JOINT FLORIDA
Model Task Force & Transportation
Data and Analytics Workshop

Miami-Dade SMART Plan STOPS-based Ridership Forecast Development

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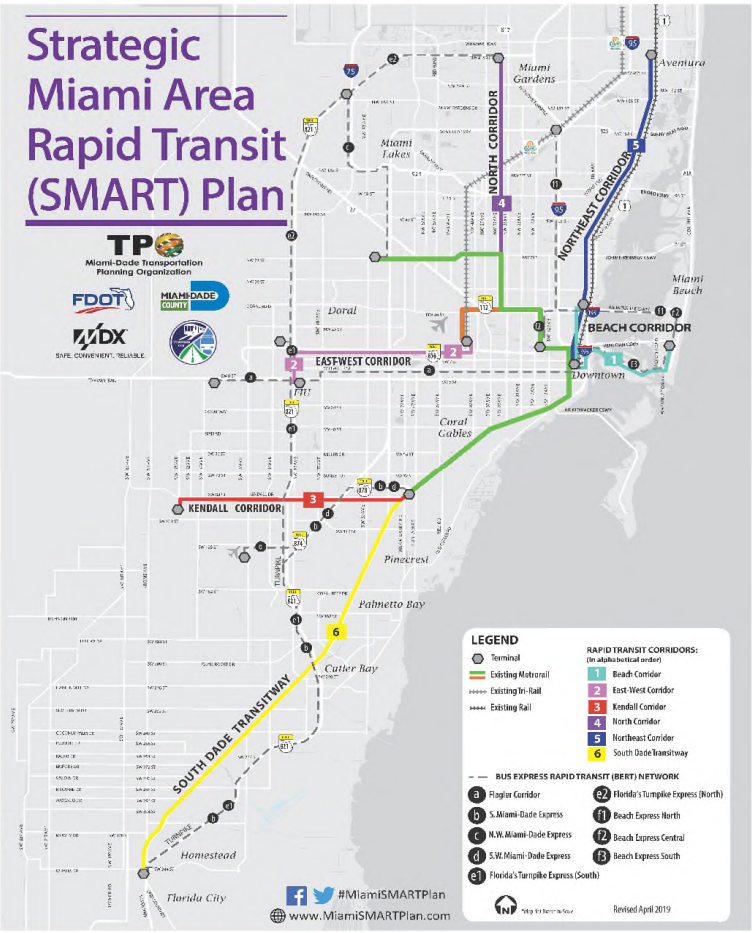
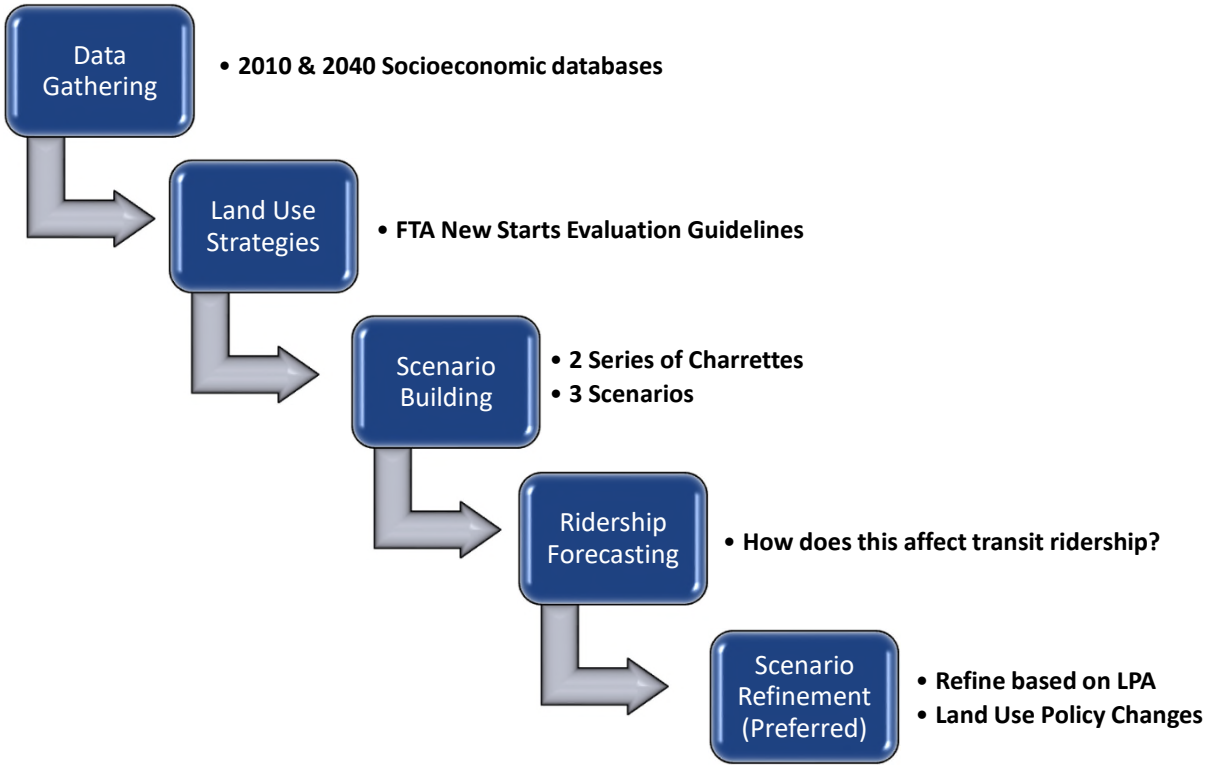
Background - Strategic Miami Area Rapid Transit (SMART) Plan

- **Six (6) Rapid Transit Corridors**
  - ✓ Beach
  - ✓ East-West
  - ✓ Kendall
  - ✓ North
  - ✓ Northeast
  - ✓ South
- **Six (6) Bus Express Rapid Transit Corridors**
  - ✓ Beach Express
  - ✓ Flagler Street
  - ✓ Florida Turnpike
  - ✓ NW Miami-Dade Express
  - ✓ S Miami-Dade Express
  - ✓ SW Miami-Dade Express

Over 90 miles of express bus network

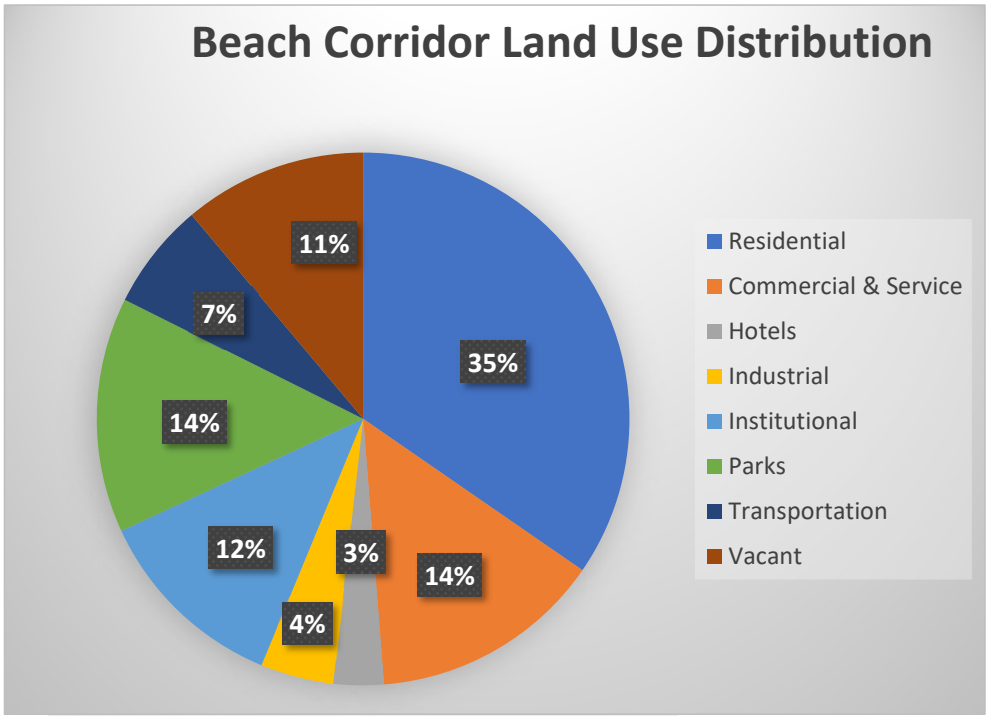


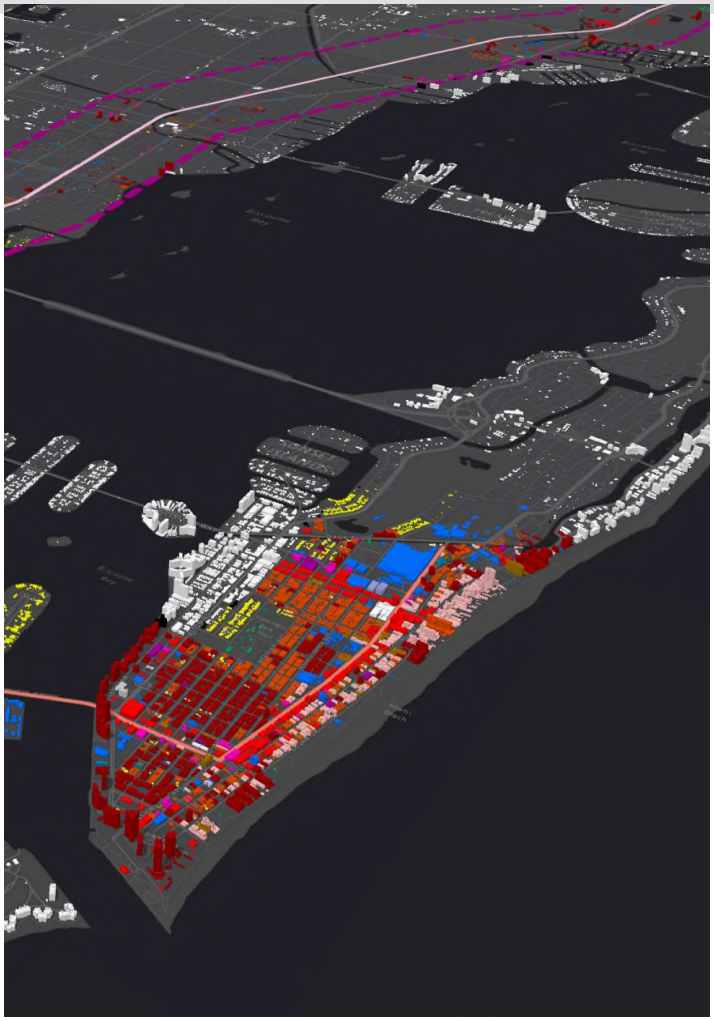
Land Use Scenario Planning - Process



Data Gathering

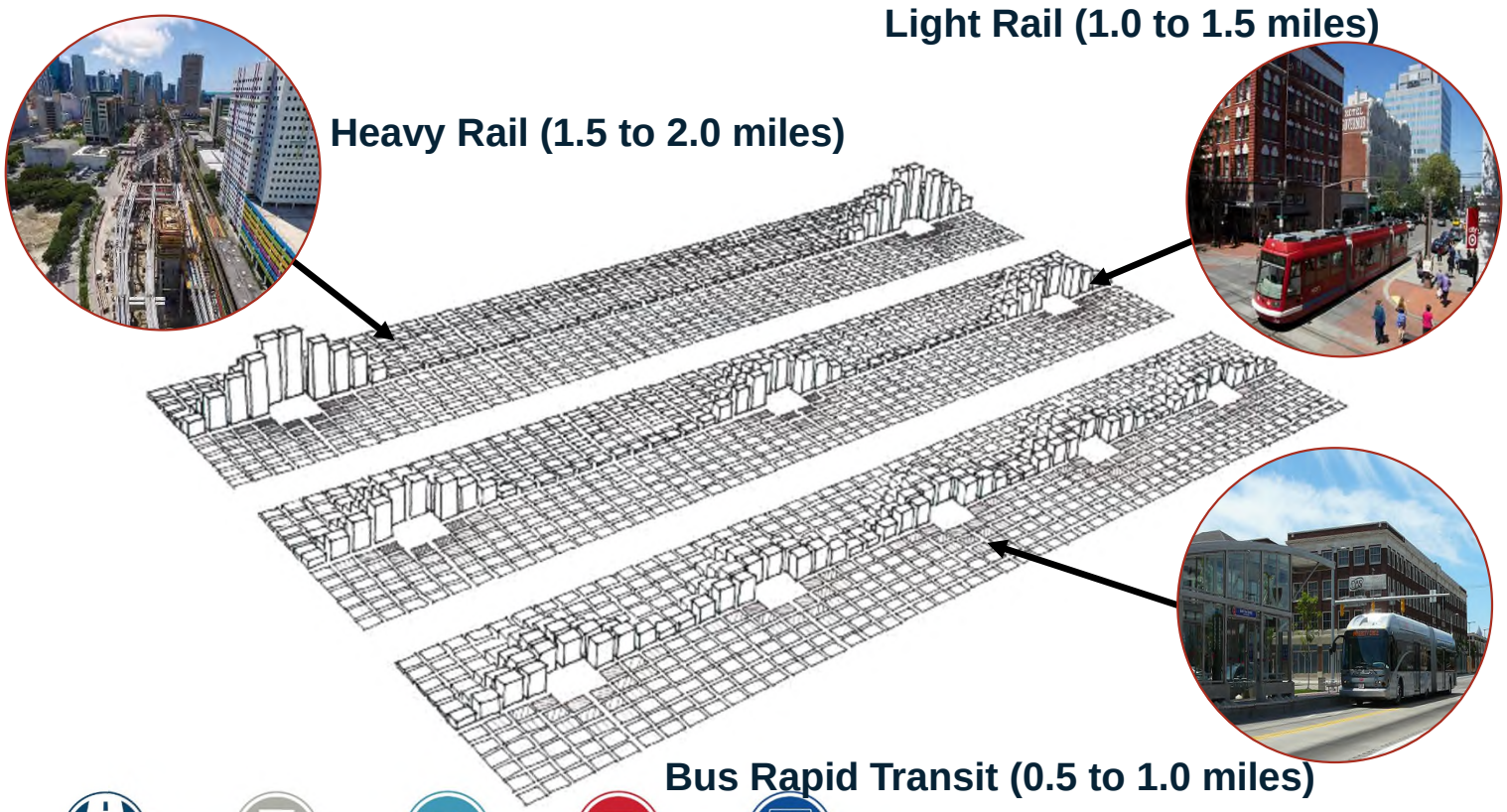
Existing Land Uses





Land Use Strategies

Transit Oriented Development



- STATION AREA INTENSITY AND SPACING
- Rapid transit technology and cost influence station spacing and station area intensities
- Source: National Transit Institute, Transit Oriented Development Training Course

Scenario Building

Station Level Analysis *(South Corridor)*

Perrine Station

existing conditions

Uses
Restaurant
Small Shopping Mall
Detached Houses

Scenario Building

Station Level Analysis *(South Corridor)*

Perrine Station

moderate investment

Uses
Restaurants
Small Shopping Mall
Detached Houses
Multifamily Units
Offices
Pharmacy

½ Mile Station Area
New Jobs: 550
New Housing Units: 120
New Leasable: 200K SF
New Muni Revenue: $280K

Scenario Building

Station Level Analysis *(South Corridor)*

Perrine Station

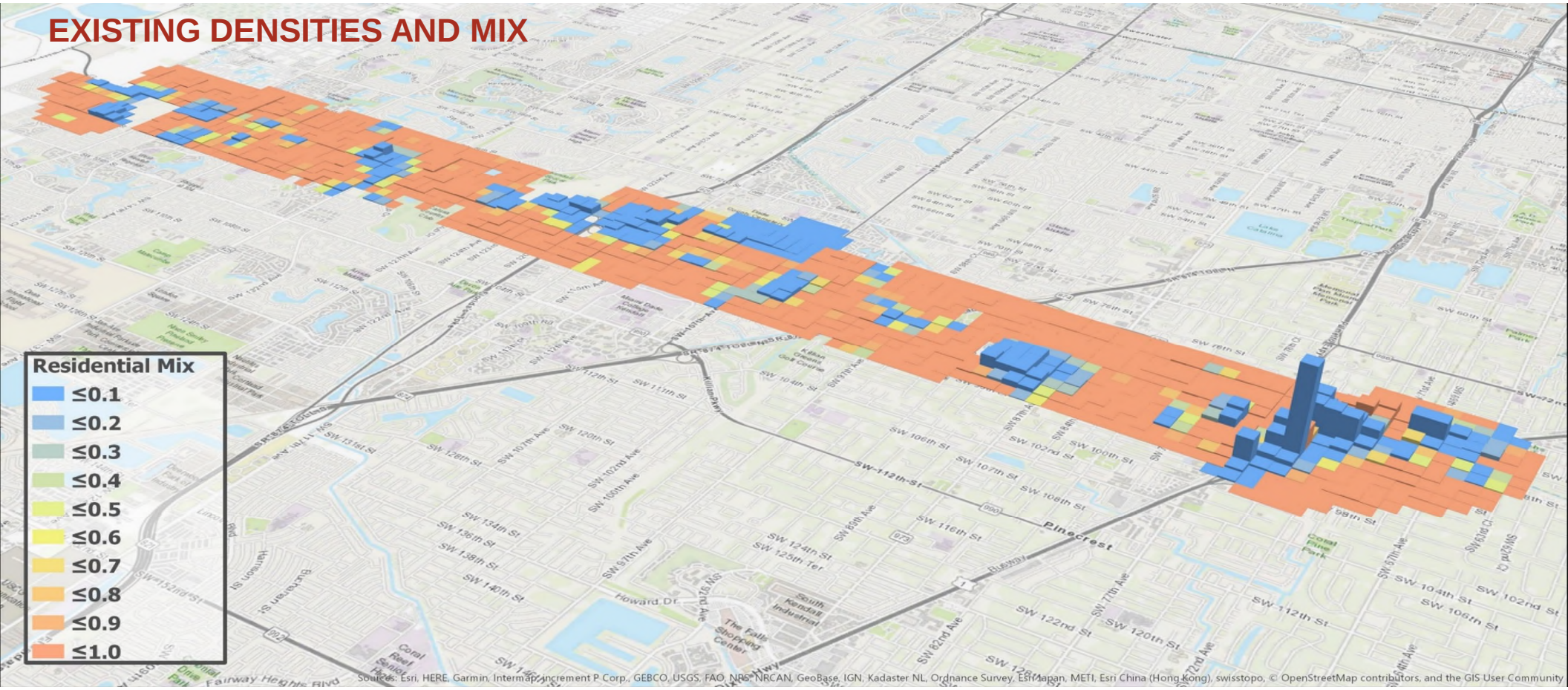
high investment

Uses
Restaurants
Small Shopping Mall
Detached Houses
Multifamily Units
Offices
Pharmacy
Hotel
Shops
Cafes
Plaza
Multimodal Streets
Trails & Street Trees

½ Mile Station Area
New Jobs: 1,200
New Housing Units: 414
New Leasable:900K SF
New Muni Revenue:$390K

Scenario Building

Corridor Level Analysis *(Kendall Corridor)*



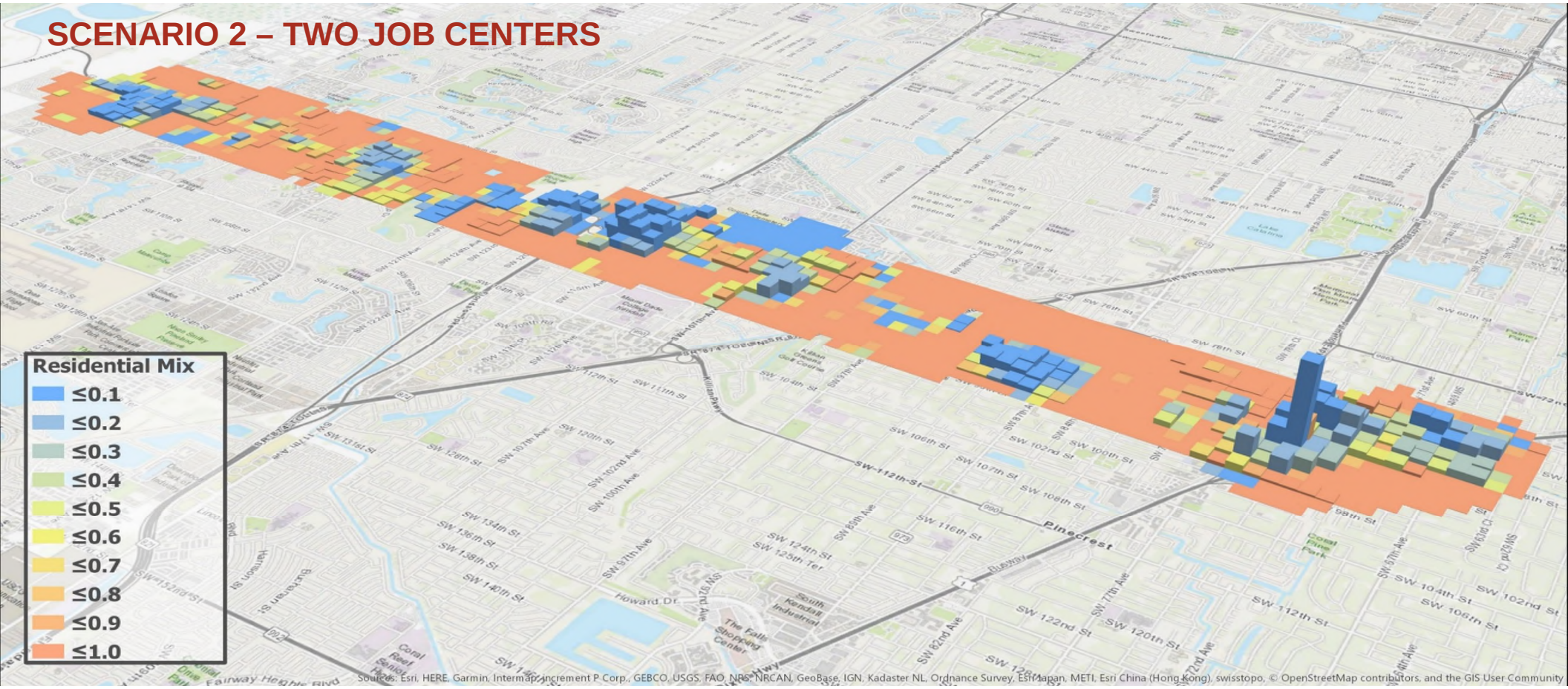
Scenario Building

Corridor Level Analysis *(Kendall Corridor)*

SCENARIO 1 – ONE JOB CENTER

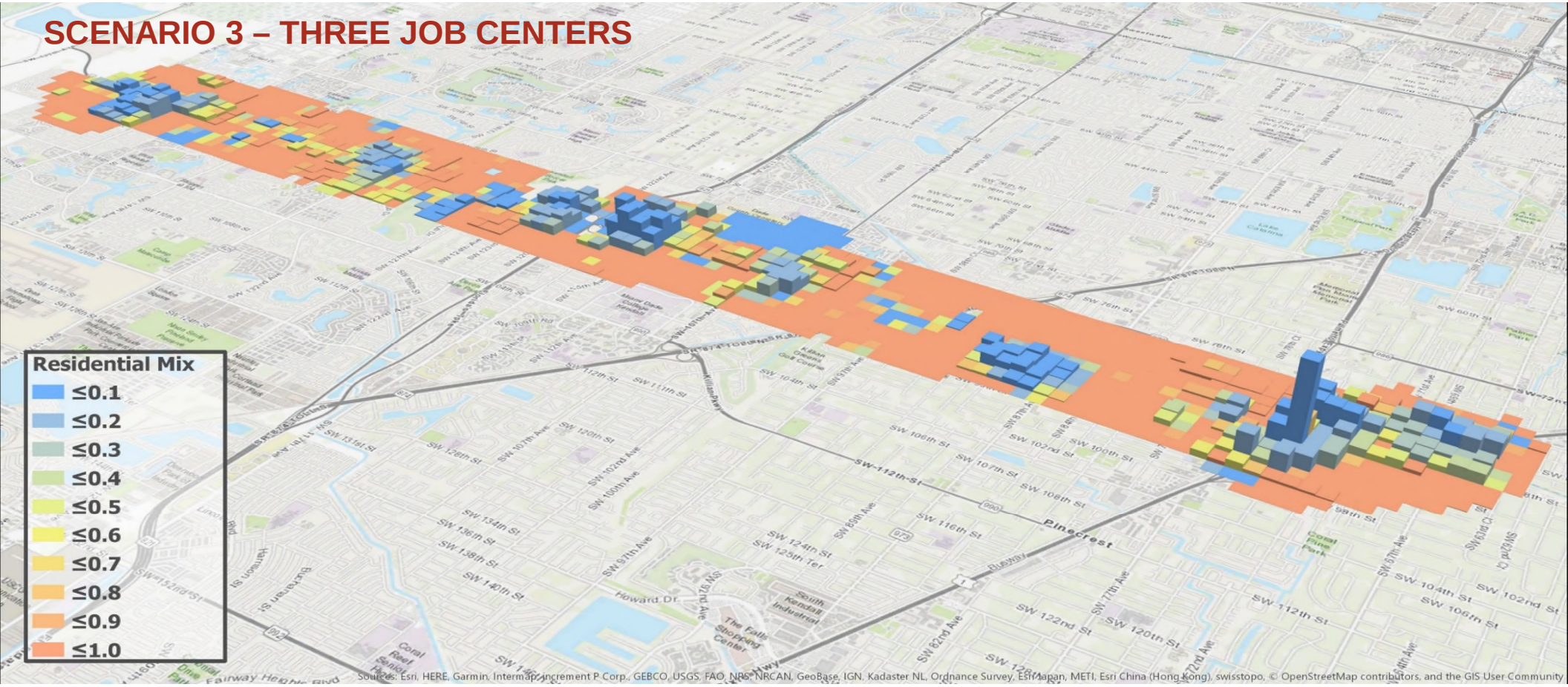
Scenario Building

Corridor Level Analysis *(Kendall Corridor)*



Scenario Building

Corridor Level Analysis *(Kendall Corridor)*



Ridership Forecasting

Travel Demand Modeling Methodology

- ✓ Use of Southeast Regional Planning Model (SERPM 7)
  - ✓ 2015 Base/2040Future
  - ✓ Development of Generalized Cost Skims
- ✓ Simplified Trips-On-Project Software (STOPS 2.5)
  - ✓ 2015 Base Year/2040 Future Year
  - ✓ Calibrated for Miami-Dade County
  - ✓ Synthetic Approach using 2006-2010 CTPP Data

2040 Corridor Land Use Data Increases

2040 LRTP County Control Totals

Land Use Reallocation Model

Transit Alternatives Coding

SERPM7 Scenario Testing

- Highway GC Skims

STOPS Scenario Testing

- Scenario Ridership Results

Ridership Forecasting

Maintaining the Adopted County Control Totals *(Northeast Corridor)*

COUNTY CONTROL TOTALS	2015	LRTP 2040	2015-2040 TREND GROWTH
POPULATION	2,648,094	3,307,549	659,455
EMPLOYMENT	1,210,746	1,636,614	425,868

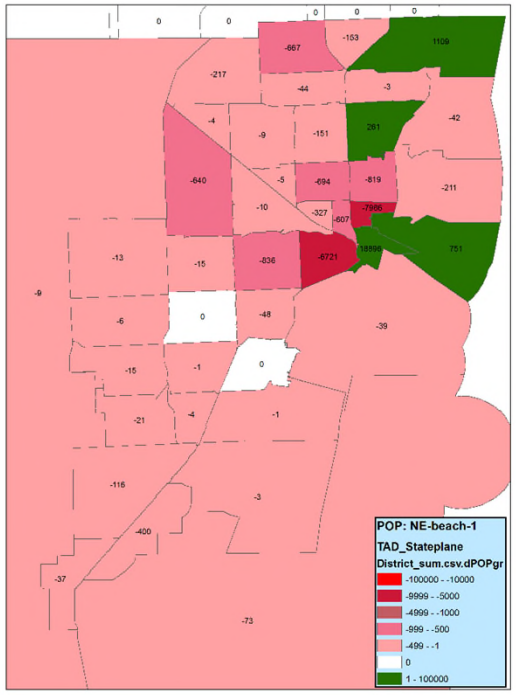
CORRIDOR-WIDE SUMMARY	2015	LRTP 2040	SCEN 1 2040	SCEN 2 2040	SCEN 3 2040	SCEN 1 DIFFERENCE (From 2040)	SCEN 2 DIFFERENCE (From 2040)	SCEN 3 DIFFERENCE (From 2040)
POPULATION	409,691	547,257	565,674	585,546	587,625	18,417	38,289	40,368
EMPLOYMENT	230,494	313,339	328,827	344,792	340,141	15,488	31,453	26,802

- ✓ **The additional corridor growth must be reallocated from another part of the county**
- ✓ **The 2040 adopted county control totals must be honored**
- ✓ **If the corridor experiences growth, it must be reallocated from elsewhere in the county**

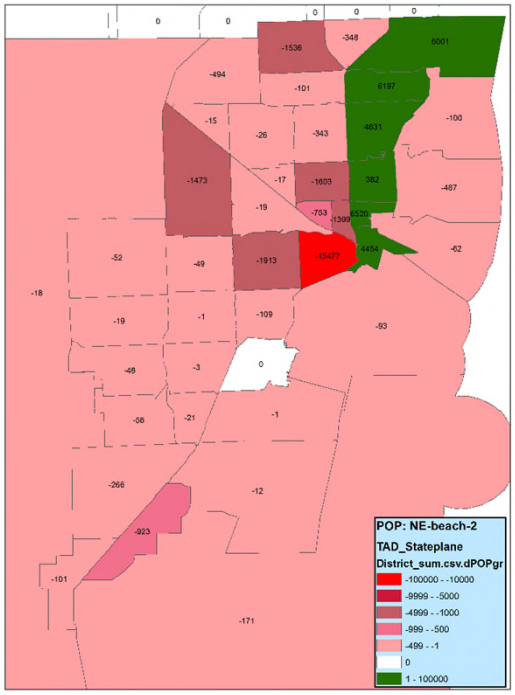
FDOT

Ridership Forecasting

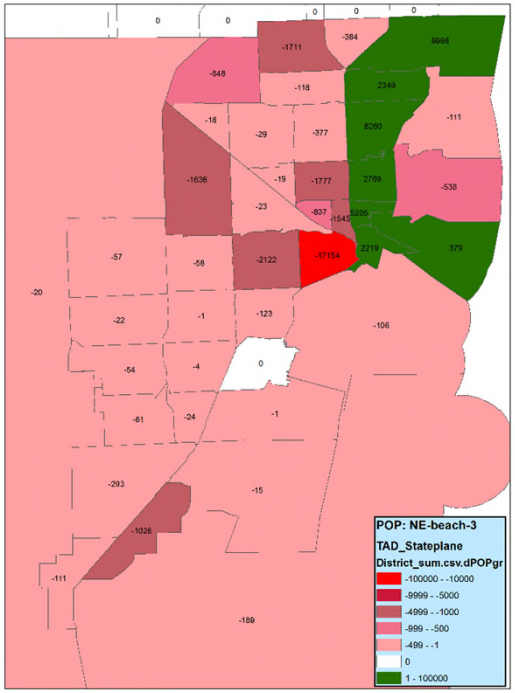
POPULATION REALLOCATION BY TAD
(Northeast Corridor)



1 – Intown – Downtown



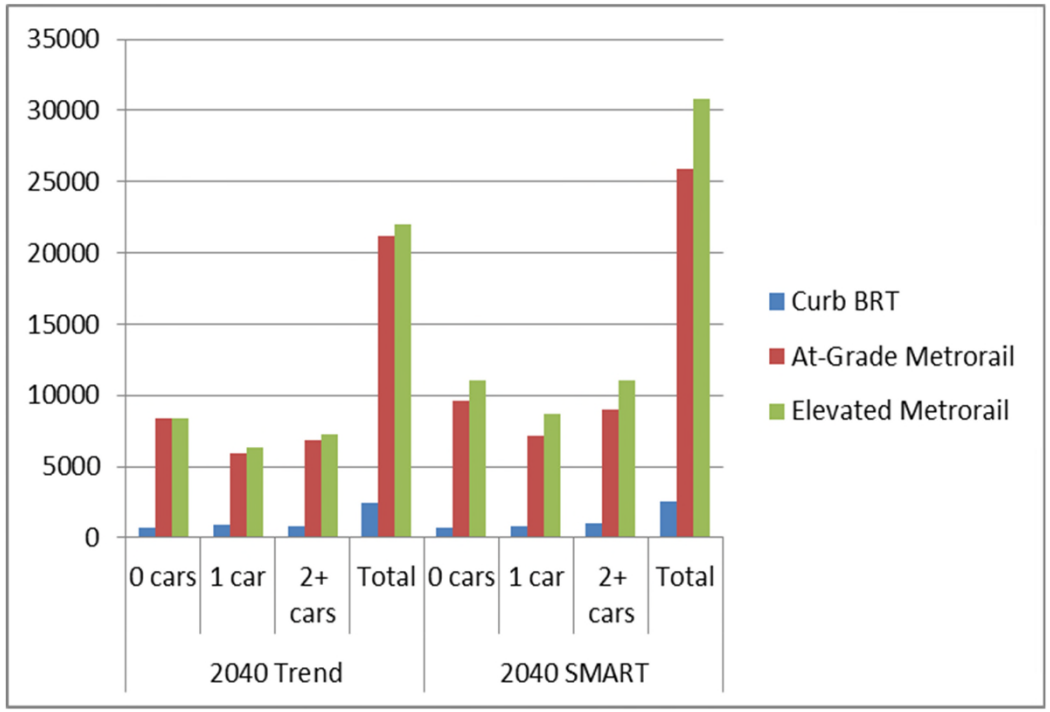
2 – SMART Shift



3 – Highly Connected

Ridership Forecasting

TRANSIT TRIPS – WEEKDAY RIDERSHIP LINKED TRIPS *(North Corridor)*



Scenario	Auto Ownership	Curb BRT	At-Grade Metrorail	Elevated Metrorail
2040 Trend	0 cars	747	8,352	8,419
	1 car	876	5,952	6,357
	2+ cars	838	6,848	7,256
	Total	2,461	21,152	22,032
2040 SMART	0 cars	682	9,604	11,052
	1 car	825	7,207	8,729
	2+ cars	1,007	9,040	11,010
	Total	2,515	25,851	30,791

- ✓ **Ridership increases were significant for the medium and High 2040 SMART scenarios**
- ✓ **Land use, station area intensification has positive effect on transit ridership estimates**

Lessons Learned

- ✓ **Integrating land use and transportation alternatives is an important step in transportation planning process**
- ✓ **Identifying the corridors for future transit use is the first step in the process.**
- ✓ **Through the land use refinement exercises, the suitability of a corridor for major investment can be effectively tested**
- ✓ **Early public involvement provides the much needed local consensus in the LPA determination and the land use choices**
- ✓ **Land Use has significant impact on ridership results**

THANK YOU!