



# Project Development & Environment (PD&E) Study

## SR 90 (SW 8th Street and SW 7th Street)

From SR 9/SW 27<sup>th</sup> Avenue to SR 5/US-1/Brickell Avenue

January 12, 2017

Financial Management Number:

432639-6-22-01

Federal Aid Project Number:

0202-054-P

Efficient Transportation

Decision Making

Number: 14230

# Presentation Outline

- Meeting Goals
- Project Status
- Traffic Analysis
- Alternative Analysis
- Project Discussion

# Project Status

## Meeting Goals

- Understanding of traffic process
- Alternative analysis - 2 build alternatives

## Project Status

- Existing traffic
- Alternative analysis

# Traffic Analysis

## Travel Demand Forecasting

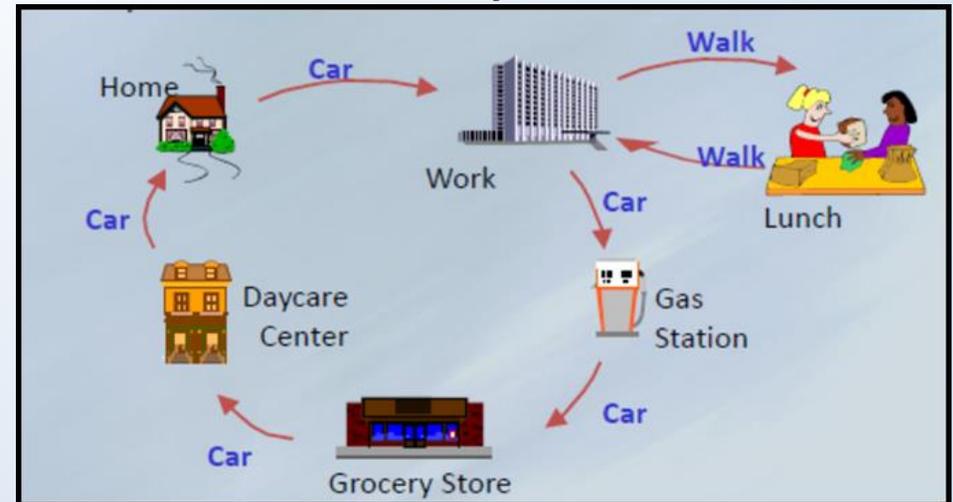
### Key Variables

- Land Use Data
- Population Data
- Employment Data
- Transportation Network
- User Characteristics
- Travel Characteristics

### Data Sources

- Local Planning Agencies
- Census Data
- Household Travel Surveys
- Transit Surveys

SERPM 7 – Activity Based Model



# Traffic Analysis

## Multimodal Level of Service

Multimodal level of service (LOS) is a measure used to evaluate all modes of transportation (automobile, pedestrian, bicycle, and transit) in order to assess the efficiency of the transportation facility. A LOS A being the best and LOS F being the worst.

LOS	Automobile	Bicycle	Pedestrian	Bus
A/B				 >4 buses/hour
C/D				 2 to 4 buses/hour
E/F				 ≤ 1 bus/hour

# Traffic Analysis

## Multimodal Level of Service- Automobiles

### Intersections

- Cycle length
- Signal timing
- Geometry/traffic volumes

### Segments

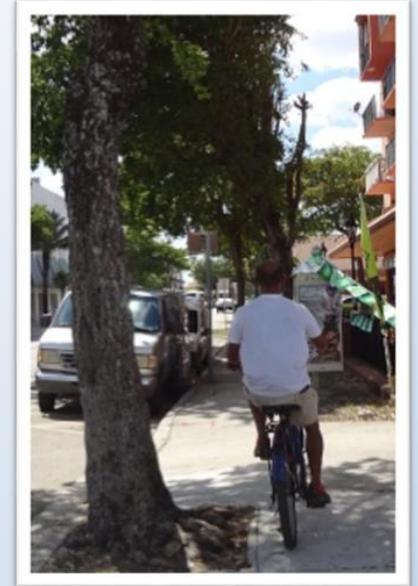
- Traffic factors
- Geometry
- Traffic volumes and speed
- Parking Activity



# Traffic Analysis

## Multimodal Level of Service - Bicycles

- Auto lane width
- Bike pavement condition
- Presence of paved shoulder, bike lane or side path
- Bike delay at intersections
- Auto volumes and speeds



# Traffic Analysis

## Multimodal Level of Service- Pedestrians

- Sidewalk presence
- Sidewalk/roadway separation
- Sidewalk roadway barrier
- Auto volumes and speeds



# Traffic Analysis

## Multimodal Level of Service - Transit

- Bus frequency
- Passenger load factor (ridership/capacity)
- Amenities at stops
- Bus stop configuration



# Traffic Analysis

## Multimodal Segment LOS for SW 8<sup>th</sup> Street, Base Year 2015

Segment		Mode			
From	To	Auto	Bike	Ped	Bus
SW 27 <sup>th</sup> Ave.	SW 24 <sup>th</sup> Ave.	B	D	C	A
SW 24 <sup>th</sup> Ave.	SW 22 <sup>nd</sup> Ave.	D	D	C	A
SW 22 <sup>nd</sup> Ave.	SW 21 <sup>st</sup> Ave.	D	D	C	A
SW 21 <sup>st</sup> Ave.	SW 19 <sup>th</sup> Ave.	C	D	C	A
SW 19 <sup>th</sup> Ave.	SW 17 <sup>th</sup> Ave.	F	D	C	A
SW 17 <sup>th</sup> Ave.	SW 12 <sup>th</sup> Ave.	F	D	C	A
SW 12 <sup>th</sup> Ave.	SW 11 <sup>th</sup> Ave.	B	D	C	A
SW 11 <sup>th</sup> Ave.	SW 8 <sup>th</sup> Ave.	F	D	C	A
SW 8 <sup>th</sup> Ave.	SW 5 <sup>th</sup> Ave.	D	D	C	A
SW 5 <sup>th</sup> Ave.	SW 4 <sup>th</sup> Ave.	F	D	C	A
SW 4 <sup>th</sup> Ave.	SW 3 <sup>rd</sup> Ave.	C	D	C	A
SW 3 <sup>rd</sup> Ave.	SW 2 <sup>nd</sup> Ave.	F	D	C	A
SW 2 <sup>nd</sup> Ave.	SW 1 <sup>st</sup> Ave.	C	D	C	A
SW 1 <sup>st</sup> Ave.	S. Miami Ave.	D	D	C	F
S. Miami Ave.	Brickell Ave.	F	E	C	F
<b>Facility</b>		*	E	C	A

# Traffic Analysis

## Multimodal Segment LOS for SW 7<sup>th</sup> Street, Base Year 2015

Segment		Mode			
From	To	Auto	Bike	Ped	Bus
Brickell Ave.	S. Miami Ave.	D	E	C	F
S. Miami Ave.	SW 1 <sup>st</sup> Ave.	F	D	C	F
SW 1 <sup>st</sup> Ave.	SW 2 <sup>nd</sup> Ave.	F	E	C	A
SW 2 <sup>nd</sup> Ave.	SW 3 <sup>rd</sup> Ave.	E	D	C	B
SW 3 <sup>rd</sup> Ave.	SW 4 <sup>th</sup> Ave.	F	E	C	A
SW 4 <sup>th</sup> Ave.	SW 8 <sup>th</sup> Ave.	B	D	C	A
SW 8 <sup>th</sup> Ave.	SW 12 <sup>th</sup> Ave.	C	D	C	A
SW 12 <sup>th</sup> Ave.	SW 16 <sup>th</sup> Ave.	A	D	C	A
SW 16 <sup>th</sup> Ave.	SW 17 <sup>th</sup> Ave.	F	D	C	A
SW 17 <sup>th</sup> Ave.	SW 19 <sup>th</sup> Ave.	B	D	C	A
SW 19 <sup>th</sup> Ave.	SW 22 <sup>nd</sup> Ave.	C	D	C	A
SW 22 <sup>nd</sup> Ave.	Beacom Blvd.	B	E	C	A
Beacom Blvd.	SW 27 <sup>th</sup> Ave.	F	D	C	A
<b>Facility</b>		*	F	C	A

# Alternative Analysis

- **No Build**
- **Transportation Systems Management and Operations (TSM&O)**

## Build Alternatives

- **2 Lanes + Transit**
- **2 Way Alternative**
- **3 Lanes Reversed**
- **3 Lane Alternative**

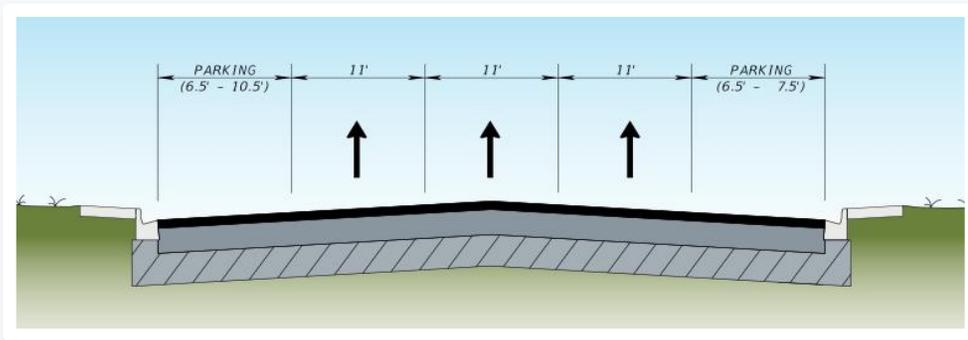
# Alternative Analysis

## PROS/CONS

- **Engineering**
  - Safety
  - Access
  - Multimodal Level of Service
  - Maintenance of Traffic
  - Cost – Right of Way/Construction
- **Environmental**
  - Cultural Resources
  - Physical Effects – Contamination, Noise
  - Natural Resources – Water Quality

# Alternative Analysis

## NO BUILD ALTERNATIVE – SW 8TH/SW 7TH STREETS

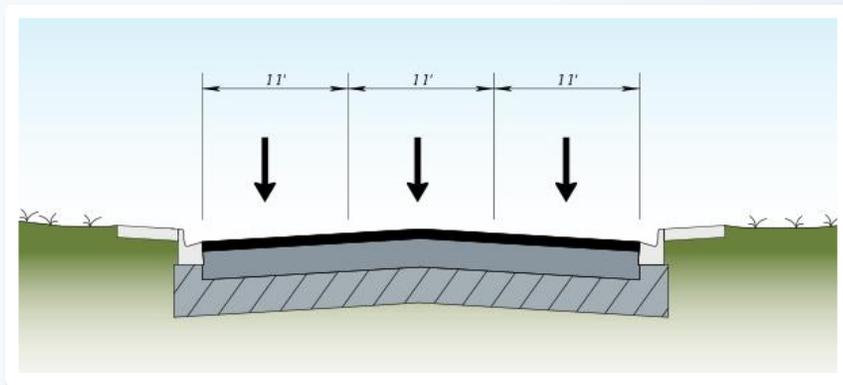


SW 8th Street

**NO EXPENDITURE OF FUNDS**

**PROS- NO IMPACTS**

- MAINTENANCE OF TRAFFIC
- ENVIRONMENTAL



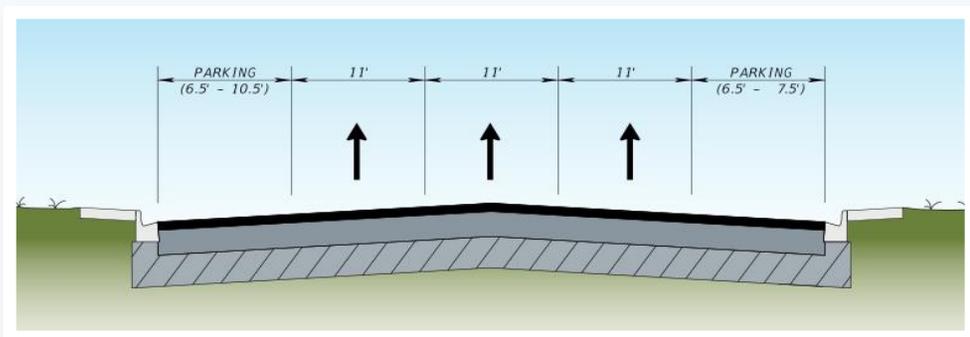
SW 7th Street

**CONS – NO IMPROVEMENTS**

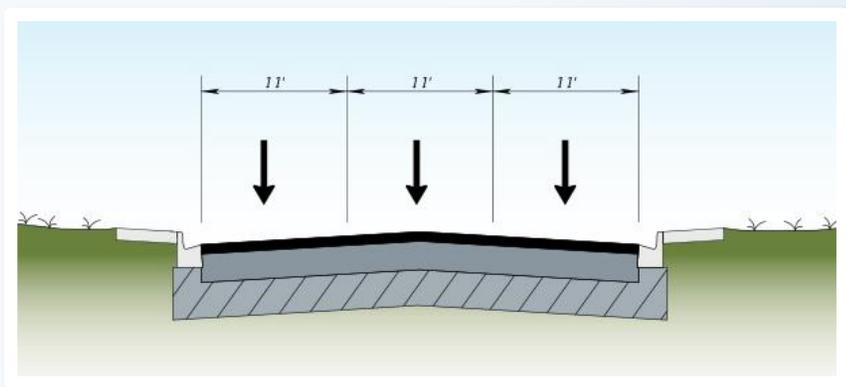
- SAFETY
- MULTIMODAL LEVEL OF SERVICE
- ACCESS IMPROVEMENTS
- COMPLETE STREETS

# Alternative Analysis

## TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSM&O)ALTERNATIVE –SW 8TH/SW 7TH STREETS



SW 8th Street



SW 7th Street

### PROS

- MINOR SAFETY IMPROVEMENTS
- MULTIMODAL LEVEL OF SERVICE  
Improvements to Automobiles
- MAINTENANCE OF TRAFFIC
- NO ENVIRONMENTAL IMPACTS

### CONS

- NO ACCESS/SAFETY IMPROVEMENTS AT I-95

# Alternative Analysis

## PROS/CONS

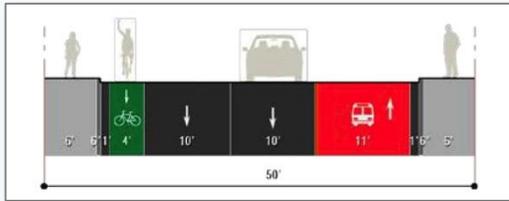
- **Engineering**
  - Safety
  - Access
  - Multimodal Level of Service
  - Maintenance of Traffic
  - Cost – Right of Way/Construction
- **Environmental**
  - Cultural Resources
  - Physical Effects – Contamination, Noise
  - Natural Resources – Water Quality

# Alternative Analysis

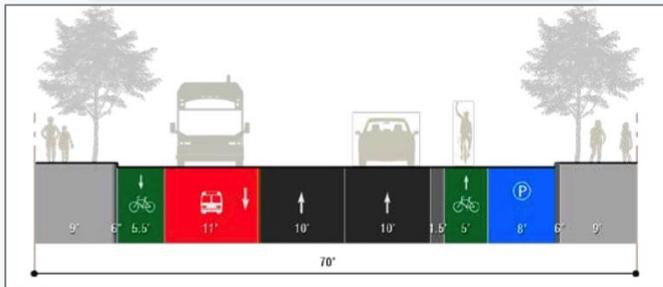
## BUILD ALTERNATIVES – SW 8<sup>TH</sup>/SW 7<sup>TH</sup> STREETS

### 2 Lanes + Transit

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



Mixed Traffic  
Flow Direction



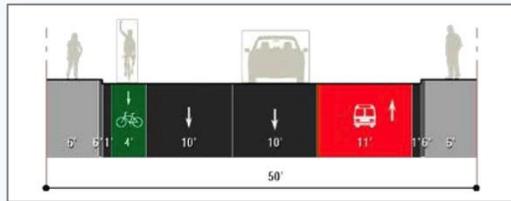
Transit Flow  
Direction

# Alternative Analysis

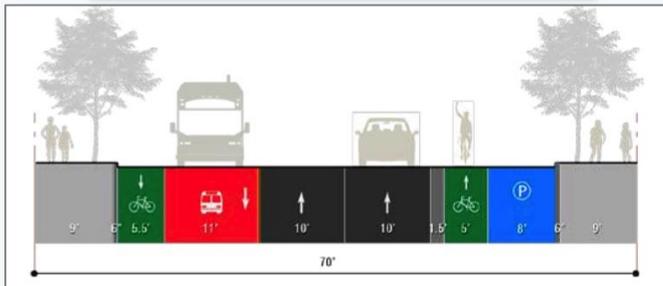
## BUILD ALTERNATIVES – SW 8<sup>TH</sup>/SW 7<sup>TH</sup> STREETS

### 2 Lanes + Transit

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



Mixed Traffic  
Flow Direction



Transit Flow  
Direction

### PROS

- **MULTIMODAL LEVEL OF SERVICE**  
Improvements to bicycles & transit
- **COMPLETE STREETS**

### CONS

- **MULTIMODAL LEVEL OF SERVICE**  
Impacts to pedestrians & automobiles
- **ACCESS IMPACTS**
- **MAINTENANCE OF TRAFFIC**
- **HIGH COST**
- **ENVIRONMENTAL- Contamination**

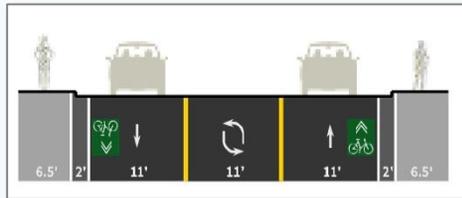
**NOT PART OF THE STRATEGIC MIAMI  
AREA RAPID TRANSIT (SMART) PLAN**

# Alternative Analysis

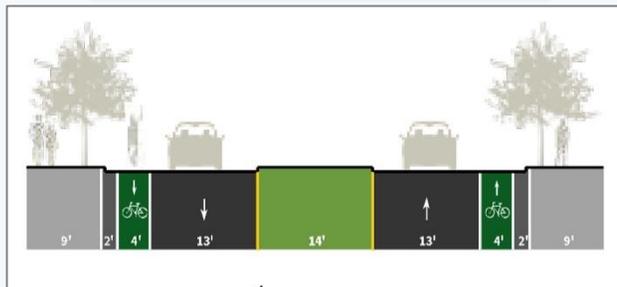
## BUILD ALTERNATIVES – SW 8<sup>TH</sup>/SW 7<sup>TH</sup> STREETS

### 2 Way

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



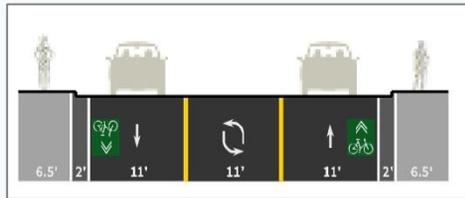
Mixed Traffic  
Flow Direction

# Alternative Analysis

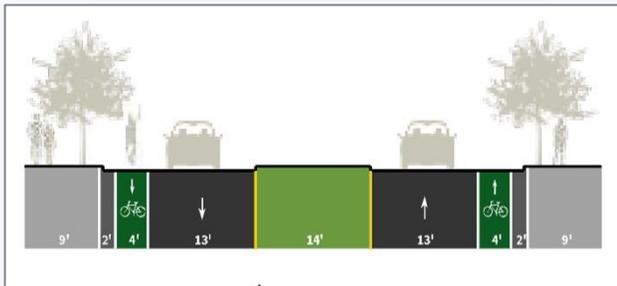
## BUILD ALTERNATIVES – SW 8<sup>TH</sup>/SW 7<sup>TH</sup> STREETS

### 2 Way

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



Mixed Traffic  
Flow Direction

### PROS

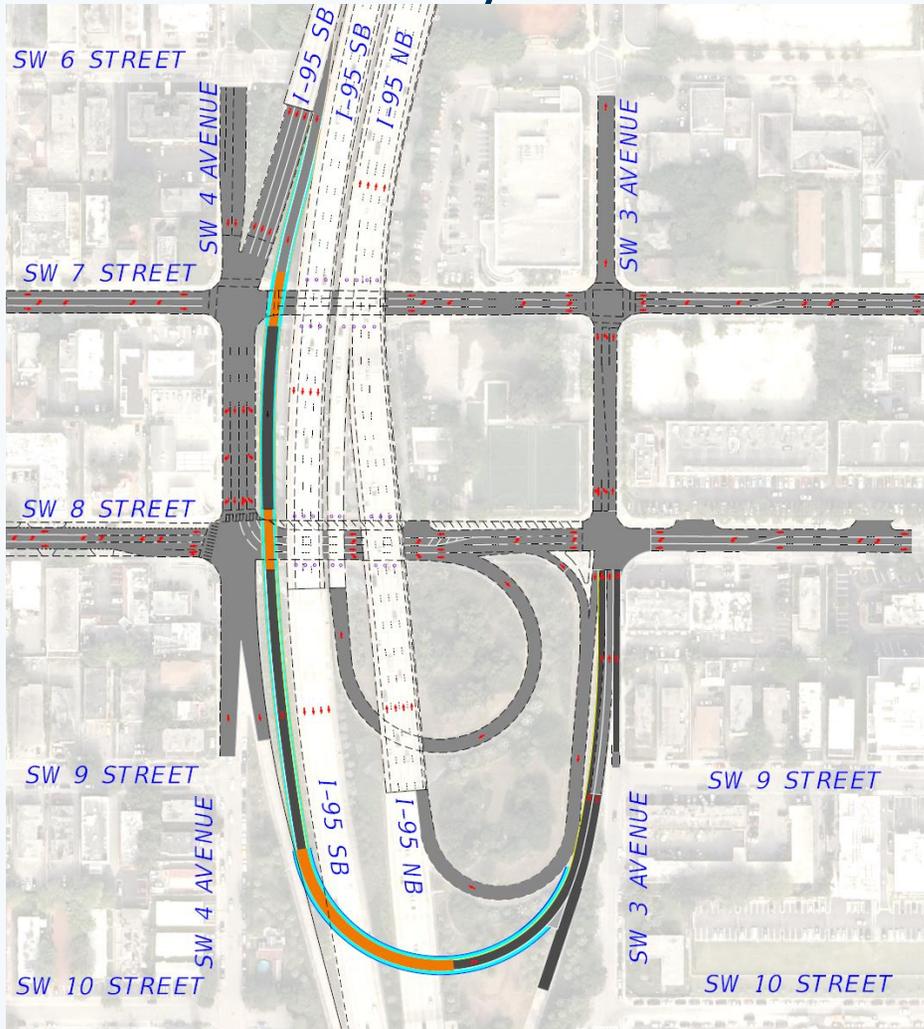
- **MULTIMODAL LEVEL OF SERVICE**  
Improvements to bicycles
- **COMPLETE STREETS**

### CONS - IMPACTS

- **SAFETY**
- **MULTIMODAL LEVEL OF SERVICE**  
Impacts to automobiles
- **ACCESS - Impacts to business**
- **HIGH COST**
- **MAINTENANCE OF TRAFFIC**
- **ENVIRONMENTAL- Contamination**

# Alternative Analysis

## BUILD ALTERNATIVES – SW 8TH/SW 7TH STREETS 2 Way



### PROS

- BETTER ACCESS TO I-95 FROM EITHER DIRECTION OF TRAVEL

### CONS

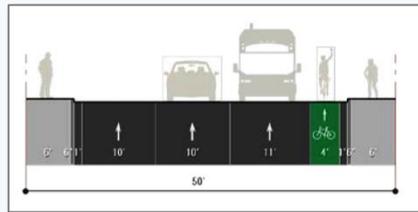
- R/W IMPACTS
- NEW SIGNALS AND POTENTIAL RECONSTRUCTION REQUIRED

# Alternative Analysis

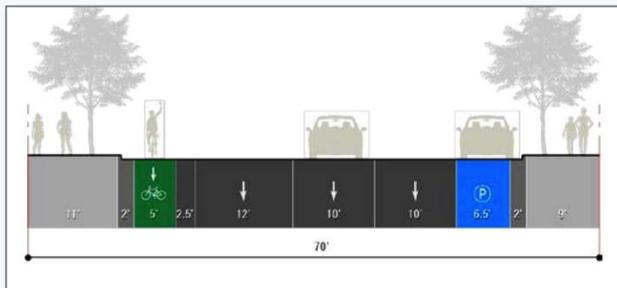
## PRELIMINARY BUILD SCENARIOS – SW 8TH/SW 7TH STREETS

### 3 Lanes Reversed

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



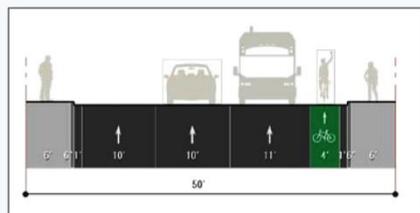
➔ Mixed Traffic Flow Direction

# Alternative Analysis

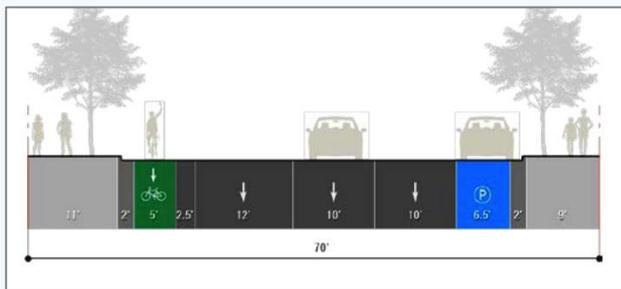
## PRELIMINARY BUILD SCENARIOS – SW 8TH/SW 7TH STREETS

### 3 Lanes Reversed

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



➔ Mixed Traffic Flow Direction

### PROS

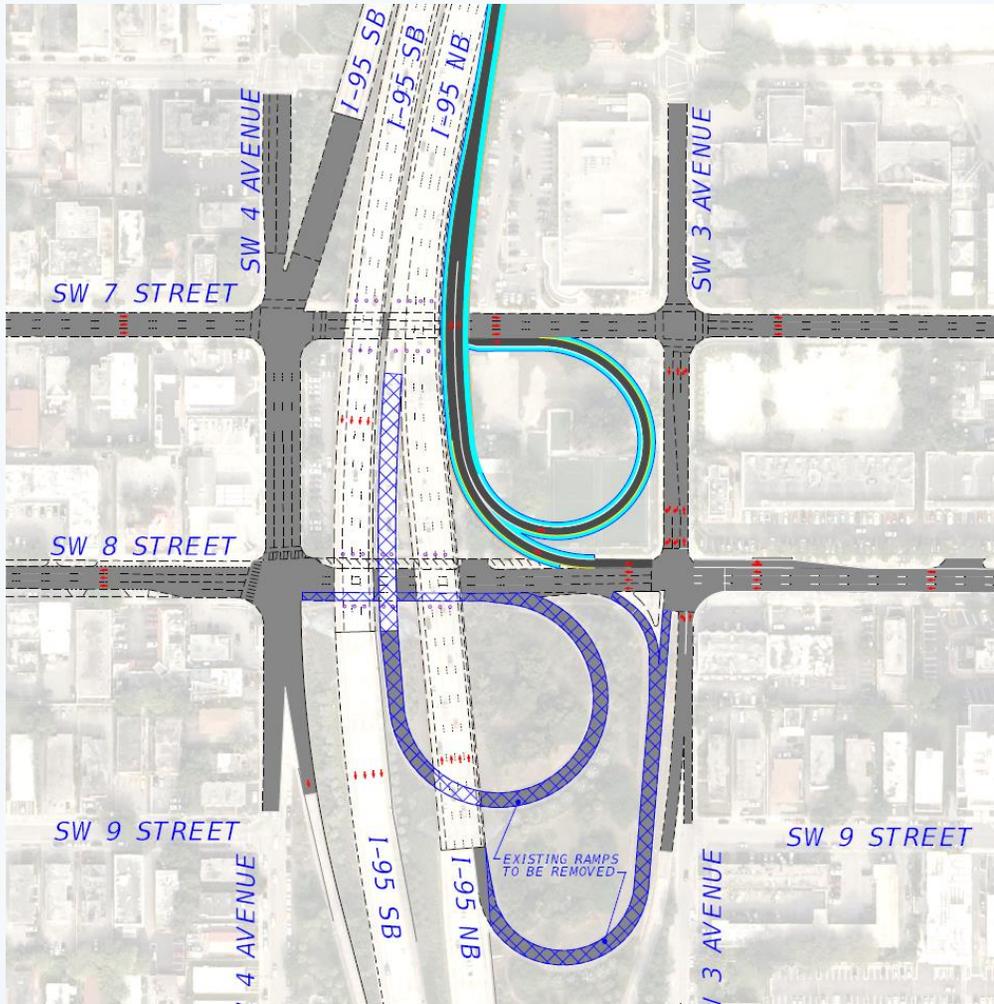
- SAFETY
- MULTIMODAL LEVEL OF SERVICE
- ACCESS FROM BRICKELL KEY
- COMPLETE STREETS

### CONS

- HIGH COST
- ACCESS TO BRICKELL KEY
- MAINTENANCE OF TRAFFIC

# Alternative Analysis

## PRELIMINARY BUILD SCENARIOS – SW 8TH/SW 7TH STREETS 3 Lanes Reversed



### PROS

- SAFETY IMPROVEMENTS
- ACCESS TO NB I-95 FROM SW 7<sup>TH</sup> STREET

### CONS

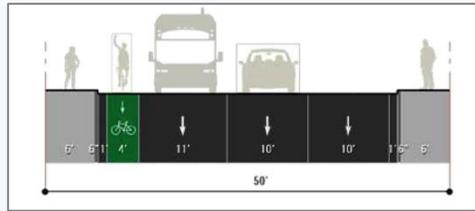
- R/W IMPACTS
- NEW MAST ARMS
- POTENTIAL RECONSTRUCTION REQUIRED

# Alternative Analysis

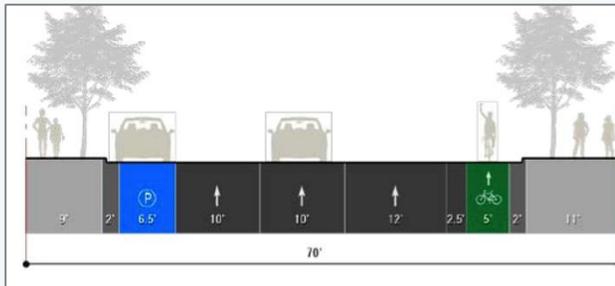
## PRELIMINARY BUILD SCENARIOS – SW 8TH/SW 7TH STREETS

### 3 Lane Alternative

SW 7<sup>TH</sup>  
Street



SW 8<sup>TH</sup>  
Street



➡ Mixed Traffic Flow Direction

### PROS

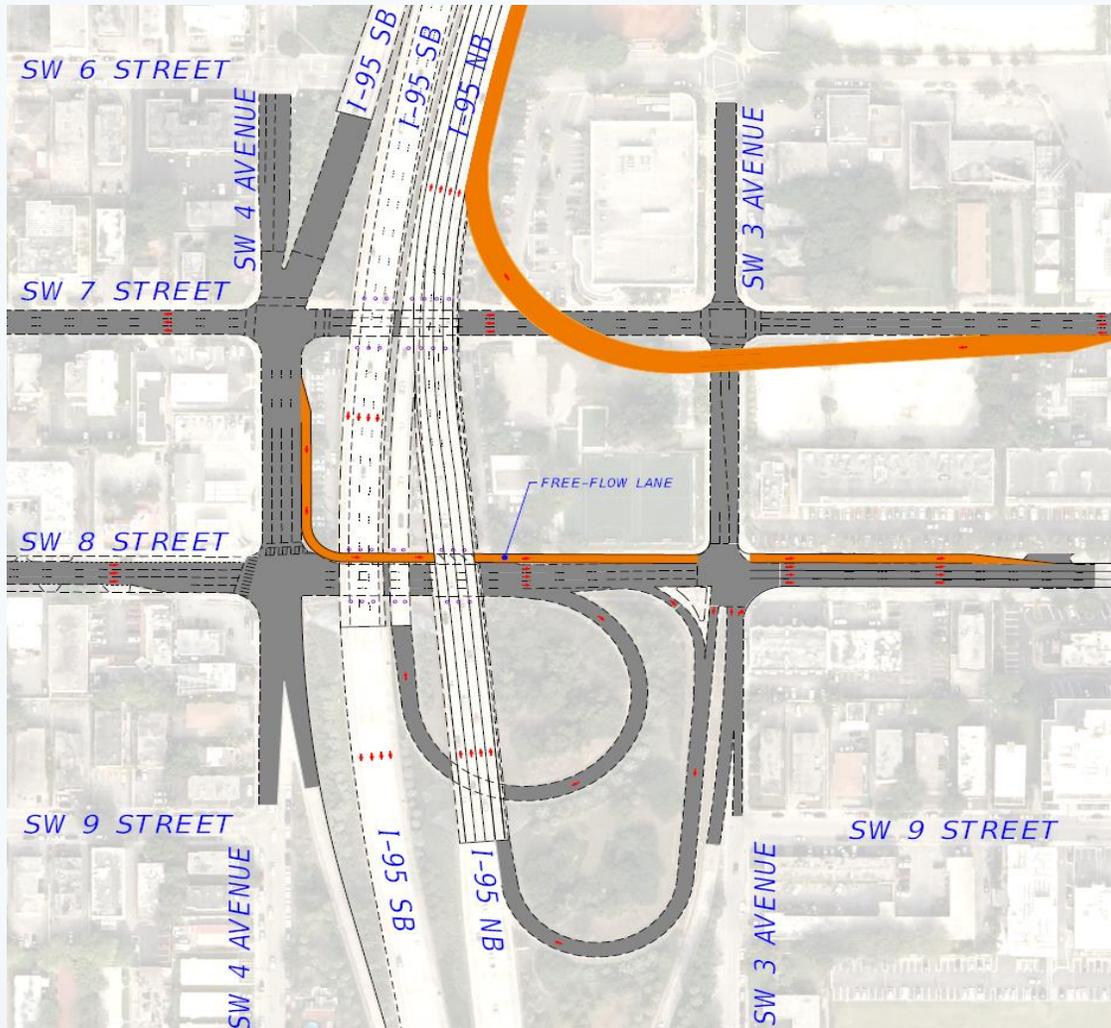
- SAFETY
- MULTIMODAL LEVEL OF SERVICE
- ACCESS TO BRICKELL KEY
- MAINTENANCE OF TRAFFIC
- COMPLETE STREETS
- LOW COST

### CONS

- ACCESS TO BRICKELL KEY

# Alternative Analysis

## PRELIMINARY BUILD SCENARIOS – SW 8TH/SW 7TH STREETS 3 Lane Alternative



### PROS

- SAFETY IMPROVEMENTS
- FREE FLOW RAMP (TURBO LANE)
- I-95 SB ACCESS
- NEW RAMP AT SW 7<sup>TH</sup> STREET
- DIRECT ACCESS TO I-95 NB

### CONS

- R/W IMPACTS (MINIMIZED)
- POTENTIAL RECONSTRUCTION

# Questions / Comments

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