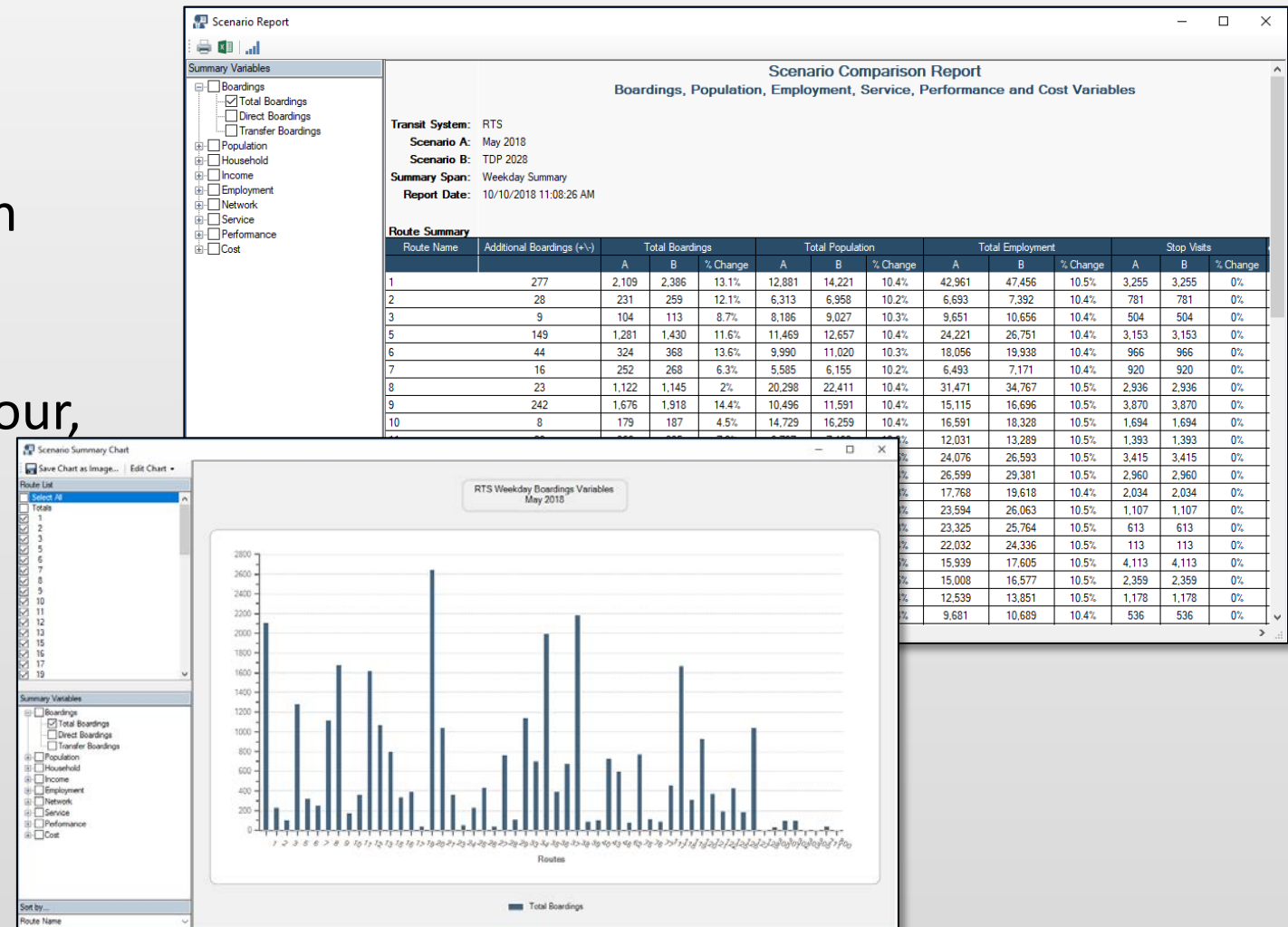


TBEST SERVICE AND PERFORMANCE

Performance

Compare Base Conditions with Scenario Alternatives:

- Route and System Comparison
- Direct and Transfer Boardings
- Boardings per Service Mile, Hour, Trip
- Service Levels
- Route Cost
- Fleet Estimates

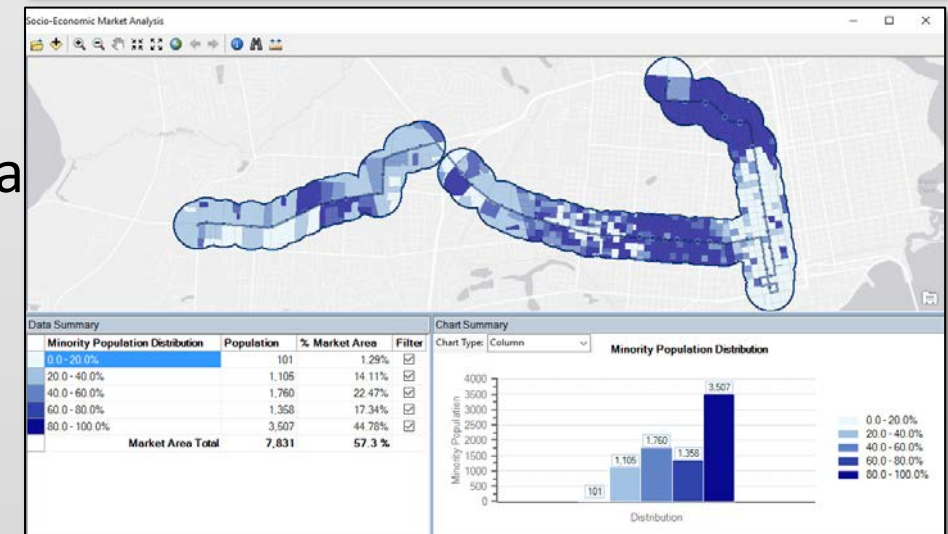
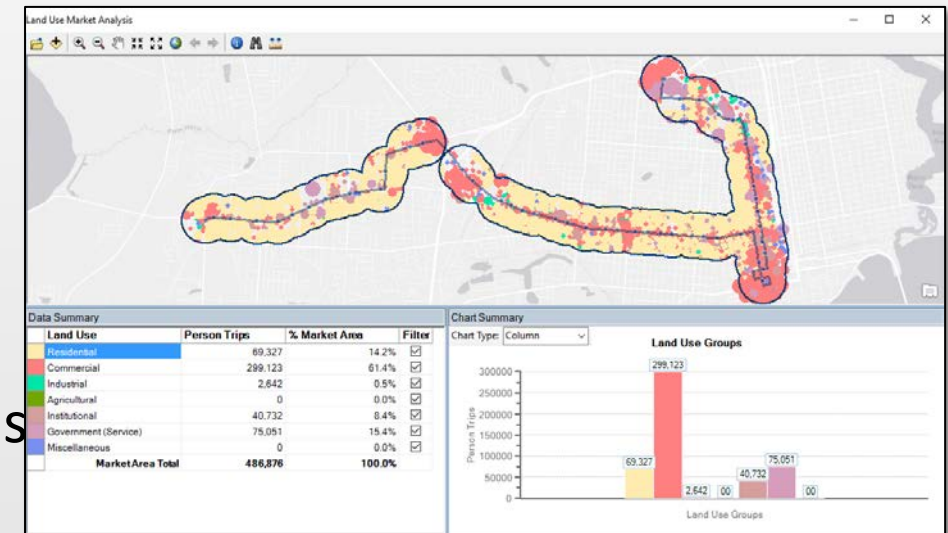


TBEST MARKET ANALYSIS

Markets

Walk Market

- Define: Stops + Segments + Patterns + Routes + User Geography
- Summarize socio-economic market distributions
- Land Use trip potential per parcel (ITE Trip Generation)
- **Compare** across scenarios and with service area totals (x% of service area population within ½ mile of park-n-ride stops)

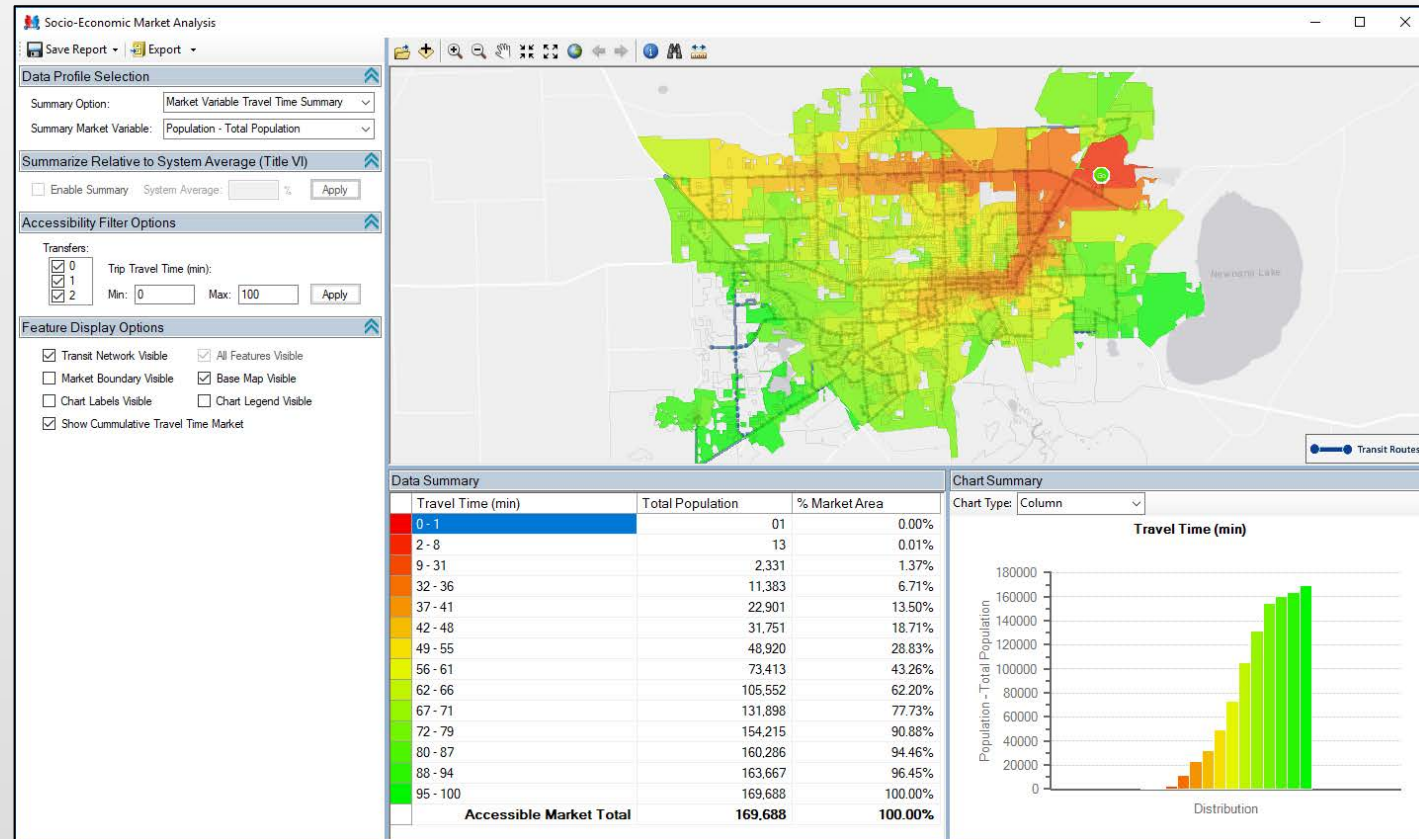


TBEST MARKET ANALYSIS

Markets

Network Accessible Markets

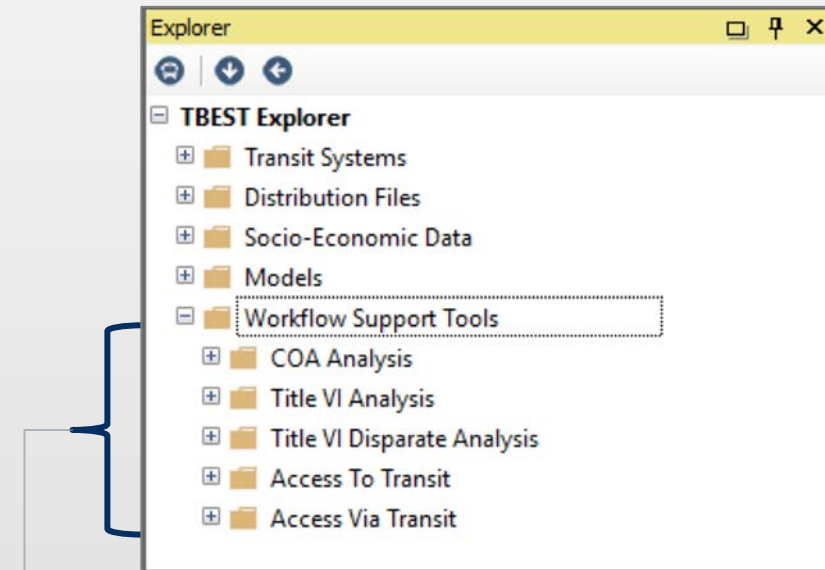
- Define Networking Parameters
- Define Accessibility to/from:
 - Single Stop
 - Multiple Stops
 - Corridor, Activity Center, CBD, or any input geography
- Summarize Accessible Markets via Transit Travel Time + Walk Time + Number of Transfers



TBEST WORKFLOW SUPPORT TOOLS

Workflow Support Tools Folder

- Wizard-driven tools to streamline common agency tasks
- Input scenario networks and task specific parameters
- User can run multiple analysis with varied networks/parameters and store as result sets
- **Compare** results



TBEST Explorer – Workflow Support Tools

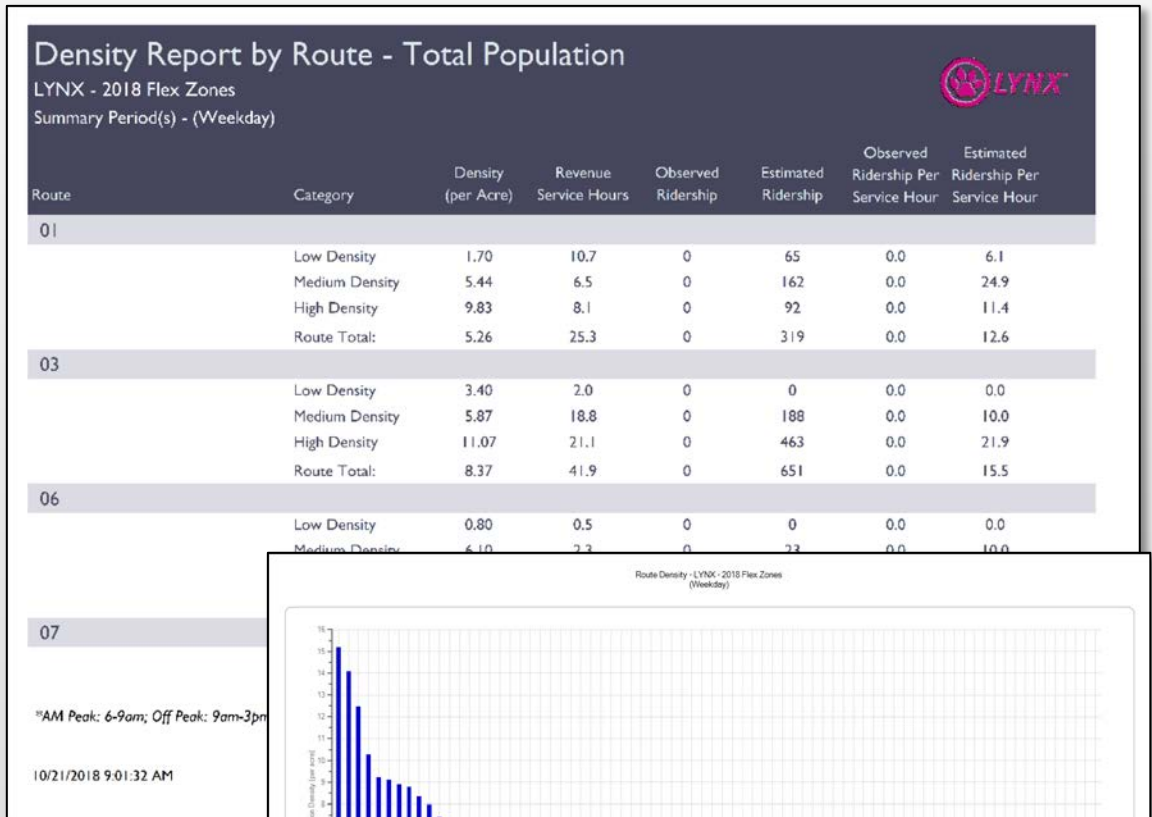
TBEST OPERATIONAL ANALYSIS

Performance

COA Analysis

Density Service and Performance

- **Route Performance** by Socio-Economic Density (High, Medium and Low)
- Groups Route Service by Density Areas
- Multiple socio-economic density variables
- Density by Jurisdiction (Municipalities, Flex Zones, Corridors, etc.)



TBEST OPERATIONAL ANALYSIS

COA Analysis


Jurisdictional Service and Performance

Summarize transit service and performance by user-defined input areas such as:

- Rural vs. Non-Rural (5311)
- Taxable Areas (Transit Funding Sources)
- Municipalities
- Corridors
- Counties
- Flex Zones

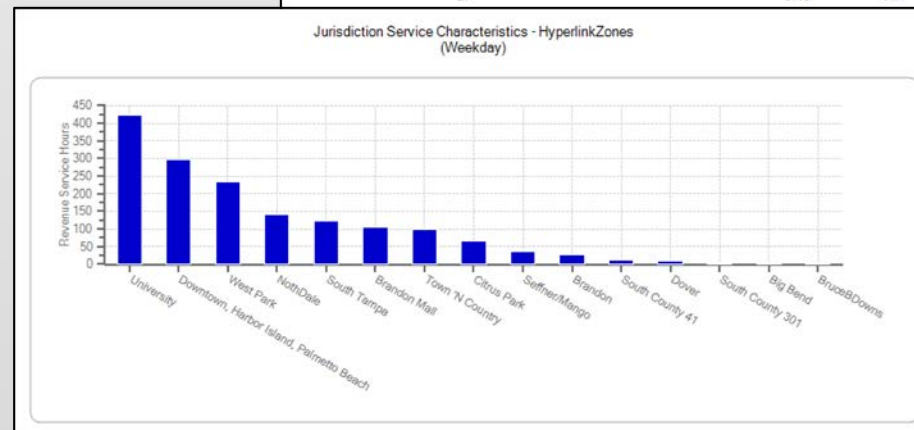
Jurisdictional Observed Performance Analysis (by Jurisdiction)

HyperlinkZones
Summary Period(s) - (Weekday)



Name	Route	Revenue Service Miles	Revenue Service Hours	Observed Ridership	Observed Ridership Per Service Mile	Observed Ridership Per Service Hour
Big Bend						
	53	71.9	3.6	18	0.2	5.0
	Jurisdiction Total:	71.9	3.6	18	0.2	5.0
Brandon						
	8	117.4	9.6	69	0.6	7.2
	24	68.9	2.9	67	1.0	23.0
	25	73.9	3.7	43	0.6	11.6
	27	50.2	2.5	22	0.4	8.7
	31	109.9	5.6	44	0.4	7.9
	53	46.2	2.4	10	0.2	4.0
	Jurisdiction Total:	466.5	26.7	255	0.5	9.5
Brandon Mall						
	8	353.4	28.9	490	1.4	17.0
	22	31.8	1.9	22	0.7	11.7
	24	62.9	2.6	0	0.0	0.0
	25	82.7	4.2	60	0.7	14.4
	27	37.6	1.9	19	0.5	9.9

Page 1 of 7

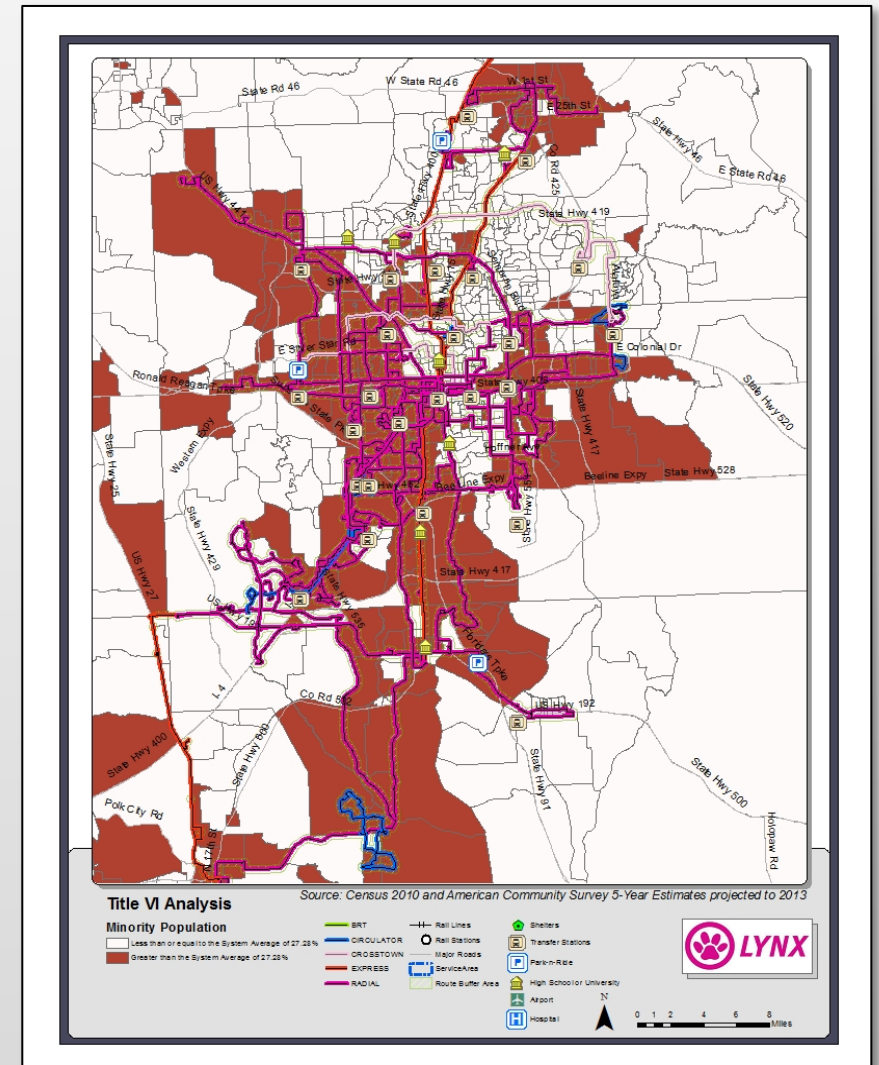


TBEST EQUITY MEASURES

Equity

Title VI Analysis Workflow Support Tool

- Intended for Triennial Reporting
- Calculates System % Disadvantaged Populations (Minority, Low Income, LEP)
- Route-level % Disadvantaged Populations
- Calculates Minority and Low Income Routes
- Minority and Low Income Revenue Miles and Stop Arrivals
- Reports and Maps styled based on FTA Circular guidance
- Comparison Reports to evaluate System, Route and Jurisdictional differences between scenario alternatives



TITLE VI DISPARATE ANALYSIS

Equity

Title VI Disparate Analysis Workflow Support Tool

- Directly compares service change between two TBEST scenarios
- Uses FTA 4/5ths rule or local Title VI policy
- Evaluates disparate impacts of major system service changes to minority and low income populations using “People Trips”
- Notifies that user of disparate impact

Title VI Disparate Analysis Categories

Minority Population

Weekday Impact	-5.9 %	✓
Saturday Impact	-30.2 %	⚠
Sunday Impact	3.9 %	✓
Total Annual Impact	-7.2 %	✓

Low Income Households

Weekday Impact	-4.3 %	✓
Saturday Impact	-52.3 %	⚠
Sunday Impact	-7.2 %	✓
Total Annual Impact	-4.6 %	✓

Input Settings

Analysis Name: Mission Max
Created: 12/13/2017 10:55 AM
Transit System: HART_TitleVI
Base Scenario: COA 2017
Service Change Scenario: Mission Max
Disparate Change Threshold: ✓ Disparate Analysis results are within the 20% Change Threshold
⚠ Disparate Analysis results are outside of the 20% Change Threshold. Further investigation is recommended.

Service Change Map Display Options

Weekday Saturday Sunday

Map Legend

Weekday Service Change

- Title VI Disparate Analysis
 - New Route Service
 - Existing Route Service
 - Service Increase Greater Than the System Average
 - Service Increase Less Than the System Average
 - No Service Change
 - Service Decrease
 - Service/Project Area
 - Canvas/World_Light_Gray_Base

HART

Save Report Export Map Close

TITLE VI DISPARATE ANALYSIS



Route Comparison Report

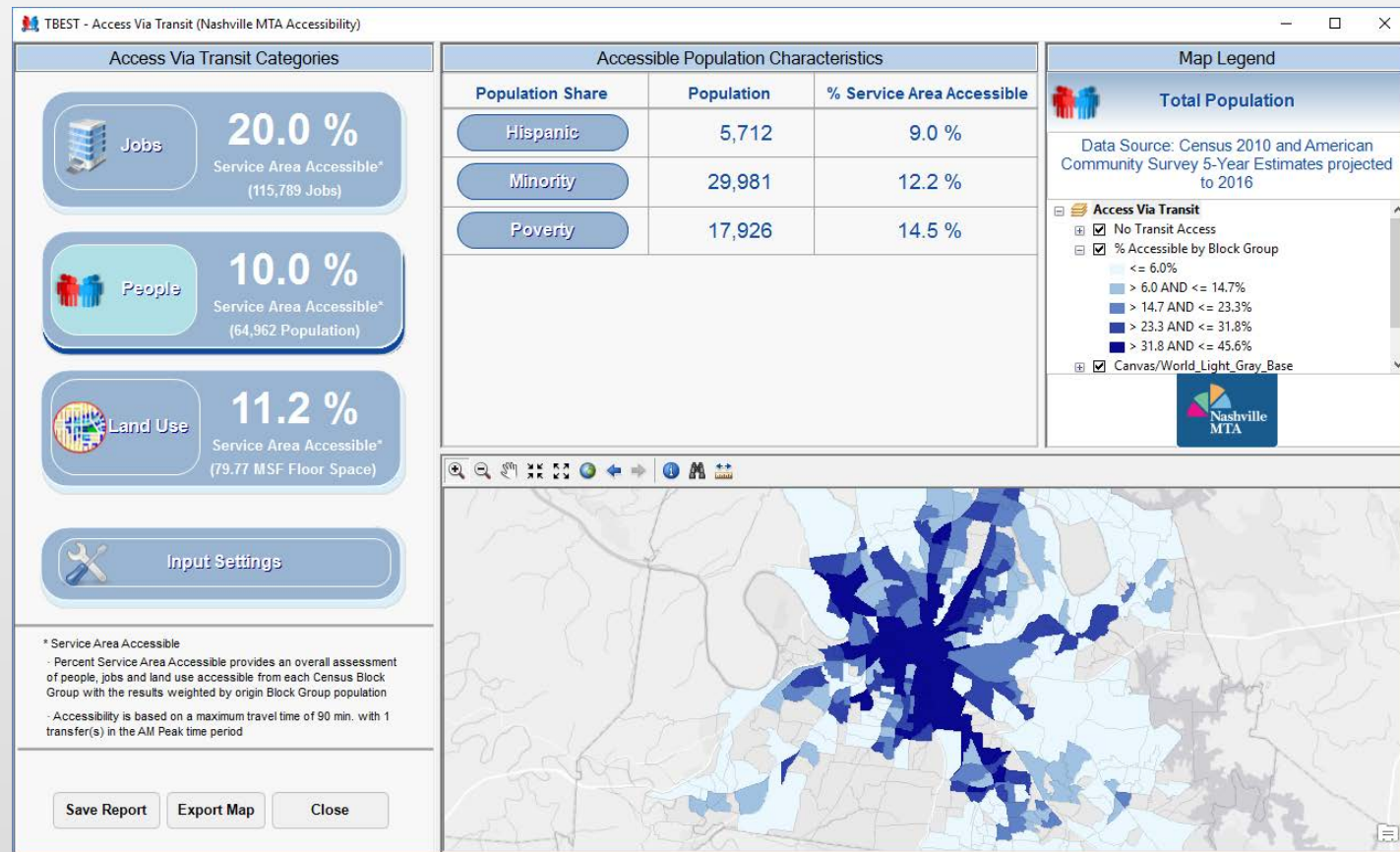
Title VI Disparate Analysis - Route-Level Comparison Report																					
Service and Minority Equity																					
Analysis Name: HART COA 2018 - Title VI Scenario A: COA 2017 Scenario B: COA 2018 GTFS System Percent Minority: 28.9% Disparate Impact: (>= 15%) Non-Disparate Impact: (< 15%) Report Date: 9/6/2017 3:02:00 PM Report Notes: Minority Burden is calculated by dividing the Scenario A and B Minority People Trips count difference by the Scenario A and B Population People Trips count difference Route-Level Minority Percent Disparate is calculated by subtracting the Route Minority Burden from the Scenario A Route-Level Percent Minority System-Level Minority Percent Disparate is calculated by subtracting the System Minority Burden from the System Percent Minority (28.9%)																					
Route Summary																					
Route	Service Change	Annual Service Trips			Total Population			Minority Population			Percent Minority			Population People Trips (mil)			Minority People Trips (mil)			Minority Burden	% Disparate
		A	B	% Change	A	B	% Change	A	B	% Change	A	B	% Change	A	B	% Change	A	B	% Change		
33		22,323	31,690	42%	47,014	41,620	-11.5%	16,180	15,162	-6.3%	34.4 %	36.4 %	2%	1,057.30	1,308.53	23.8%	361.19	480.50	33%	47.5 %	13.1 %
34		23,620	31,281	32.4%	82,770	82,770	0%	25,364	25,364	0%	30.6 %	30.6 %	0%	1,960.34	2,596.22	32.4%	599.10	793.42	32.4%	30.6 %	0.1 %
36		19,265	18,973	-1.5%	88,239	65,277	-26%	21,243	15,221	-28.3%	24.1 %	23.3 %	-0.8%	1,696.05	1,240.26	-26.9%	409.26	288.80	-29.4%	26.4 %	2.4 %
37		18,197	17,737	-2.5%	43,819	32,490	-25.9%	18,631	15,531	-16.6%	42.5 %	47.8 %	5.3%	764.05	574.09	-24.9%	339.04	275.47	-18.7%	33.5 %	9.1 %
38	New Route	NA	12,036	100%	NA	24,762	100%	NA	12,395	100%	NA	50.1 %	100%	NA	304.27	100%	NA	149.19	100%	NA	NA
39		23,530	23,933	1.7%	106,084	108,218	2%	33,550	35,811	6.7%	31.6 %	33.1 %	1.5%	2,496.77	2,606.52	4.4%	789.46	857.07	8.6%	61.6 %	30.0 %
41	Removed Route	7,714	NA	-100%	55,009	NA	-100%	25,326	NA	-100%	46.0 %	NA	-100%	425.97	NA	-100%	195.37	NA	-100%	NA	NA
42	New Route	NA	19,070	100%	NA	52,972	100%	NA	27,596	100%	NA	52.1 %	100%	NA	1,013.22	100%	NA	526.27	100%	NA	NA
45		20,264	19,918	-1.7%	78,036	38,679	-50.4%	24,603	10,032	-59.2%	31.5 %	25.9 %	-5.6%	1,576.62	775.55	-50.8%	498.58	199.82	-59.9%	37.3 %	5.8 %
46		7,244	12,472	72.2%	81,103	37,476	-53.8%	25,679	9,021	-64.9%	31.7 %	24.1 %	-7.6%	594.50	472.10	-20.6%	186.03	112.52	-39.5%	60.1 %	28.4 %
47	Removed Route	1,020	NA	-100%	47,515	NA	-100%	13,531	NA	-100%	28.5 %	NA	-100%	48.47	NA	-100%	13.80	NA	-100%	NA	NA
51		1,020	1,020	0%	11,530	7,128	-38.2%	3,650	2,378	-34.8%	31.7 %	33.4 %	1.7%	11.76	7.27	-38.2%	3.72	2.43	-34.8%	28.9 %	2.8 %
53	Removed Route	3,101	NA	-100%	84,375	NA	-100%	27,973	NA	-100%	33.2 %	NA	-100%	260.28	NA	-100%	86.76	NA	-100%	NA	NA
57	Removed Route	10,700	NA	-100%	70,535	NA	-100%	29,961	NA	-100%	42.5 %	NA	-100%	746.87	NA	-100%	320.61	NA	-100%	NA	NA
60	New Route	NA	27,095	100%	NA	5,723	100%	NA	2,034	100%	NA	35.5 %	100%	NA	205.12	100%	NA	55.11	100%	NA	NA
61	Removed Route	1,020	NA	-100%	50,325	NA	-100%	10,634	NA	-100%	21.1 %	NA	-100%	51.33	NA	-100%	10.85	NA	-100%	NA	NA
96		5,610	5,610	0%	13,597	16,201	19.2%	2,517	2,929	16.4%	18.5 %	18.1 %	-0.4%	76.28	90.89	19.2%	14.12	16.43	16.4%	15.8 %	2.7 %
97	New Route	NA	935	100%	NA	14,955	100%	NA	3,489	100%	NA	23.3 %	100%	NA	13.98	100%	NA	3.26	100%	NA	NA
200	Removed Route	2,550	NA	-100%	6,323	NA	-100%	1,868	NA	-100%	29.5 %	NA	-100%	16.12	NA	-100%	4.76	NA	-100%	NA	NA
360	New Route	NA	45,089	100%	NA	11,543	100%	NA	4,249	100%	NA	36.8 %	100%	NA	710.54	100%	NA	191.59	100%	NA	NA
400		26,437	50,085	89.5%	86,231	68,474	-20.6%	40,437	33,941	-16.1%	46.9 %	49.6 %	2.7%	2,216.56	3,443.07	55.3%	1,069.05	1,699.97	59%	51.4 %	4.5 %
TECO StreetCar		22,560	22,560	0%	19,212	19,212	0%	3,981	3,981	0%	20.7 %	20.7 %	0%	433.42	433.42	0%	89.81	89.81	0%	0.0 %	0.0 %
Totals		573,957	748,728	30.5%	2,401,867	1,509,470	-37.2%	866,684	552,597	-36.2%	36.1 %	36.6 %	0.5%	37,960.34	34,554.05	-9%	14,949.76	13,652.29	-8.7%	38.1 %	9.2 %

TBEST ACCESSIBILITY MEASURES

Accessibility

System Accessibility Workflow Support Tools

- Total System Accessibility
 - To Transit (Walk Access)
 - Via Transit (Network Access)
- Communicate Access to Jobs, People and Land Use...with a single number
- Comparative reporting between scenario accessibility summaries



EXAMPLE TBEST IMPLEMENTATION

LYNX - Orlando



- 1 Maintains an active, validated TBEST model for service and strategic planning
- 2 Developed TBEST tools for meeting regulatory compliance by measuring additional trips related to localized development
- 3 Developed grant application for SunRail Feeder service using TBEST ridership estimation
- 4 Supported recent TDP, COA and Route Optimization studies
- 5 LYNX FTA Title VI reporting policy includes TBEST as the methodology and output

OTHER AGENCY TBEST APPLICATIONS

***Most Florida Agencies**

Nashville WeGo

UTA (Salt Lake)

Foothill Transit

RVTD (Medford, OR)

GRTC (Richmond, VA)

PART (NC)

CET (Bend, OR)

HRT (Hampton Roads, VA)

Transfort (Ft. Collins)

GTA (Greensboro)

Long Beach Transit

Many others...

TBEST

AGENCY IMPLEMENTATION STEPS

- 1 **Installation** - install TBEST on local, in-house machines
- 2 **Socio-Economic Configuration (outside of Florida)** – utilize FDOT Guidance documents and templates to configure national, state, regional or local socio-economic data
- 3 **Validation** – develop base transit service and socio-economic conditions and validate TBEST ridership estimations with observed ridership
- 4 **Application** - planners develop alternative scenarios, maps, charts, reports to support specific projects including TDP development, service plans, grant applications, etc.
- 5 **Sharing** – TBEST data products are shared with other planners or the public via TBEST GIS data exports to ArcGIS or ArcGIS Online and/or GTFS exports.

TBEST RESOURCES

TBEST Website (www.tbest.org)

- ❑ Software Download
(http://tbest.org/downloads/?dl_cat=13)
- ❑ User Guide (http://tbest.org/downloads/?dl_cat=10)
- ❑ Video Tutorials
(<http://tbest.org/video/TBESTTrainingVideos.htm>)
- ❑ SE Data Config Guidance and Templates
(http://tbest.org/downloads/?dl_cat=12)
- ❑ Technical Assistance Contact Information

The screenshot shows the TBEST website homepage. At the top left is the FDOT TBEST logo with the tagline 'Transit Planning Software'. To the right is a navigation menu with links for HOME, FEATURES, DOWNLOADS, TRAINING, FORUM, and CONTACT US. The main content area has a blue background and features the text 'TBEST Transit Planning Software'. Below this text are three buttons: 'DOWNLOAD TBEST 4.5', 'DOWNLOAD TBEST USER GUIDE', and 'LAUNCH TRAINING VIDEOS'. To the right of these buttons is a circular diagram with 'TBEST Scenarios' in the center, surrounded by seven other nodes: COA, Ridership Estimation, Socio-Economic Market Analysis, Land Use Market Analysis, FTA Title VI Reporting, Network Accessibility Analysis, and Strategic Plan Analysis. At the bottom of the page, there is a paragraph of text describing the software and a 'LOGIN TO ACCESS SOFTWARE AND FORUMS' link.

FDOT TBEST
Transit Planning Software

HOME FEATURES DOWNLOADS TRAINING FORUM CONTACT US

TBEST Transit Planning Software

DOWNLOAD TBEST 4.5

DOWNLOAD TBEST USER GUIDE

LAUNCH TRAINING VIDEOS

COA

Ridership Estimation

Socio-Economic Market Analysis

Land Use Market Analysis

FTA Title VI Reporting

Network Accessibility Analysis

Strategic Plan Analysis

TBEST Scenarios

The Florida Department of Transportation Transit Office has been at the forefront in the development of state-of-the-art transit planning software tools. TBEST, or Transit Boardings Estimation and Simulation Tool, represents an effort to develop a multi-faceted GIS-based modeling, planning and analysis tool which integrates socio-economic, land use, and transit network data into a unique platform for

LOGIN TO ACCESS SOFTWARE AND FORUMS

TBEST CONTACTS

Rodney Bunner, ServiceEdge Solutions

Email: rodbunner@myserviceedge.com

Phone: (727) 455-4059

www.tbest.org

www.myserviceedge.com





esri®

THE
SCIENCE
OF
WHERE™