

Resilient Mobility Transitions into the Future

10th Annual Southeast Florida Regional Climate Leadership Summit



Aileen Bouclé, AICP, Executive Director
Miami-Dade Transportation Planning Organization

October 24, 2018



Resilient Mobility Transitions into the Future

1. Anuj Chokshi, Sr. Project Manager, FPL Development
2. Jose M. Gonzalez, Senior Vice President of Corporate Development, Florida East Coast Industries
3. William Cross, Deputy Executive Director of Planning and Programs, Broward MPO
4. Nick Uhren, Executive Director, Palm Beach Transportation Planning Organization





Resilient Mobility Transitions into the Future

Electric Vehicles

Anuj Chokshi

Sr. Project Manager, FPL Development

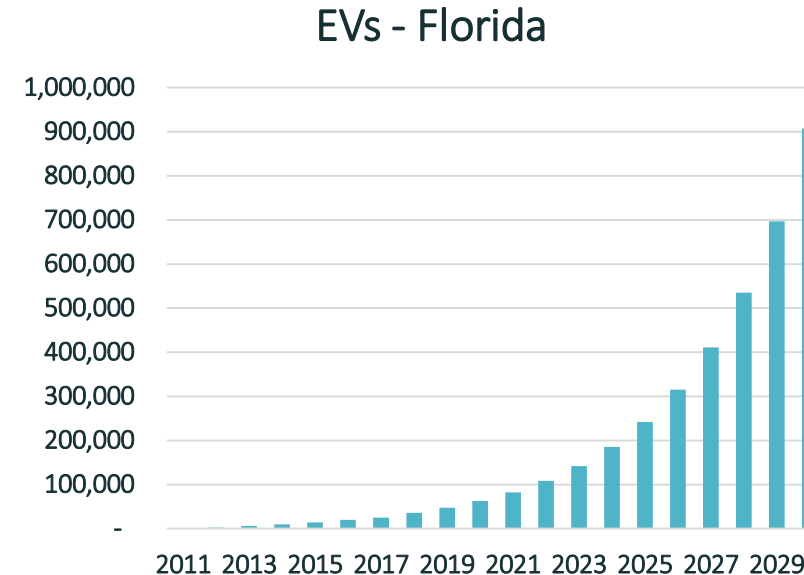
ANUJ.CHOKSHI@fpl.com



Forecasts for Electric Vehicle (EV) Penetration Predict ~25% of new sales by 2030¹

Electric Vehicles (EV) Forecast

- **Today:**
 - ~8 million registered personal vehicles in Florida
 - 30k electric vehicles or 0.4%
- **By 2025?:**
 - ~250k electric vehicles or ~4% of all vehicles
- **Grid implications:**
 - ~18 GWh of mobile batteries



Likely the majority of vehicles on the road at some point will be electric

¹ Source: Bloomberg New Energy Finance

FPL is a proponent of transportation electrification

Current FPL EV Strategy

Expansion of Market

- Expand EV fleets
- Raise public awareness of EVs
- Support infrastructure development
- Engage government officials and commercial customers
- Encourage supportive EV regulatory and legislative policy

Customer EV Expectations

- Understand EV owner expectations
- Produce educational materials
- Support events
- Be the EV subject matter expert
- Ensure FPL processes support EV buyers

Additionally, adding EVs to FPL's grid lowers rates

There are several benefits to drive electric

Why Drive Electric?

- Zero Emissions
 - EVs powered with FPL's clean electricity have at least 70% fewer emissions than gas-powered vehicles when power plant emissions are considered
- Energy Independence
 - Less than one percent of all FPL power comes from oil
 - Fuel up with domestic electricity vs. foreign oil
- Lower Costs
 - Reduced fuel costs
 - Less maintenance

Major auto manufacturers have committed \$170B towards EVs with 160 new models by 2023

EV Announcements

Manufacture	Investment
GM	20 new all-electric models by 2023
Ford	“Team Edison” to lead EV development
VW	Invest \$24B by 2030; 80 new Evs by 2025
BMW	12 all-electric models by 2020
Mercedes	\$1B in Alabama plant; 50 hybrid or electric models by 2022
Volvo	All new models in 2019+ to be hybrid or electric
Nissan	12 all-electric models by 2022
Porsche	\$7.4B to electrify 50% of its lineup by 2025

Thank you!



brightline

The smarter way to get there

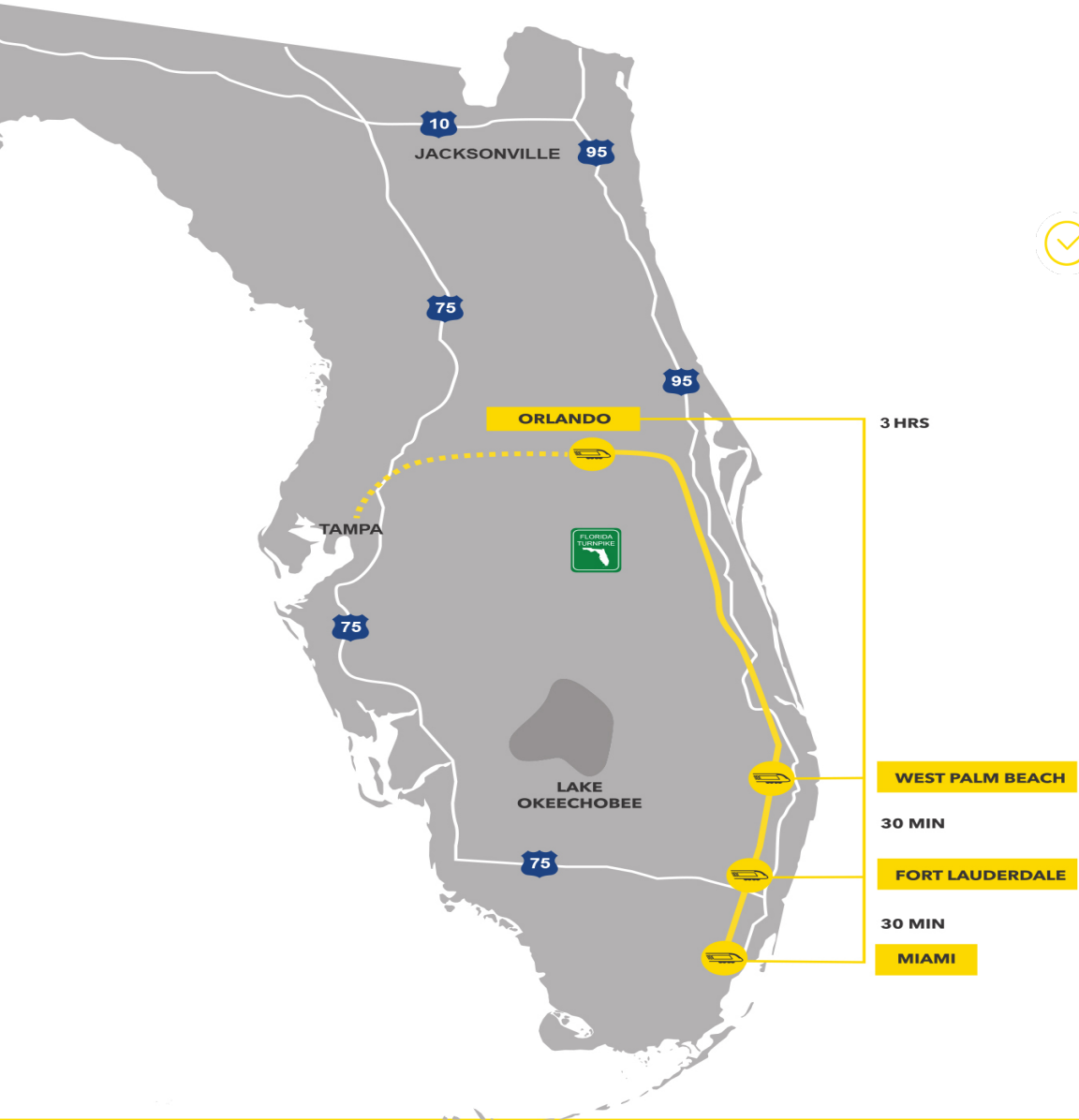
Brightline's Clean Energy & Green Initiatives

Jose M. Gonzalez, SVP of Corporate Development of FECI

October 24, 2018



THE ONLY PRIVATELY OWNED, OPERATED AND MAINTAINED EXPRESS INTER-CITY TRAIN SERVICE IN THE UNITED STATES



- ✓ Removing 3 million vehicles from roads each year
- ✓ Reducing congestion, greenhouse emissions and fuel consumption

SIEMENS Trainsets **100% Made in America** by Siemens and 40 other suppliers in over 20 states

Connecting Florida Residents, Business Travelers, Commuters & Tourists

Leverages existing Florida East Coast Railway used by trains for more than 100 years

Combination of two companies: Express intercity passenger rail service and transportation oriented real estate in South Florida downtowns

Clean Energy

- Brightline partnered with Florida Power & Light (FP&L) to provide clean biodiesel to fuel its trains
- FPL will supply Brightline with two million gallons of biodiesel-blended fuel annually, which is produced in Palm Beach County
- Biodiesel fuel is a cleaner-burning replacement produced from renewable sources like corn, soybeans and used cooking oil



Brightline Trains

- Brightline trainsets meet the highest emissions standards, Tier IV, set by the federal government
- Each trainset is powered by Siemens Charger locomotives and equipped with fuel tanks designed to contain up to 2,200 gallons
- The projected consumption of the trains is two gallons of fuel per mile
 - The 67-mile one-way trip from Miami to West Palm Beach consumes 134 gallons
 - Each trainset can carry approximately 240 guests



Solar Trees & EV Charging Stations

- Brightline stations feature FPL SolarNow trees and other solar projects that provide emissions-free power for the grid and shade for guests
- Each solar tree is capable of producing up to 3 kilowatts of solar energy, enough to power an electric vehicle 15,000 miles per year
- Brightline guests who drive electric cars can charge them at the EV charging stations located in Brightline garages



Clean Energy Statistics

- After Brightline connects to Orlando and a few years into stabilized ridership, the company expects to remove 3 million cars from the roadways each year
- Higher speed trains reduce CO2 emissions by three times that of a bus, about four and a half times that of a normal car and close to five times that of airplanes



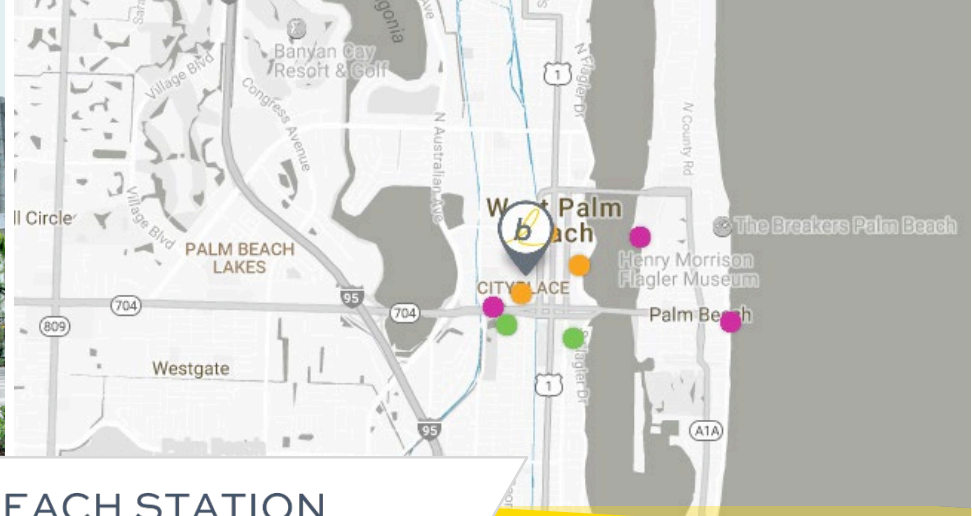
Designed by



b

STATIONS

Regus ERNST & YOUNG



WEST PALM BEACH STATION

Evernia St, between S. Rosemary Ave & S. Quadrille Blvd

Located in the heart of the city, all the places you want to go to are walkable. Stroll down to West Palm Beach's multiple art museums, entertainment venues, beaches and even wildlife sanctuaries.



WALK

Government Center | West Palm Beach Courthouse | City Hall
Clematis District | CityPlace
Centennial Park | Waterfront



BIKE

Flagler Museum | Kravis Center
Center | Palm Beach Island



RIDESHARE/ CAB

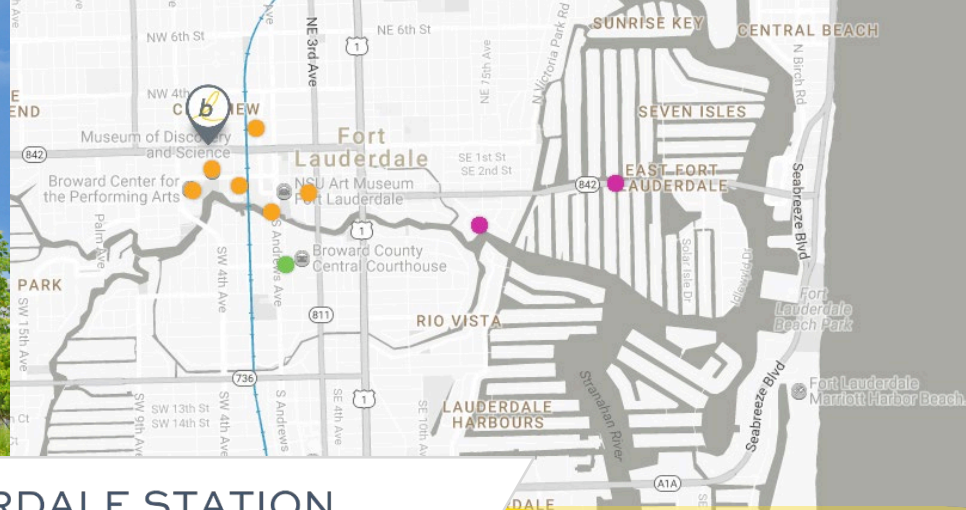
Palm Beach Atlantic University
Convention Center
Airport | Beaches



PUBLIC TRANSIT

Palm Tran | Tri-Rail





FORT LAUDERDALE STATION

NW 2nd Ave, between W Broward Blvd & NW 4th St

Located in the heart of downtown, more than 100 shopping and dining options are closer than ever. A short walk and you're at the Broward Center for the Performing Arts, museums and miles of beautiful beaches.



WALK

City Hall | Historic District | Museum of Science | Riverwalk | A&E District
Broward Center for the Performing Arts | FAT Village



BIKE

Las Olas Boulevard & Tarpon Bend Park



RIDESHARE/ CAB

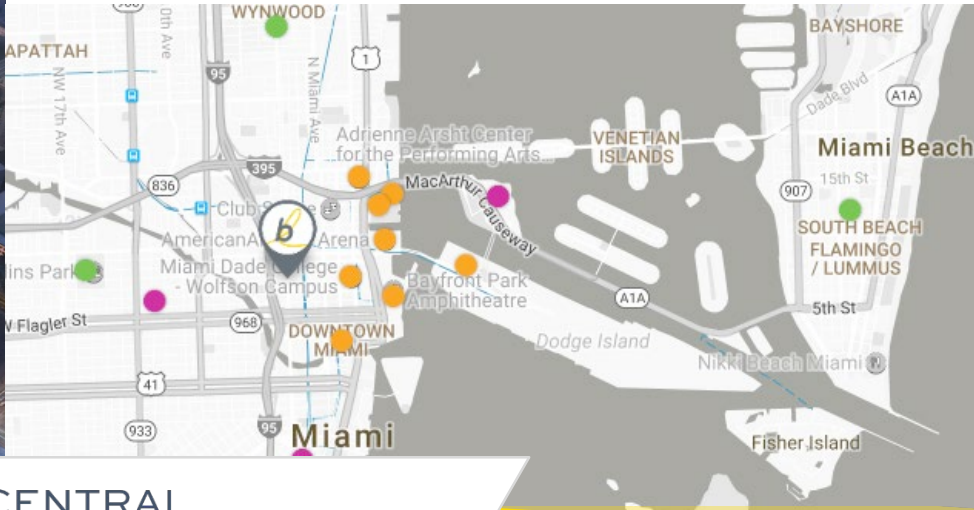
Downtown Business District
Port Everglades
Beaches | Airport



PUBLIC TRANSIT

Broward County Transit
Wave Streetcar (future)
Sun Trolley





MIAMICENTRAL

NW 1st Ave, between NW 3rd St & NW 8th St

From the immersive arts and culture to the incredible sports, events and nightlife, Miami never disappoints. Enjoy world-renowned dining and shopping, the Art Deco District of Miami Beach and relax on fabulous beaches and marinas



WALK

American Airlines Arena
Adrienne Arsht Center
PortMiami | Bayfront Park
Miami Dade College



BIKE

Brickell | Little Havana



RIDESHARE/ CAB

South Beach | Jungle Island
Coral Gables | Wynwood
Marlins Park and more



PUBLIC TRANSIT

MetroMover | MetroRail
MetroBus | Tri-Rail





brightline

b



Resilient Mobility Transitions into the Future

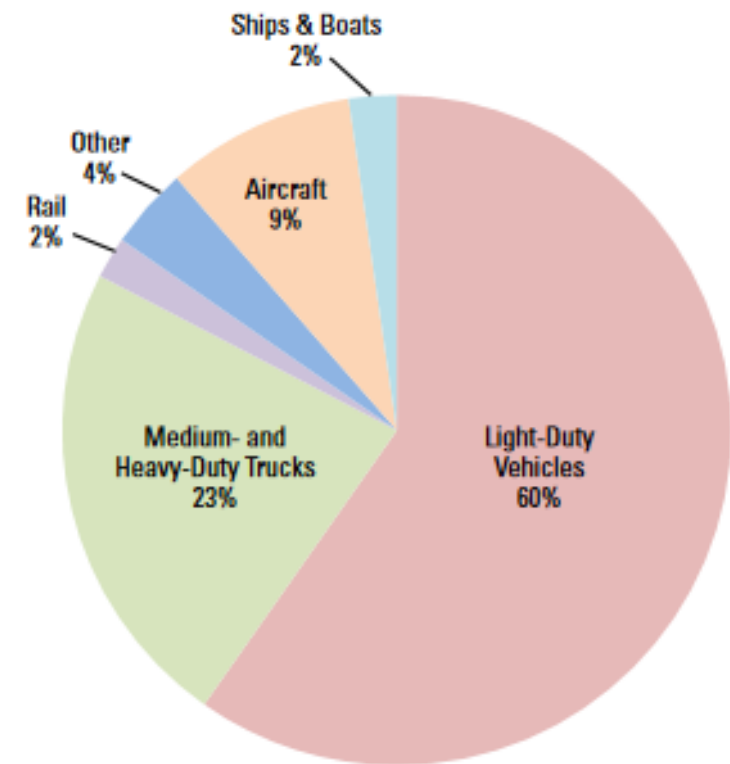
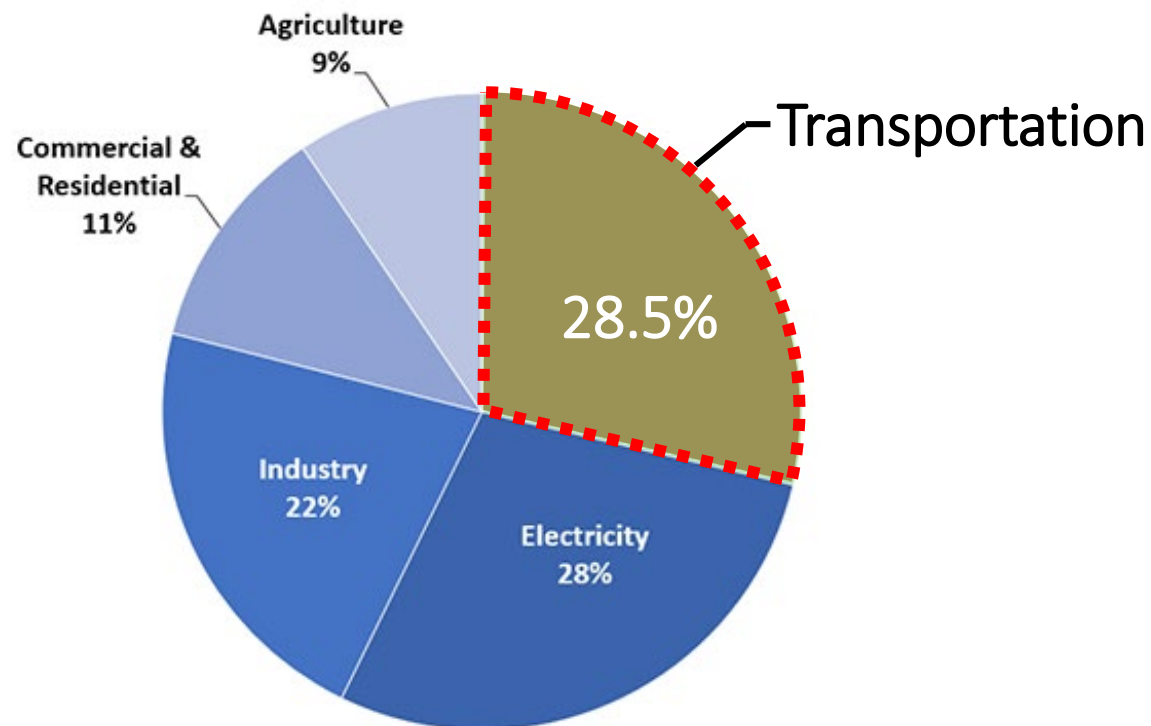
William L. Cross, P.E., Deputy Executive Director
Planning and Programs

Broward Metropolitan Planning Organization

CrossW@browardmpo.org

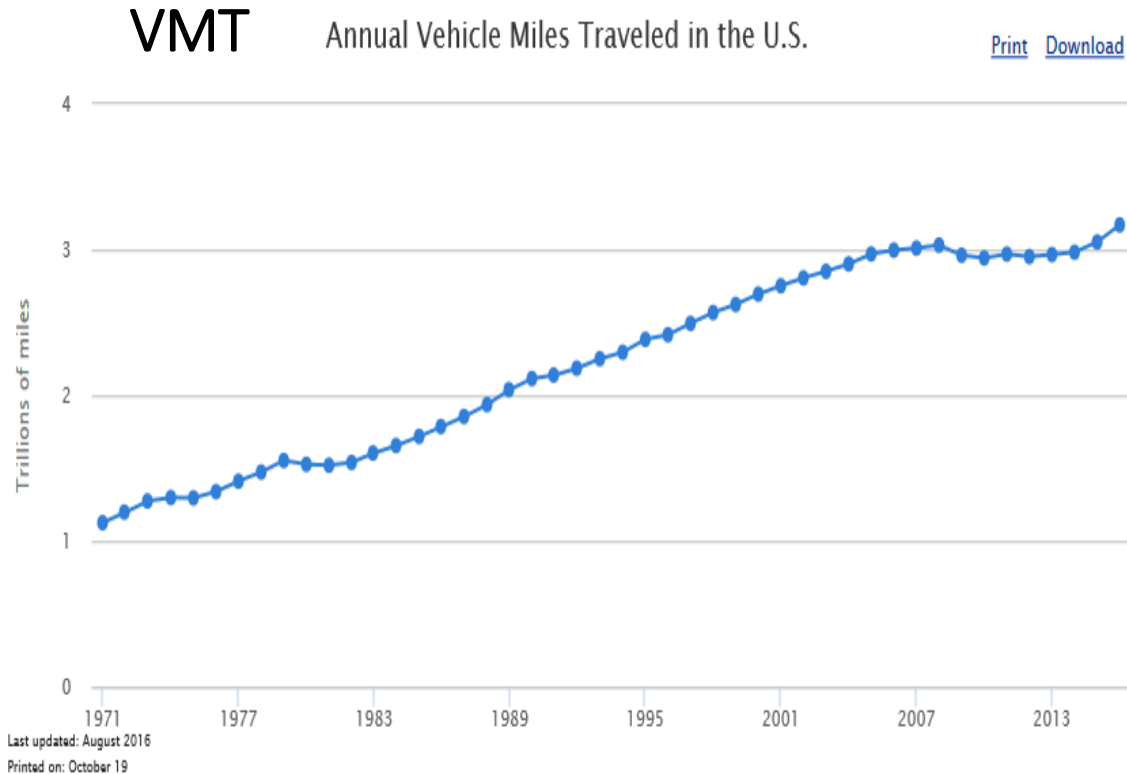
The Transportation Sector Generates the Largest Share of Greenhouse Gas Emissions

Total U.S. Greenhouse Gas Emissions
by Economic Sector in 2016



Share of U.S. Transportation Sector
GHG Emissions by Source, 2016^{4,5}

Transportation Drivers: VMT and Population



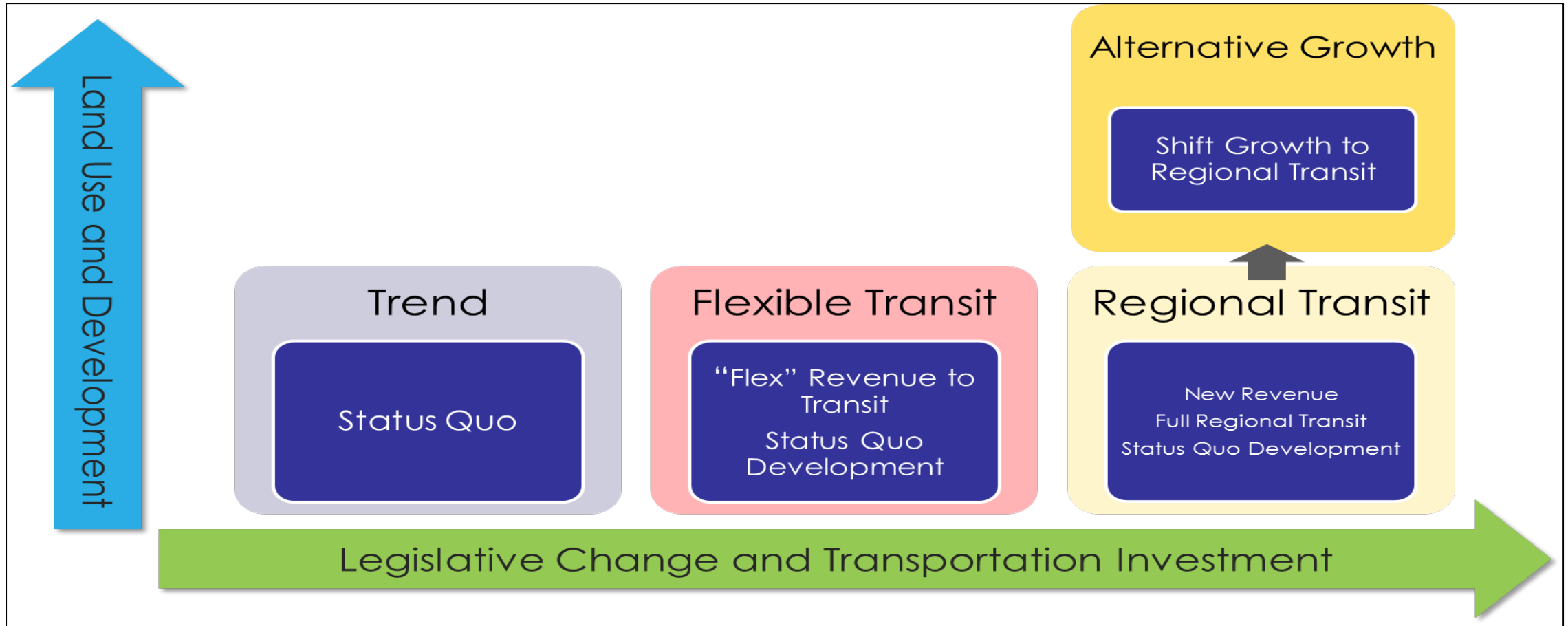
Source: [Federal Highway Administration](#)

2016 experienced the largest annual increase in VMT since tracking began in 1971.

1.7 Million New
Population by 2045

5.9 Million Existing
Population

2045 Regional Transportation Plan Scenario Planning



Broward 2045 Metropolitan Transportation Plan – Scenario Planning

TREND	COMPACT DEVELOPMENT	TECHNOLOGY	RESILIENCY	COMMUNITY VISION
Continues recent trends in growth & transportation investments	Aggressively pursue high-density development, infill, & redevelopment within key corridors	Aggressively pursue advancing & emerging transportation technology integration	Aggressively respond to sea level rise, severe weather events, and other forces	Integrate individual community and agency visions
Hybrid Scenario				



PALM BEACH Transportation Planning Agency

Resilient Transportation in South Florida

Nick Uhren, P.E.

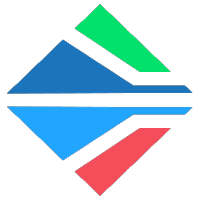
Executive Director

Palm Beach TPA

nuhren@palmbeachtpa.org

www.palmbeachtpa.org

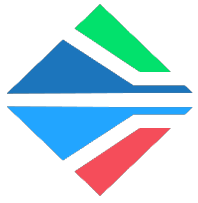
2300 North Jog Road • 4th Floor • West Palm Beach • FL 33411 • 561-684-4170



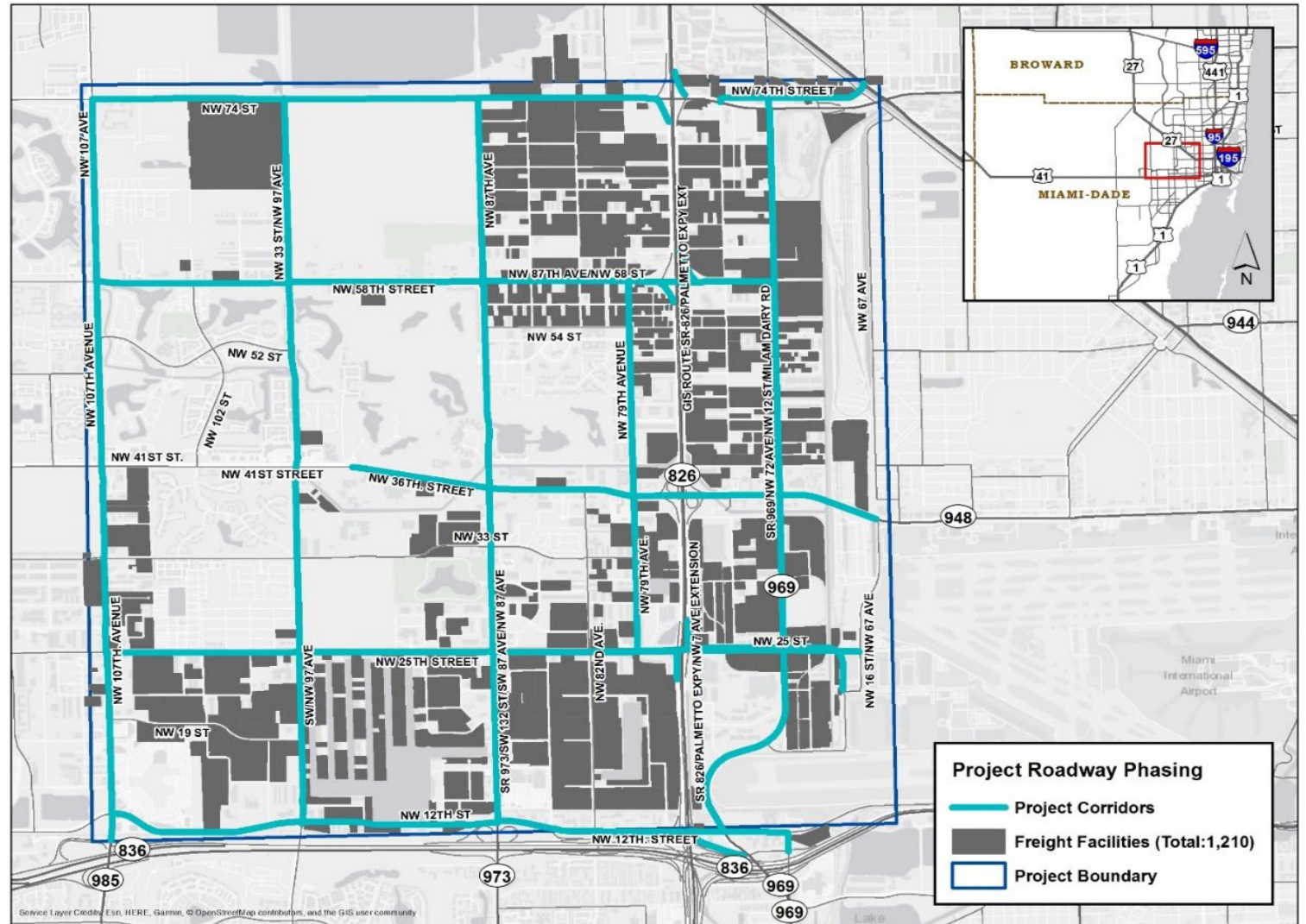
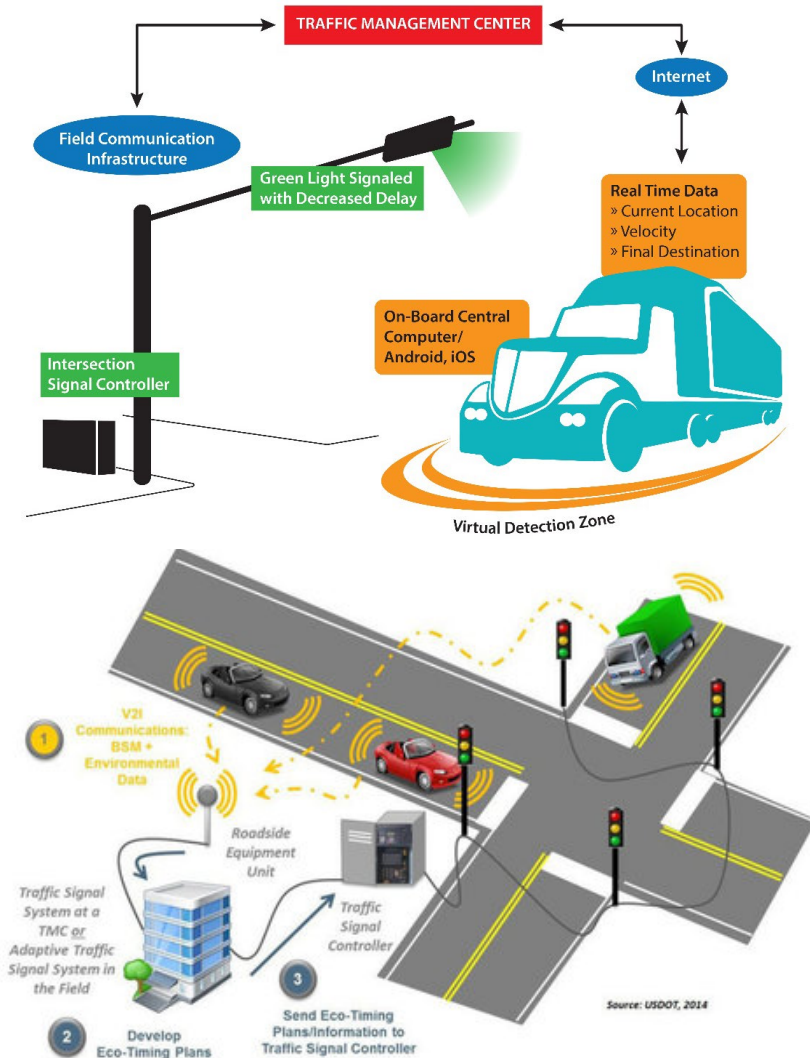
Complete Streets Support Resiliency

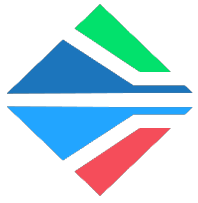
Complete Streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.





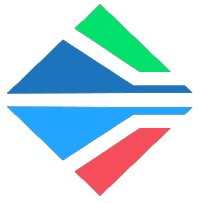
Efficiency Supports Resiliency





Shared Mobility Supports Resiliency





Regional Transit Supports Resiliency



Tri-Rail Coastal Link

Miami-Dade
Broward
Palm Beach

Resilient Mobility Transitions into the Future

Resilience **Mobility**
Scenario Planning **Complete Streets**
Compact Development **Connectivity**
Electric Vehicles
Sea Level Rise
Regional Transportation Plan
Adaptability Connected Vehicles
Rideshare Planning

Questions & Discussion

