



# Model Applications for Oakland Park Boulevard Transit Corridor Study

Southeast Florida FSUTMS Users Group

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# Presentation Outline

- Project setting
- OPB corridor transit alternatives
- Sensitivity analysis, ridership forecasts and traffic impacts

Southeast Florida Simplified Transit Model (SFSTM)

Southeast Florida Regional Planning Model (SERPM v6.7)

- Transit runtimes - Spreadsheet model
- Operational analysis – VISSIM
- Traffic impacts summary

# Project Setting

- Corridor shares approx. 25% travel activity in Broward County
- Shares a mix of residential and employment centers
- Dispersed travel patterns, with lots of movement in/out of corridor
- Heavy congestion with unreliable travel times
  - Includes the top two busiest intersections in the County
- Route 72
  - 9,000 daily riders
  - Mobility-dependent riders
  - Strong activity in mid-section of the corridor
  - 50% of riders transfer (#18 and #2)
  - On-time performance issues
  - Riders travel short distances...less than 5 miles



# OPB Corridor Transit Alternatives

## Enhanced Bus Service



## BAT Lane Business Access and Transit Lane



## Exclusive Lane



# Sensitivity Analysis - SFSTM

**Sensitivity analysis was conducted to refine the alternatives using the SFSTM**

- Headway improvements
- Transit travel time improvements resulting from ITS-type improvements
- Number of stop locations along the corridor
- Types of transit service
  - a. Local
  - b. Short turn service
  - c. Limited stop service
  - d. BRT
  - e. Streetcar

# Sensitivity Analysis - SFSTM

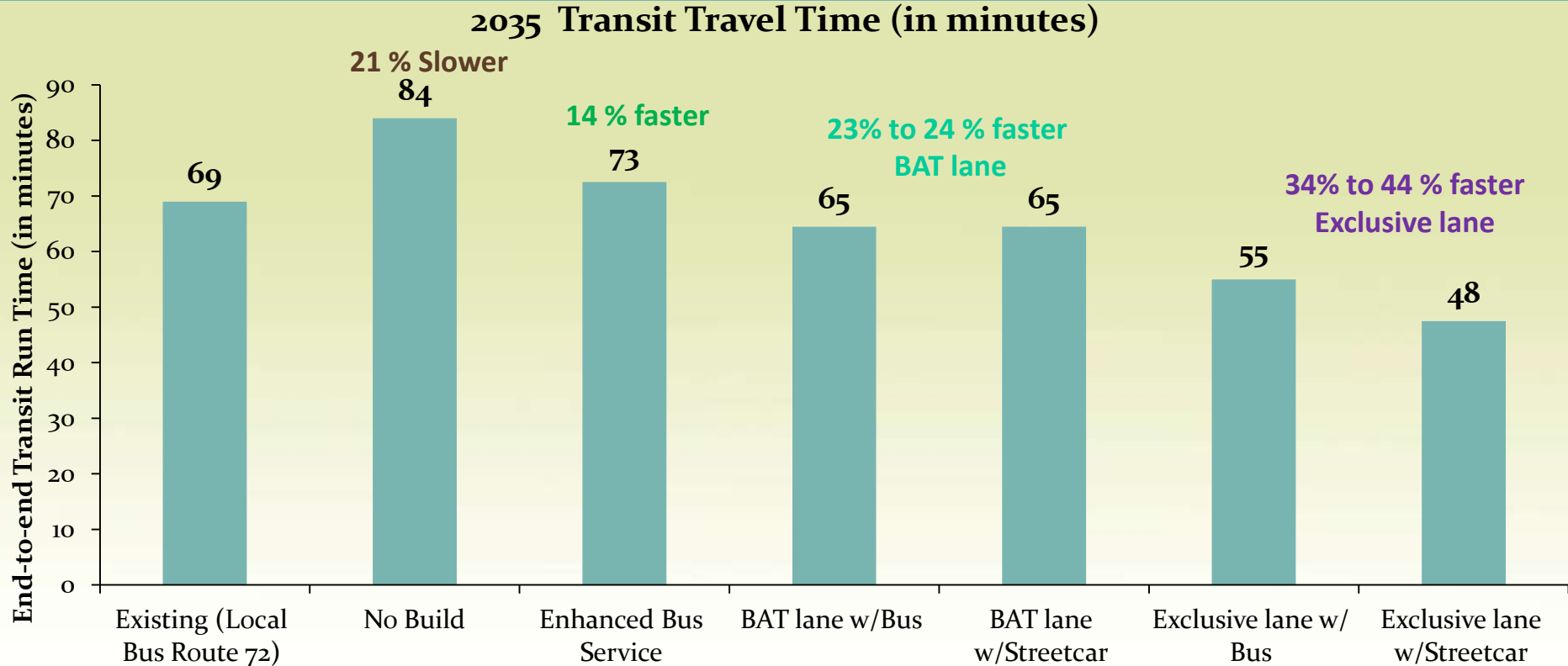
- Local bus service on OPB critical for providing mobility in the corridor
- Travel time improvements resulting from ITS type improvements reduce transit runtime and help improve schedule reliability
- Sixteen (16) stops along the corridor are optimal for limited stop bus service
- Most productive segment in terms of ridership along the corridor is between University Drive and US 1

# Operating Plan

Enhanced Bus Service, BAT lane with bus or streetcar, & Exclusive lane with bus or streetcar

- Headways (peak/off peak)
  - Route 72 – 15/15 min.; serves all the existing stops
  - “Project” service – 15/15 min.; serves 16 stops/stations\*
- “Project” service termini – Sawgrass Mills Mall to SR A1A
- No park-and-ride
- Fare structure of “Project” service – same as the existing Route 72
- Community bus routes provide feeder service

# Transit Travel Time – Spreadsheet model

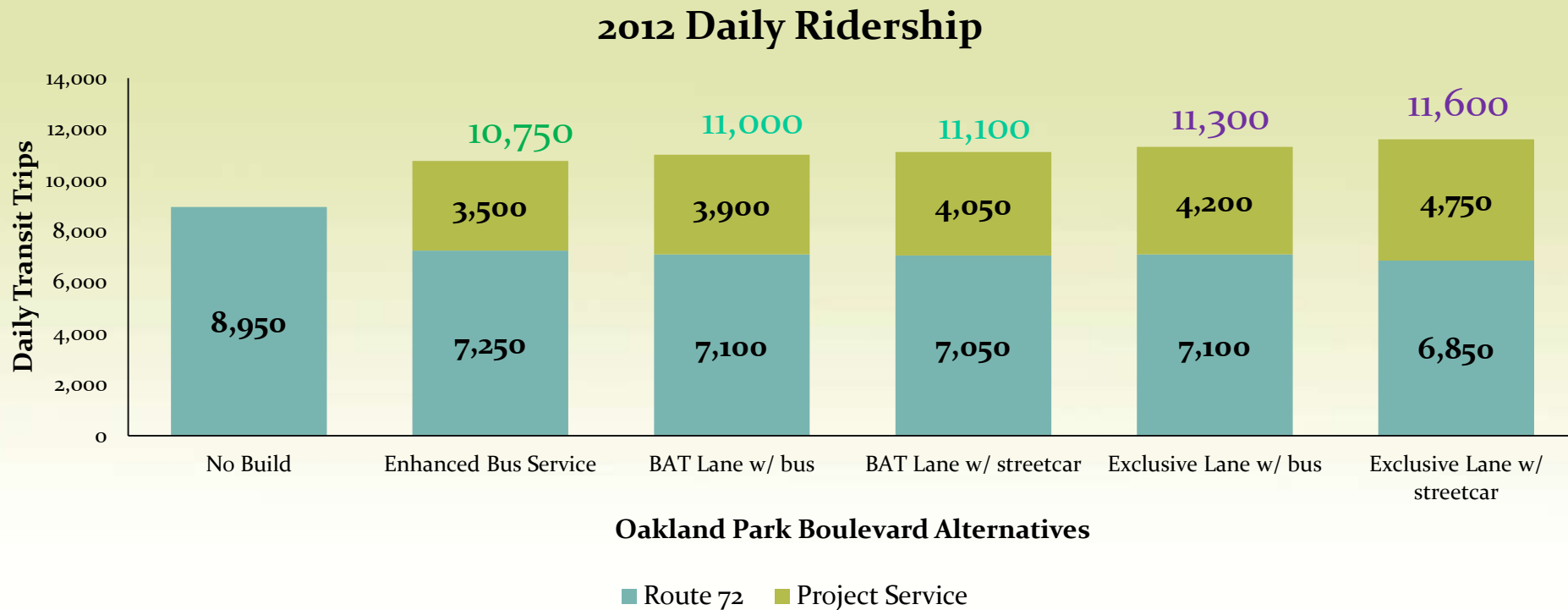


Oakland Park Boulevard Alternative

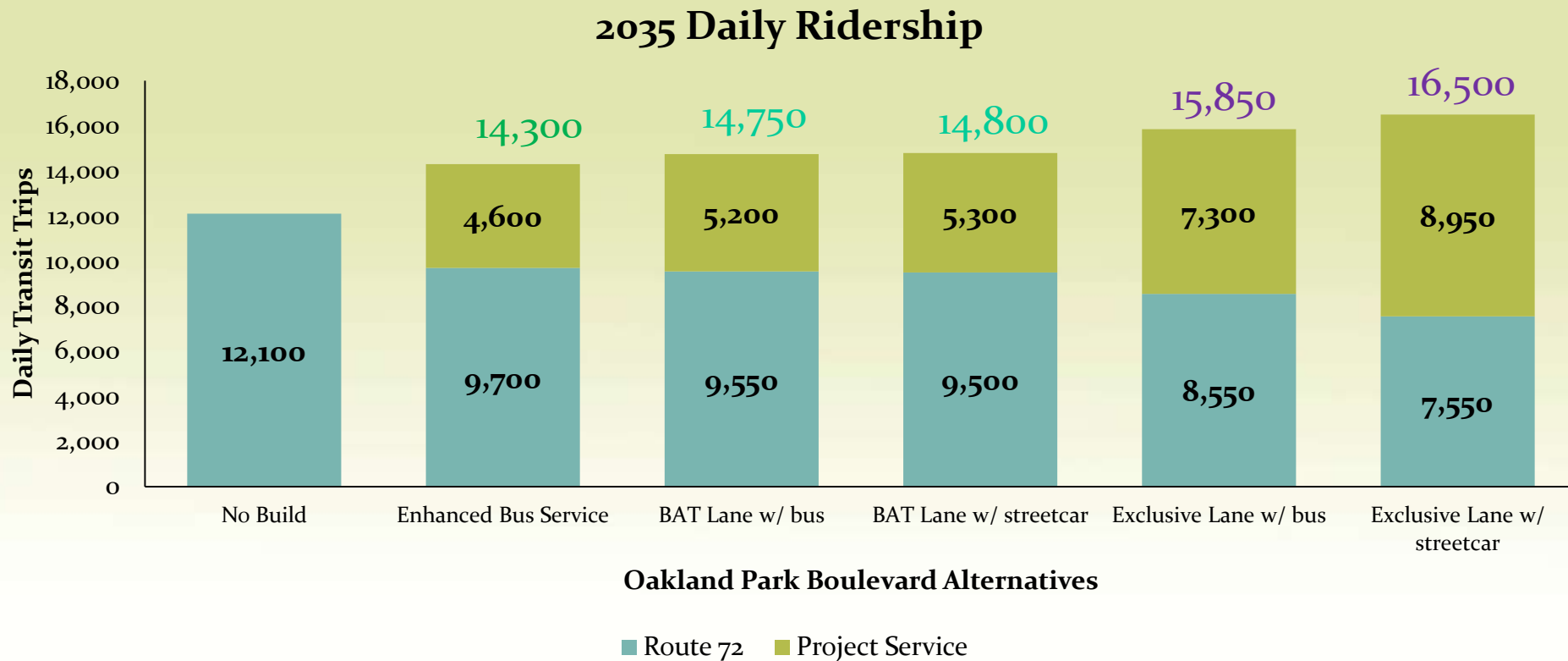
Note: Transit travel time from Sawgrass Mills Mall to SR A1A



# 2012 Ridership - SFSTM



# 2035 Ridership – SFSTM



# Traffic Impacts

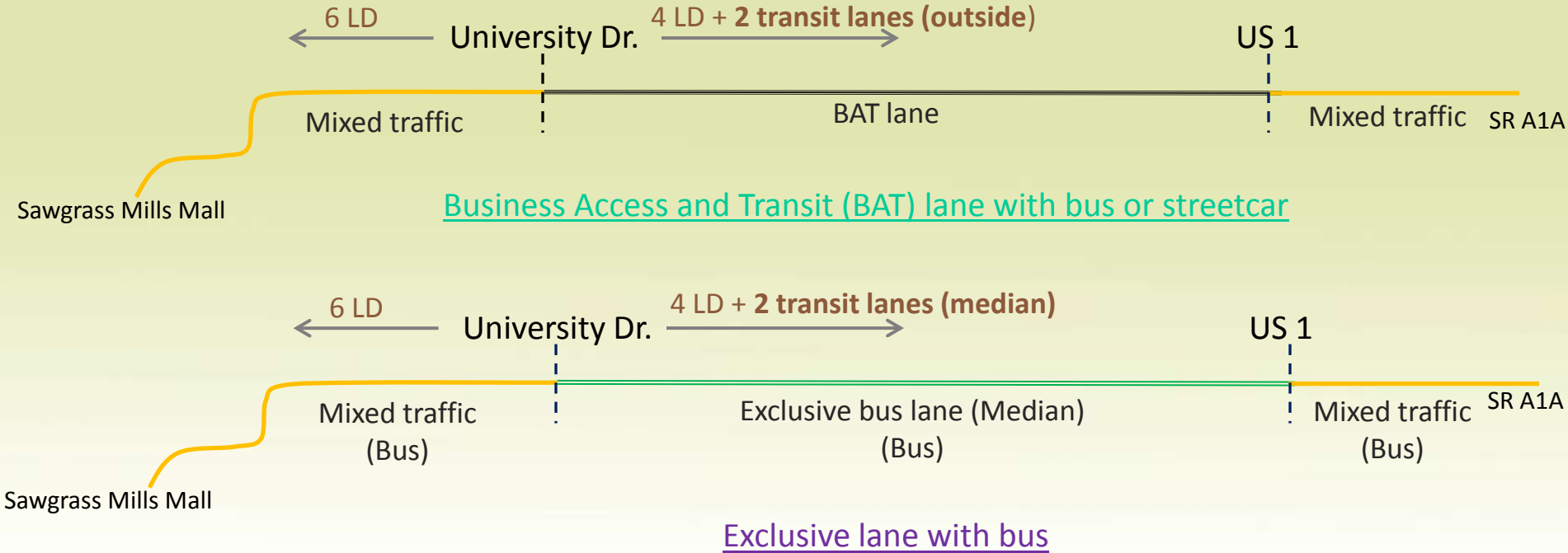
To understand the traffic impact of re-dedicating a lane (fully or partially) for transit use on:

- Oakland Park Boulevard (OPB)
- Roadway facilities parallel to OPB within the study area
- “Cumulative” impact

Refer to the study website at  
<http://oaklandparkboulevardtransitstudy.com/reports/> for details

*Models used: SERPM v6.7 and VISSIM*

# Traffic Impacts

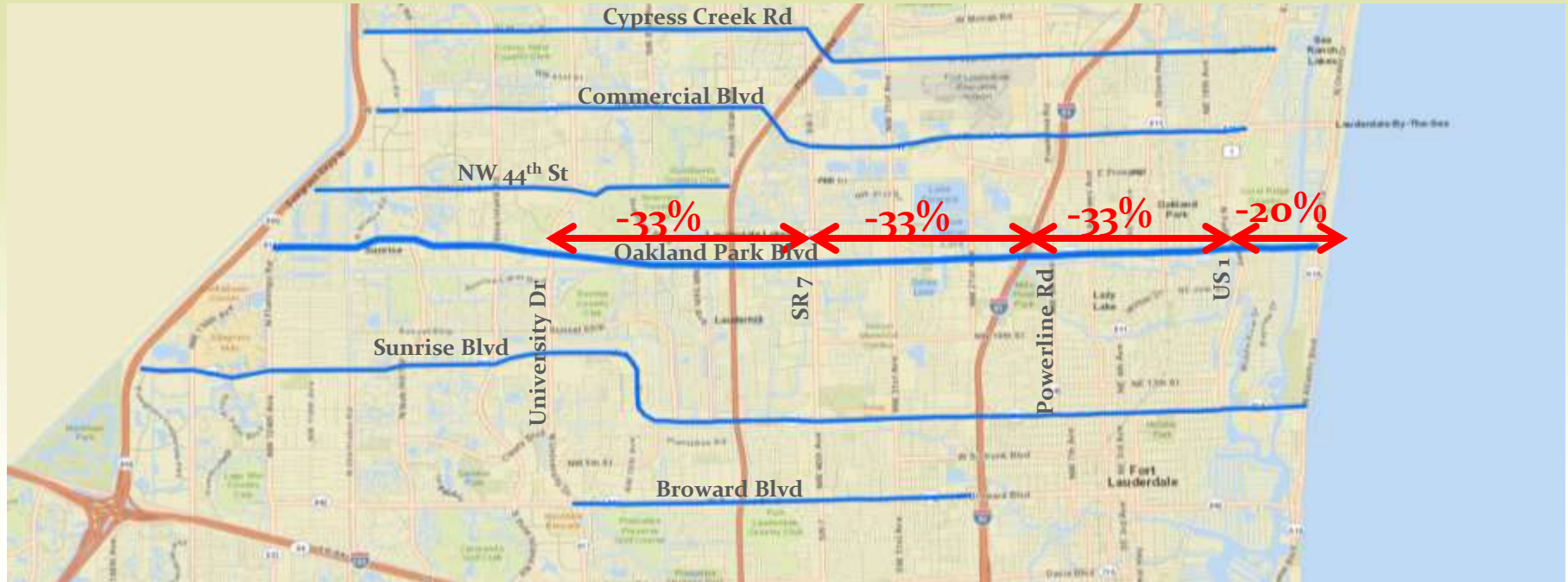


Note: Transit service extends from Sawgrass Mills Mall to SR A1A

# Traffic Impacts – 2035 BAT /Exclusive Lane with Bus/Streetcar

## Change in Roadway Capacity

Red: Decrease in capacity in the segment  
Blue: Roadway segments chosen for this analysis

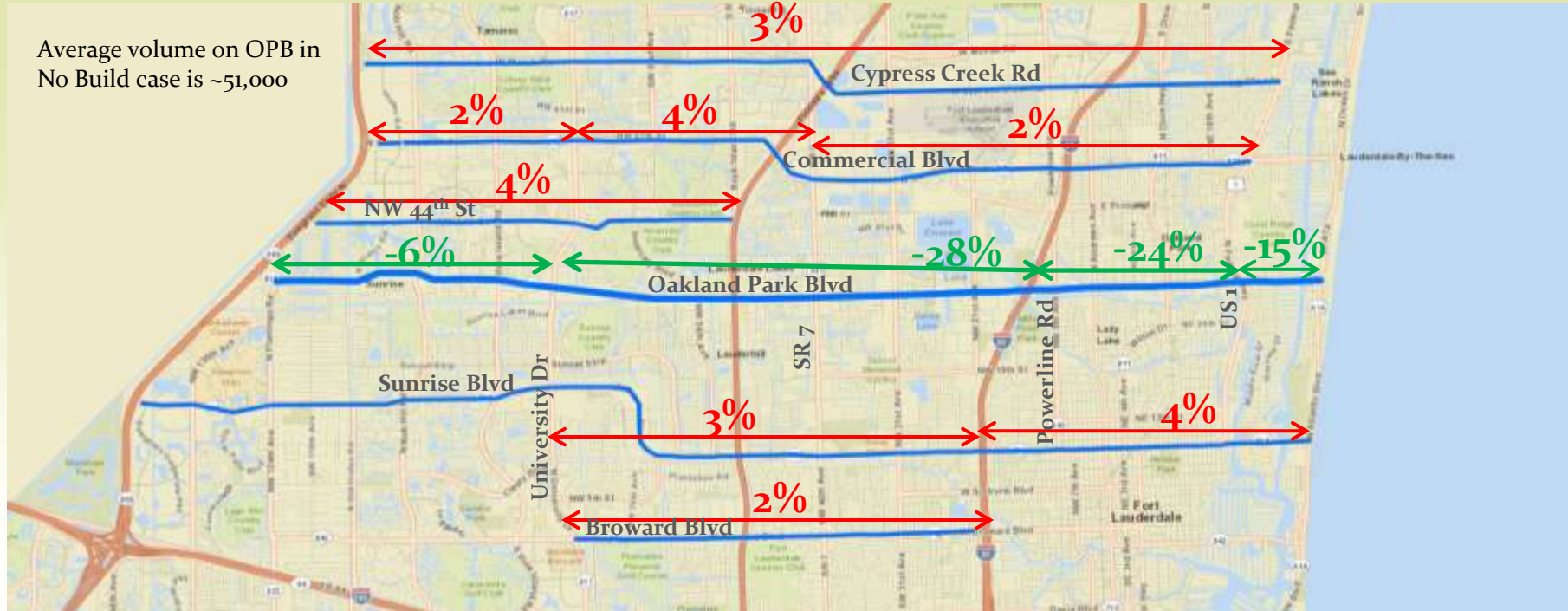


# Traffic Impacts – 2035 BAT/Exclusive Lane with Bus/Streetcar – (cont.)

## Change in Traffic Volume on major east-west roadways within the study area

% reflects change compared to No Build scenario on the respective roadway

Red: Increase in Daily Volume  
Green: Decrease in Daily Volume



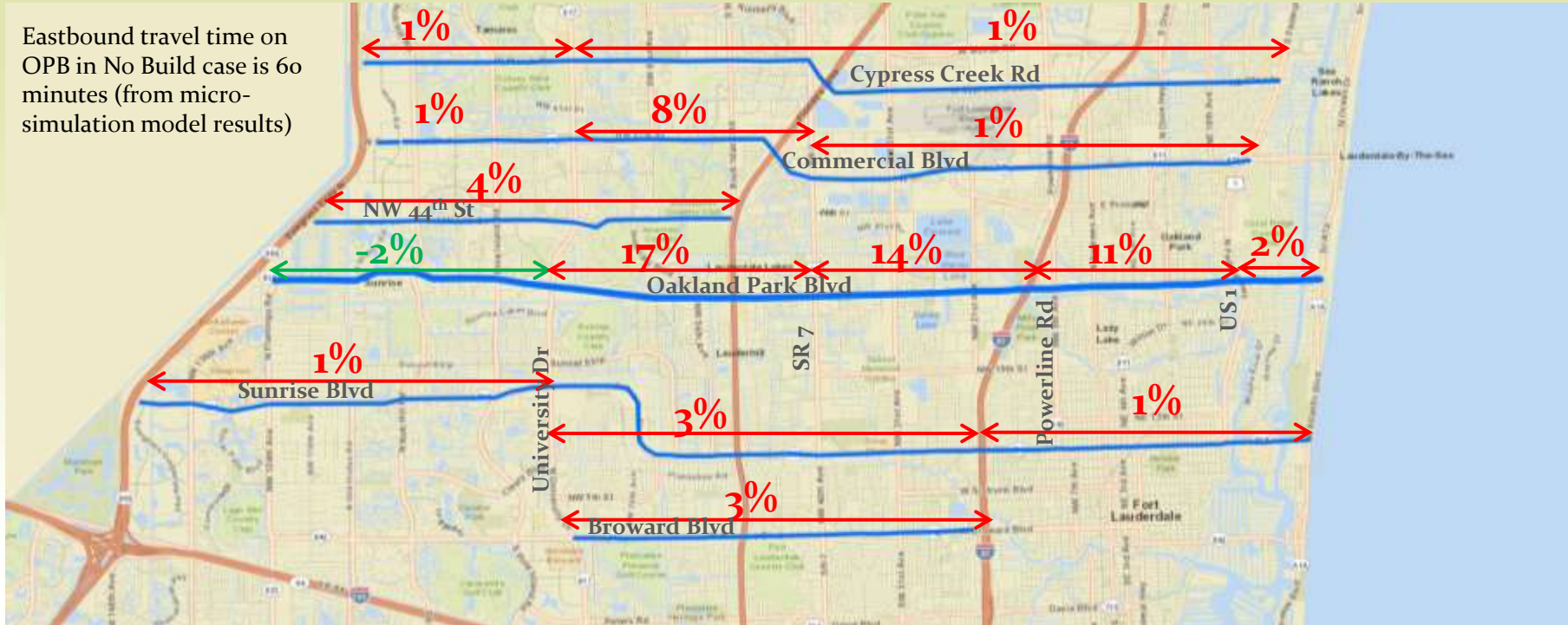


# Traffic Impacts – 2035 BAT /Exclusive Lane with Bus/Streetcar – (cont.)

## Change in Auto Travel Time, Eastbound Direction, Peak Hour

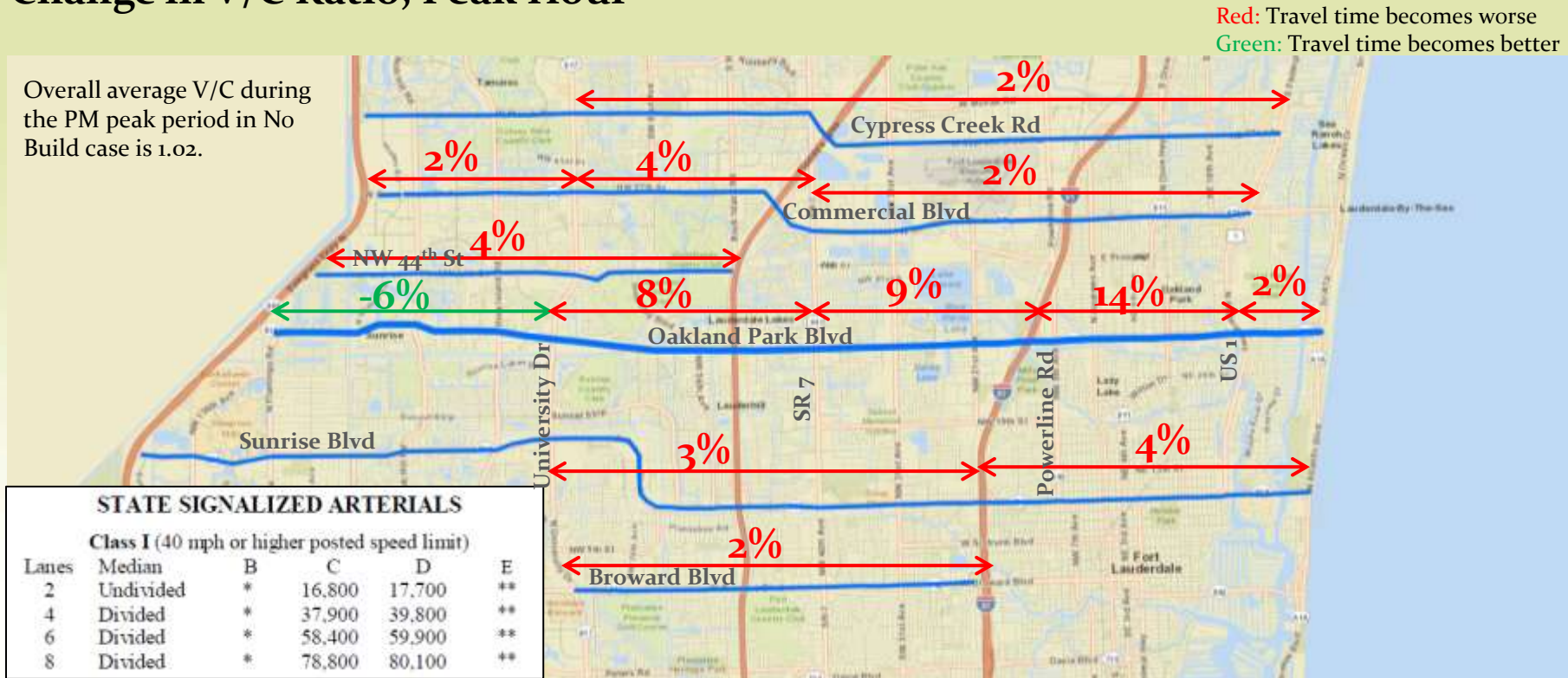
Red: Travel time becomes worse  
Green: Travel time becomes better

Eastbound travel time on OPB in No Build case is 60 minutes (from micro-simulation model results)



# Traffic Impacts – 2035 BAT /Exclusive Lane with Bus/Streetcar – (cont.)

## Change in V/C Ratio, Peak Hour





# Operational Analysis - VISSIM

OPB corridor performance during peak period

- Intersection level of service (LOS)
- Delay
- Transit operations

Videos for public meeting (queue jump lane, bus island, BAT and Exclusive Lane alternatives)

# Traffic Impacts Summary– Year 2035

Influence Area	Performance Measure\Alternative	Existing Conditions	2035 No Build	Enhanced Bus Service	BAT lane with Bus or Streetcar	Exclusive lane with Bus or Streetcar
Oakland Park Boulevard	# of intersections operating below LOS 'D'	9	19	19	10	10
	Delays at major intersections	~2 minutes	~3.5 minutes	~3 minutes	~2 minutes	~5 minutes
	End-to-end Auto Travel Time (one way) (Peak hour)	40 to 45 minutes	65 to 70 minutes	65 to 70 minutes	70 to 75 minutes	70 to 75 minutes
	End-to-end Transit Travel Time (one way)	69 minutes	84 minutes	73 minutes	65 minutes	55 minutes
Study Area	Change in volume/capacity ratio on parallel facilities compared to 2035 No Build	-na-	-na-	Same as 2035 No Build	Up to 10% increase on some segments	Up to 10% increase on some segments
	Change in auto travel time on parallel facilities compared to 2035 No Build	-na-	-na-	Same as 2035 No Build	Up to 8% increase on some segments	Up to 8% increase on some segments
	Per Capita Annual VMT	5,870	5,850	5,850	5,830	5,820
	Per Capital Annual VHD	33	61	61	64	64
County-wide	Per Capita Annual VMT	6,830	7,060	7,060	7,070	7,070
	Per Capital Annual VHD	33	59	58	60	60

VMT – Vehicle Miles Traveled; VHD – Vehicle Hours of Delay; LOS – Level of Service

# Current Project Status

- February 2014 - Short-term improvements (ITS, bus islands, bicycle lane and sidewalk improvements) and long-term solution (BAT Lane with Bus Alternative) approved by the Broward MPO Board,
- Project Development phase (NEPA/PE) not programmed at this time
- Summer 2014 - FDOT to initiate the design phase for the short term improvements