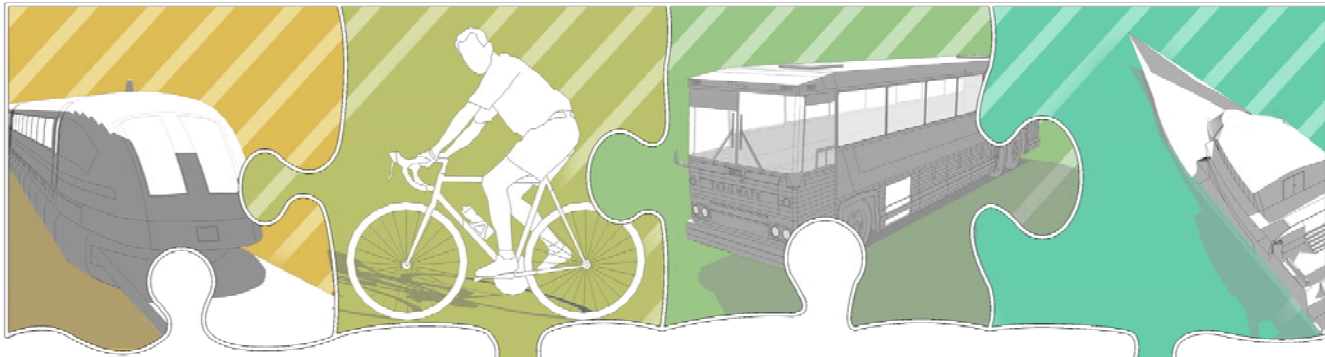


B r o w a r d M P O



2 0 3 5 L R T P  
p u t t i n g t h e p i e c e s t o g e t h e r

# Travel Demand Modeling: Deficiency Analysis

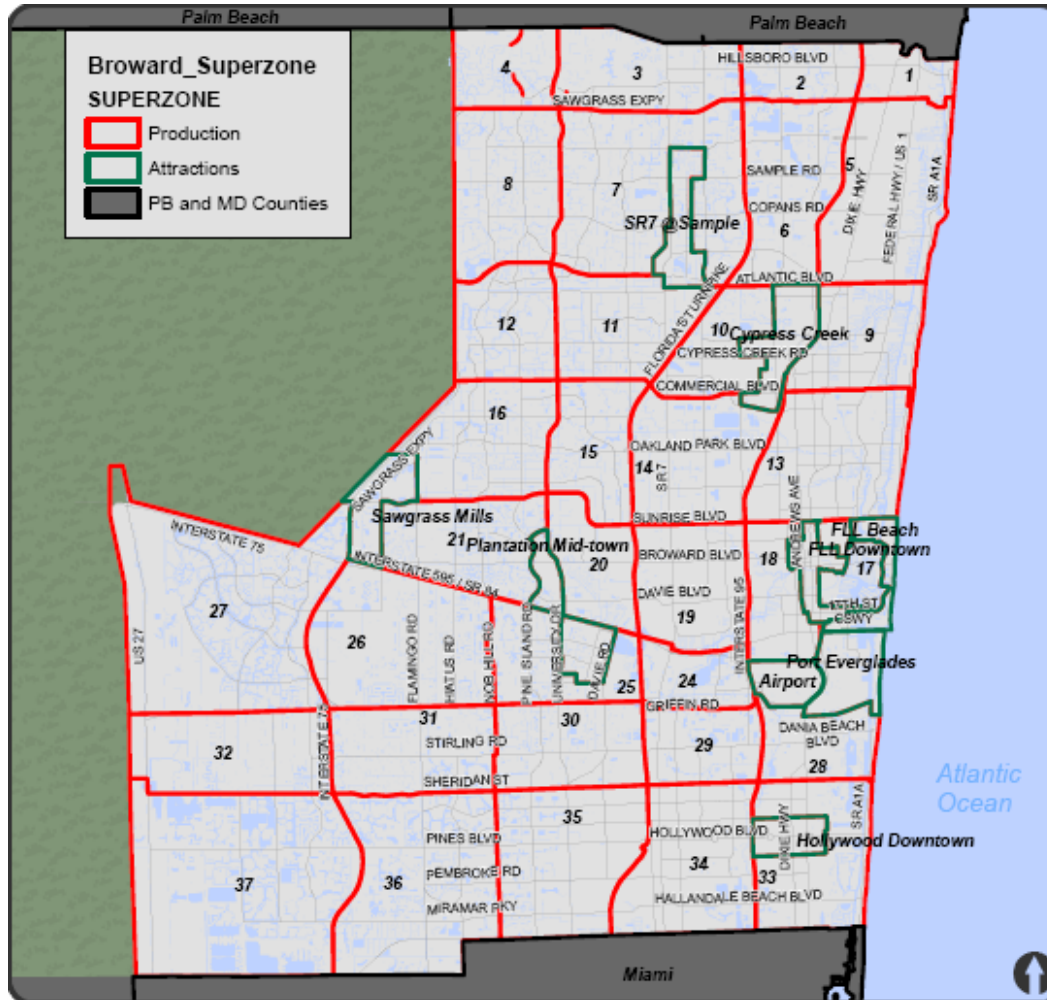
November 2008

# Discussion Topics

- ✓ **Background**
- ✓ **2035 Socio-economic Characteristics**
- ✓ **Transportation System Deficiency Analysis**
- ✓ **Preliminary Needs Assessment Information**



# Superzones



**45 Superzones**

**(including 10 Attractions Superzones)**



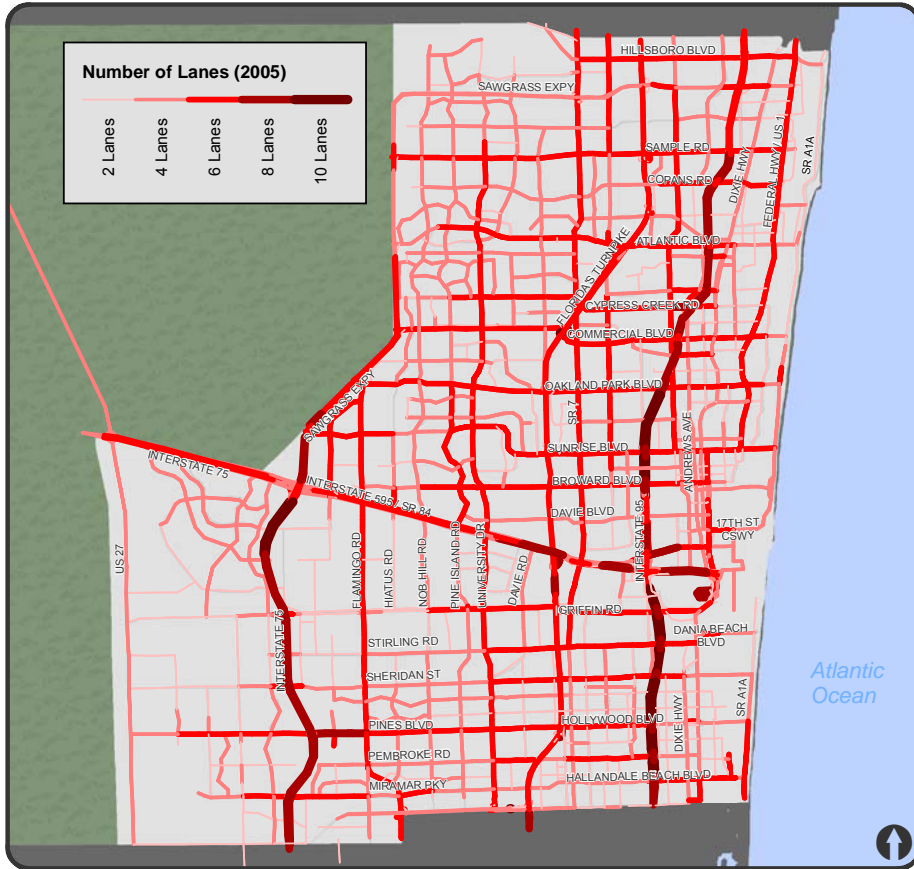
# E + C Transit Network

- ✓ Includes existing 2005 network and committed projects (TIP);
- ✓ Includes US 1 Breeze, Rte 2 Breeze, Rte 7 Breeze serving Miami Downtown
- ✓ Does not include:
  - ☒ Express buses on I-595
  - ☒ Downtown Ft. Lauderdale streetcar
  - ☒ Extension of bus service into Palm Beach County

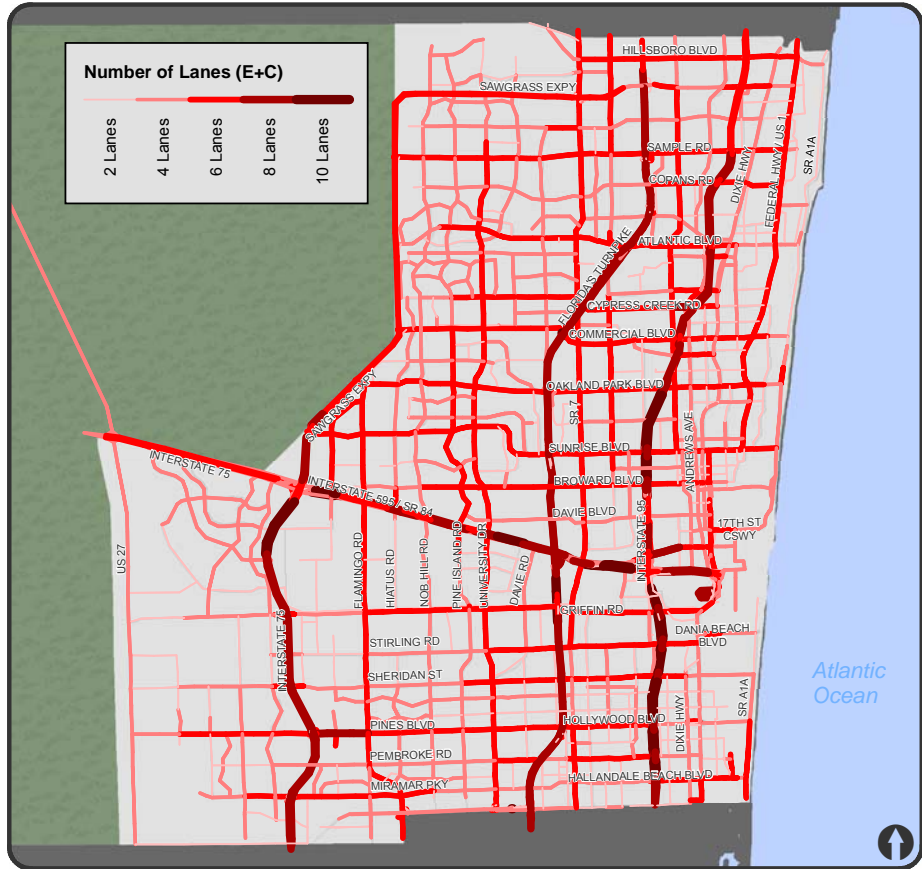


# E + C Highway Network

## Existing # of Lanes (2005)



## Number of Lanes (E+C)



### Legend

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

### Legend

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

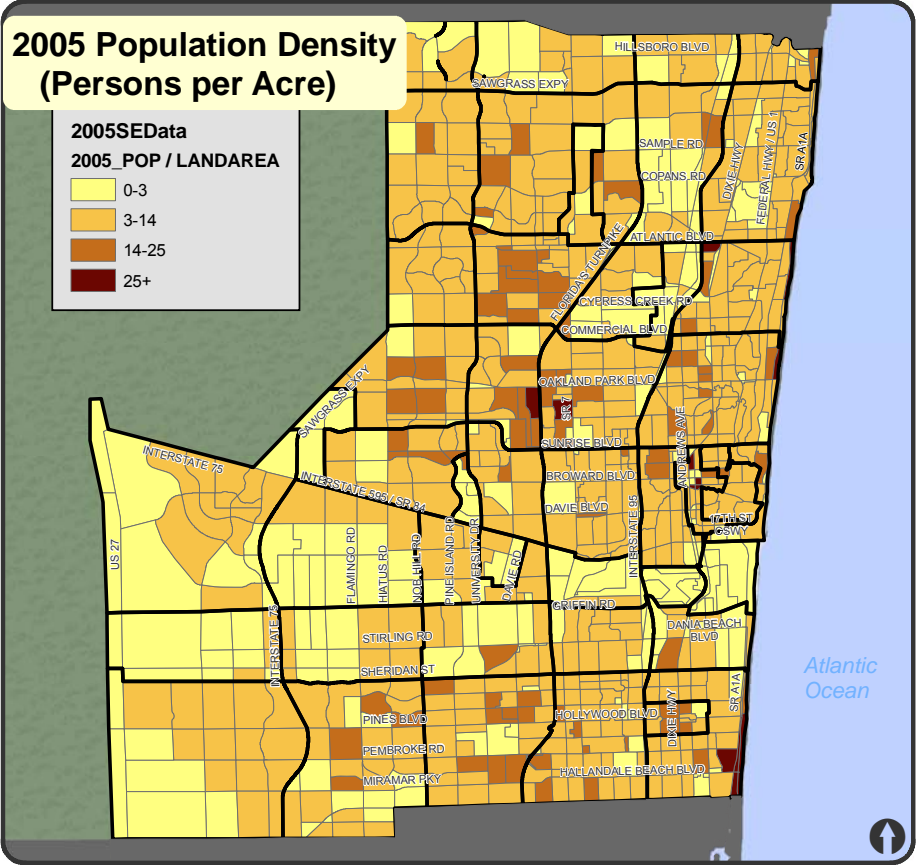
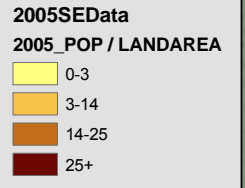
# Aggregate Socio-economic Data

	2005	2035	Growth	%Growth
Population	1,747	2,251	503	29%
Households	694	839	144	21%
Vehicles	1,099	1,342	243	22%
Workers	846	1,052	206	24%
Hotel Rooms	32	32	-	-
<b>Employment</b>				
<b>Total</b>	736	1,011	276	37%
<b>Industrial</b>	86	132	51	59%
<b>Commercial</b>	227	330	113	50%
<b>Service</b>	423	519	112	26%

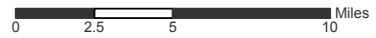
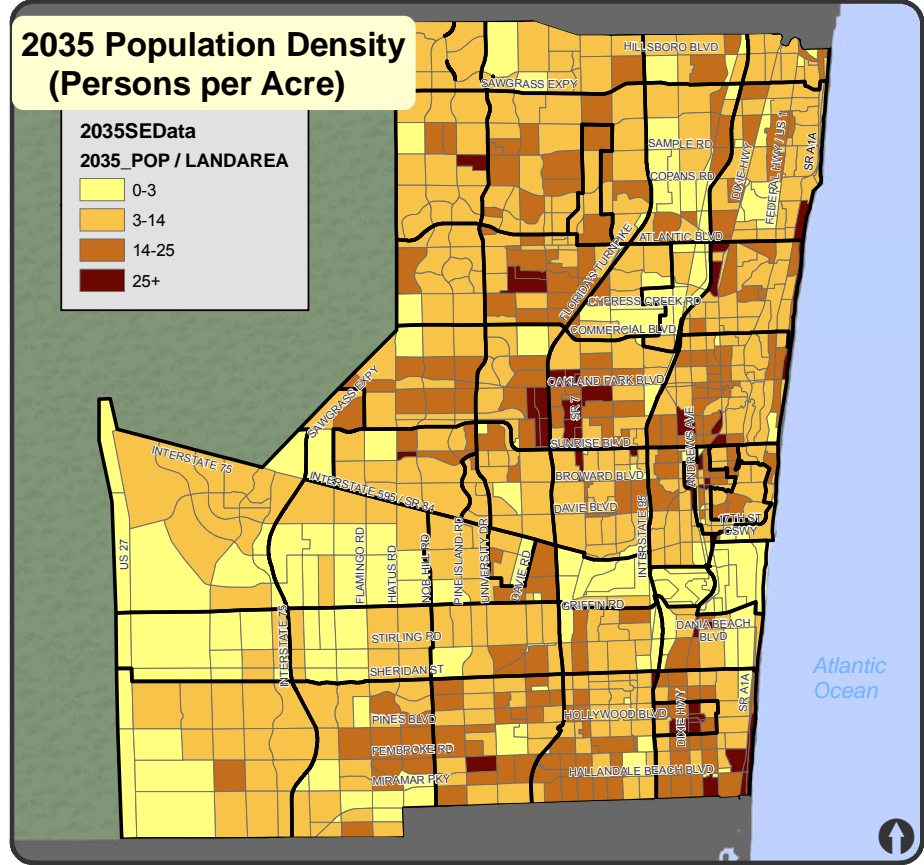
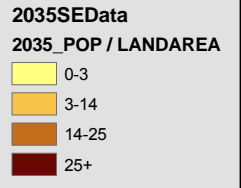


# Population Density

**2005 Population Density  
(Persons per Acre)**



**2035 Population Density  
(Persons per Acre)**



**Legend**

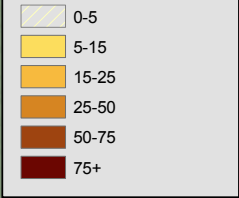
- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies
- Superzones

**Legend**

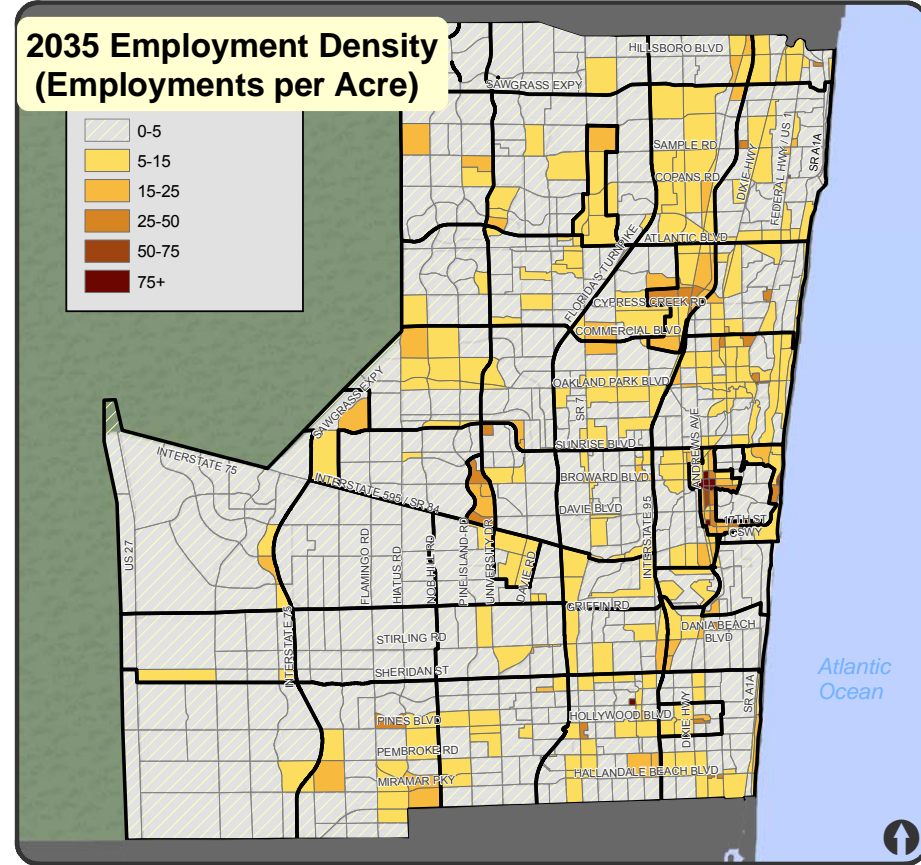
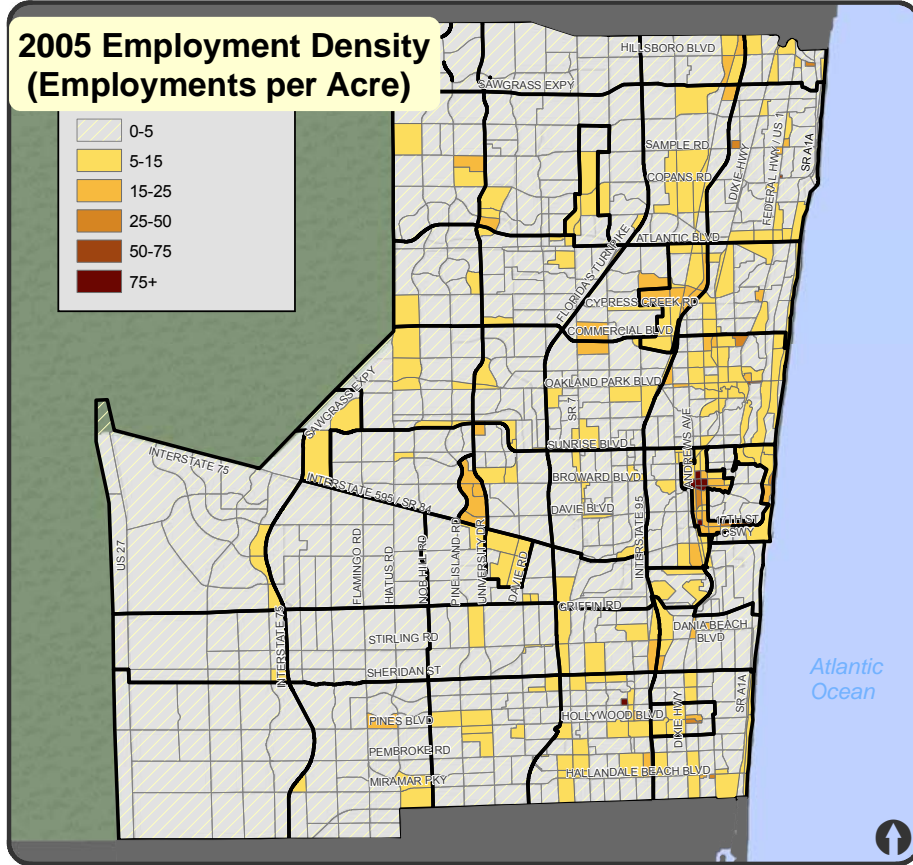
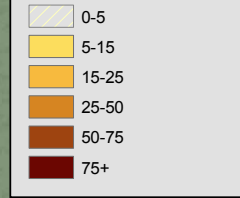
- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies
- Superzones

# Employment (Job) Density

**2005 Employment Density  
(Employments per Acre)**



**2035 Employment Density  
(Employments per Acre)**



**Legend**

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

Superzones

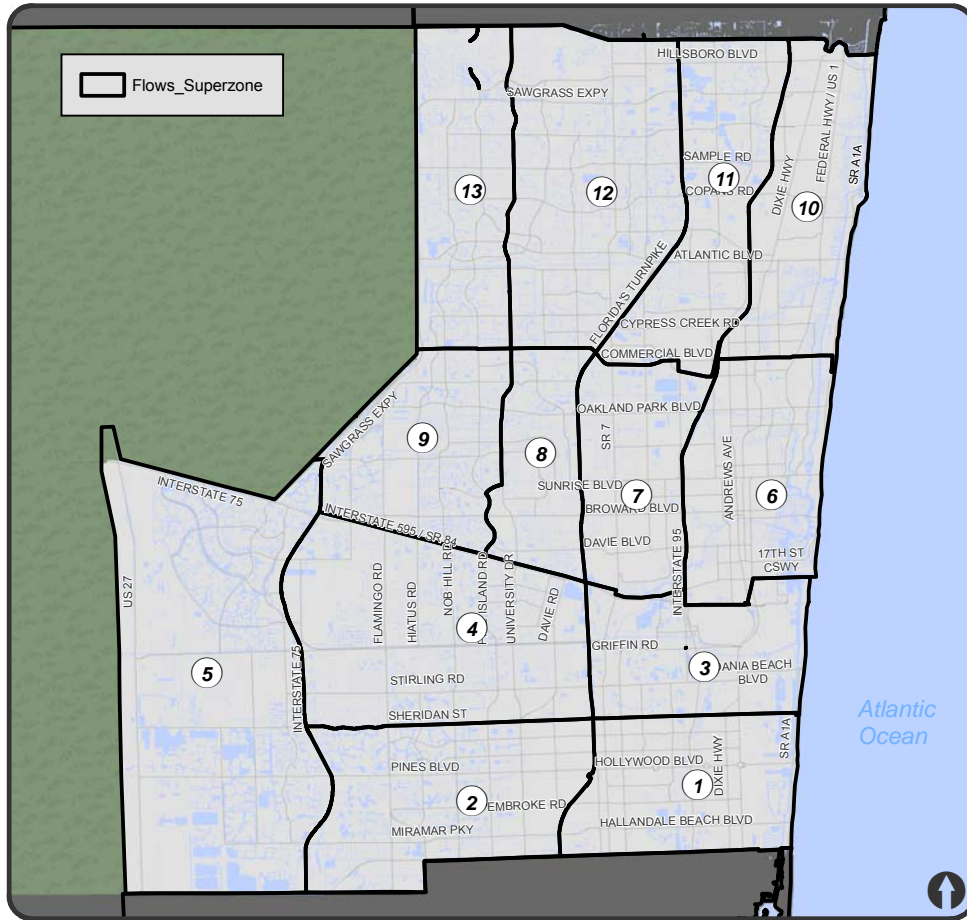
**Legend**

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

Superzones



# Flows Across Hyperzones



45 Superzones further aggregated into 13 Hyperzones for reporting traffic flows

Superzone	Name
1	Hollywood
2	Pembroke Pines Area
3	Dania Beach Area
4	Davie Area
5	South West Broward
6	Ft. Lauderdale
7	Lauderdale Lakes
8	Plantation Area
9	Sawgrass Mall
10	North East Broward
11	Cypress Creek Area
12	Coconut Creek Area
13	North West Broward

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

- Superzones for Modeling
- Superzones number

# Work Trip Flows

## 2035 Work Trips in '000s

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
1.Hollywood	30	15	11	8	4	9	5	3	3	2	3	2	1	96
2.Pembroke Pines Area	15	38	6	16	16	4	3	4	6	1	1	2	2	113
3.Dania Beach Area	11	6	9	9	3	9	6	3	4	2	2	2	1	67
4.Davie Area	8	16	9	21	11	8	6	7	11	2	2	3	3	107
5.SouthWest Broward	4	16	3	11	29	4	2	4	8	1	1	2	3	89
6.Ft. Lauderdale	9	4	9	8	4	52	20	8	8	18	13	10	4	164
7.Lauderdale Lakes	5	3	6	6	2	20	16	8	7	7	10	10	4	102
8.Plantation Area	3	4	3	7	4	8	8	9	12	3	4	7	5	75
9.Sawgrass Mall	3	6	4	11	8	8	7	12	22	3	4	10	10	106
10.NorthEast Broward	2	1	2	2	1	18	7	3	3	29	21	14	5	107
11.Cypress Creek Area	3	1	2	2	1	13	10	4	4	21	17	26	9	114
12.Coconut Creek Area	2	2	2	3	2	10	10	7	10	14	26	47	24	160
13.NorthWest Broward	1	2	1	3	3	4	4	5	10	5	9	24	25	96
Total	96	113	67	107	89	164	102	75	106	107	114	160	96	1,396

Note: HBW Trips only in OD format

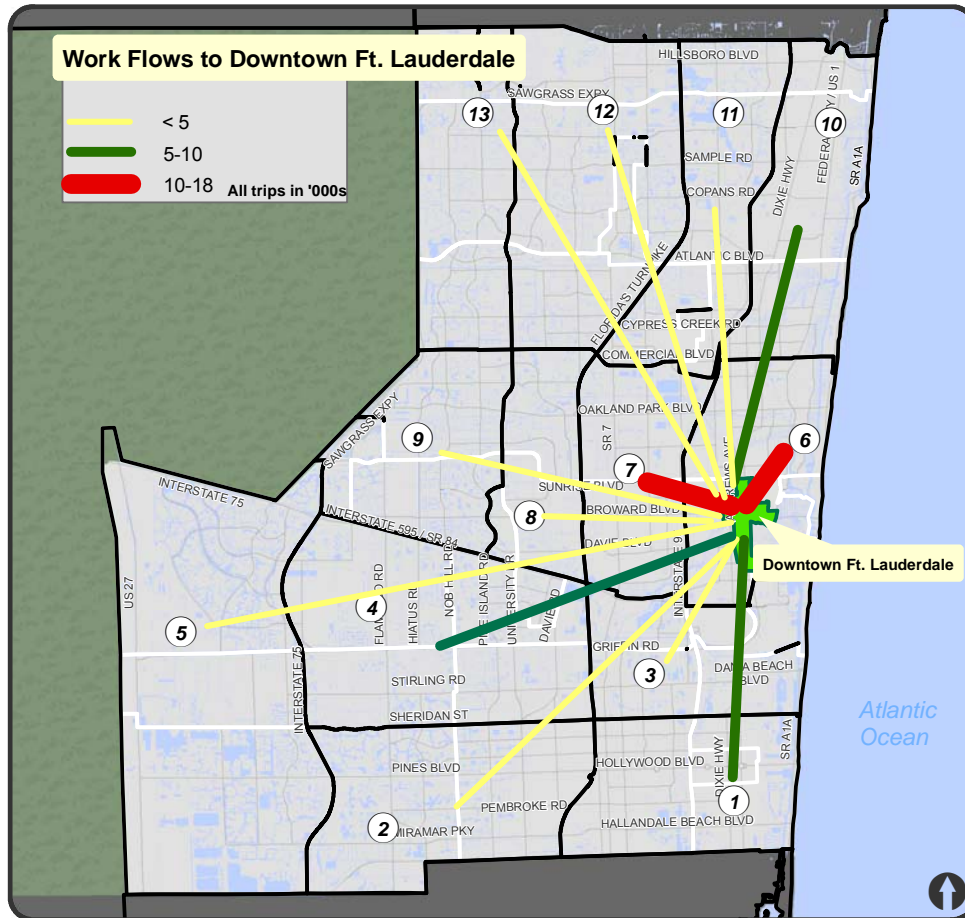
✓ Yellow cells are trips within the Hyperzones.

✓ Red cells are top 25 flows between Hyperzones (represented graphically on the next slide).





# Work Trips to/from Downtown Ft. Lauderdale



Superzone	Work Trips
1.Hollywood	6
2.Pembroke Pines Area	3
3.Dania Beach Area	4
4.Davie Area	6
5.SouthWest Broward	3
6.Ft. Lauderdale	21
7.Lauderdale Lakes	12
8.Plantation Area	5
9.Sawgrass Mall	5
10.NorthEast Broward	7
11.Cypress Creek Area	3
12.Coconut Creek Area	5
13.NorthWest Broward	2
14.Intra-Hyperzone	3
<b>Total</b>	<b>84</b>

1. All trips in '000s

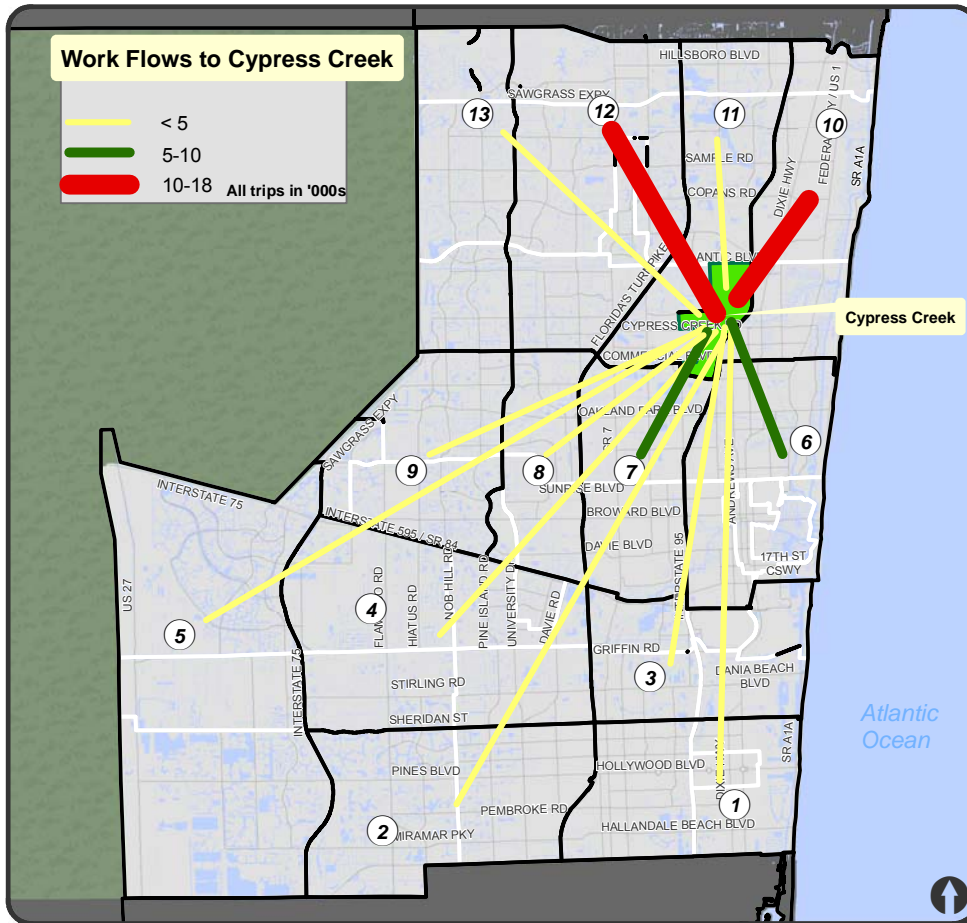
2. Intra-Broward work trips only

0 2 4 8 Miles

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

- Superzones for Modeling
- Superzones number

# Work Trips to/from Cypress Creek



Superzone	Work Trips
1.Hollywood	2
2.Pembroke Pines Area	1
3.Dania Beach Area	1
4.Davie Area	2
5.SouthWest Broward	1
6.Ft. Lauderdale	9
7.Lauderdale Lakes	7
8.Plantation Area	3
9.Sawgrass Mall	3
10.NorthEast Broward	11
11.Cypress Creek Area	5
12.Coconut Creek Area	13
13.NorthWest Broward	4
14.Intra-Hyperzone	1
<b>Total</b>	<b>61</b>

1. All trips in '000s

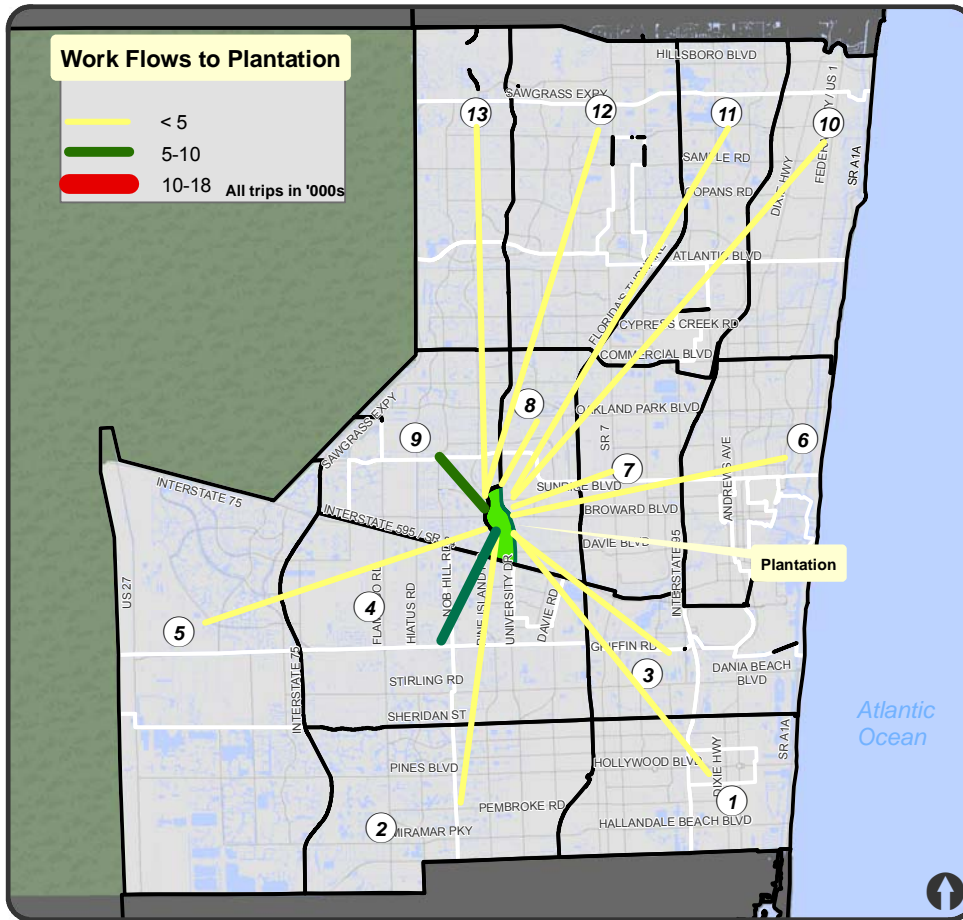
2. Intra-Broward work trips only

0 2 4 8 Miles

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

- Superzones for Modeling
- Superzones number

# Work Trips to/from Plantation Midtown



0 2 4 8 Miles

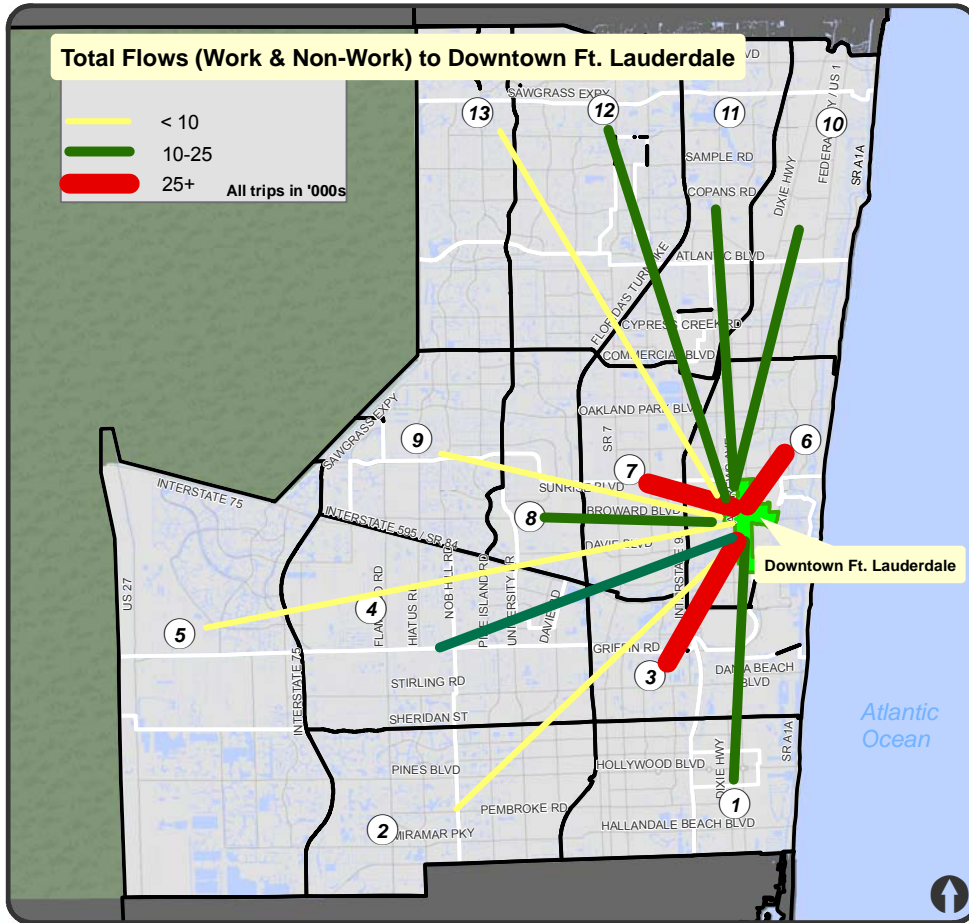
Superzone	Work Trips
1.Hollywood	2
2.Pembroke Pines Area	3
3.Dania Beach Area	1
4.Davie Area	6
5.SouthWest Broward	3
6.Ft. Lauderdale	3
7.Lauderdale Lakes	4
8.Plantation Area	4
9.Sawgrass Mall	7
10.NorthEast Broward	1
11.Cypress Creek Area	1
12.Coconut Creek Area	3
13.NorthWest Broward	2
14.Intra-Hyperzone	1
<b>Total</b>	<b>38</b>

1. All trips in '000s  
2. Intra-Broward work trips only

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

- Superzones for Modeling
- Superzones number

# Work & Non-Work Trips to/from Downtown Ft. Lauderdale



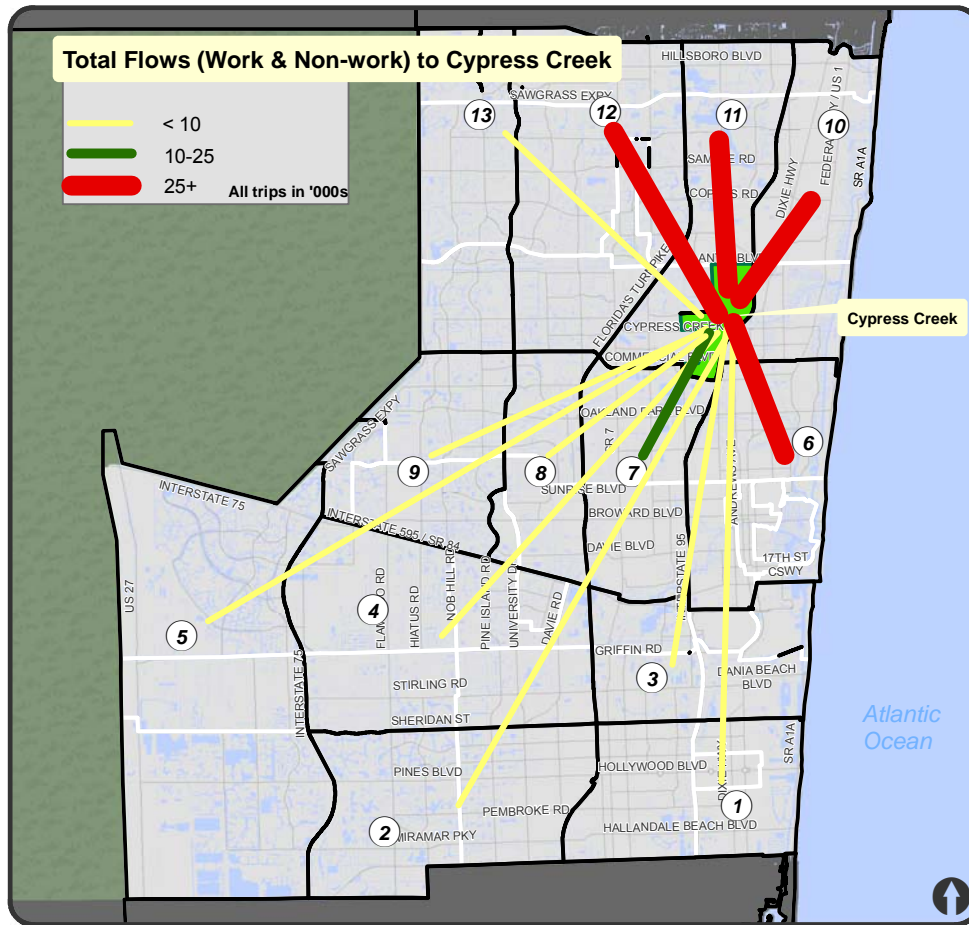
Superzone	Total Trips
1.Hollywood	20
2.Pembroke Pines Area	7
3.Dania Beach Area	32
4.Davie Area	16
5.SouthWest Broward	6
6.Ft. Lauderdale	109
7.Lauderdale Lakes	41
8.Plantation Area	15
9.Sawgrass Mall	12
10.NorthEast Broward	22
11.Cypress Creek Area	17
12.Coconut Creek Area	14
13.NorthWest Broward	5
14.Intra-Hyperzone	54
<b>Total</b>	<b>369</b>

1. All trips in '000s
2. Intra-Broward trips only

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies

- Superzones for Modeling
- Superzones number

# Work & Non-Work Trips to/from Cypress Creek



Superzone	Total Trips
1.Hollywood	6
2.Pembroke Pines Area	2
3.Dania Beach Area	9
4.Davie Area	4
5.SouthWest Broward	2
6.Ft. Lauderdale	39
7.Lauderdale Lakes	24
8.Plantation Area	8
9.Sawgrass Mall	7
10.NorthEast Broward	44
11.Cypress Creek Area	31
12.Coconut Creek Area	36
13.NorthWest Broward	11
14.Intra-Hyperzone	19
<b>Total</b>	<b>241</b>

1. All trips in '000s
2. Intra-Broward trips only

- Broward County Major Roads
- Urbanized Broward County
- Undevelopable Broward County
- Miami-Dade and Palm Beach Counties
- Water Bodies
- Superzones for Modeling
- Superzones number





# Work Trips by County

Year 2035	Palm Beach	Broward	Miami-Dade	Total
Palm Beach	1,097	122	6	1,225
Broward	120	1,395	300	1,815
Miami-Dade	5	152	2,098	2,255
Total	1,222	1,669	2,403	5,294

Note: All trips in '000s

- ✓ ~1.4 million intra-Broward work trips, a 29% increase from 2005
- ✓ Trips between Broward and adjacent counties expected to grow 17% by 2035 to ~0.7 million trips/day
- ✓ 77% of all work trips originating in Broward County are intra-county, 23% are destined to Palm Beach or Miami-Dade



# Trips by County (All trip purposes)

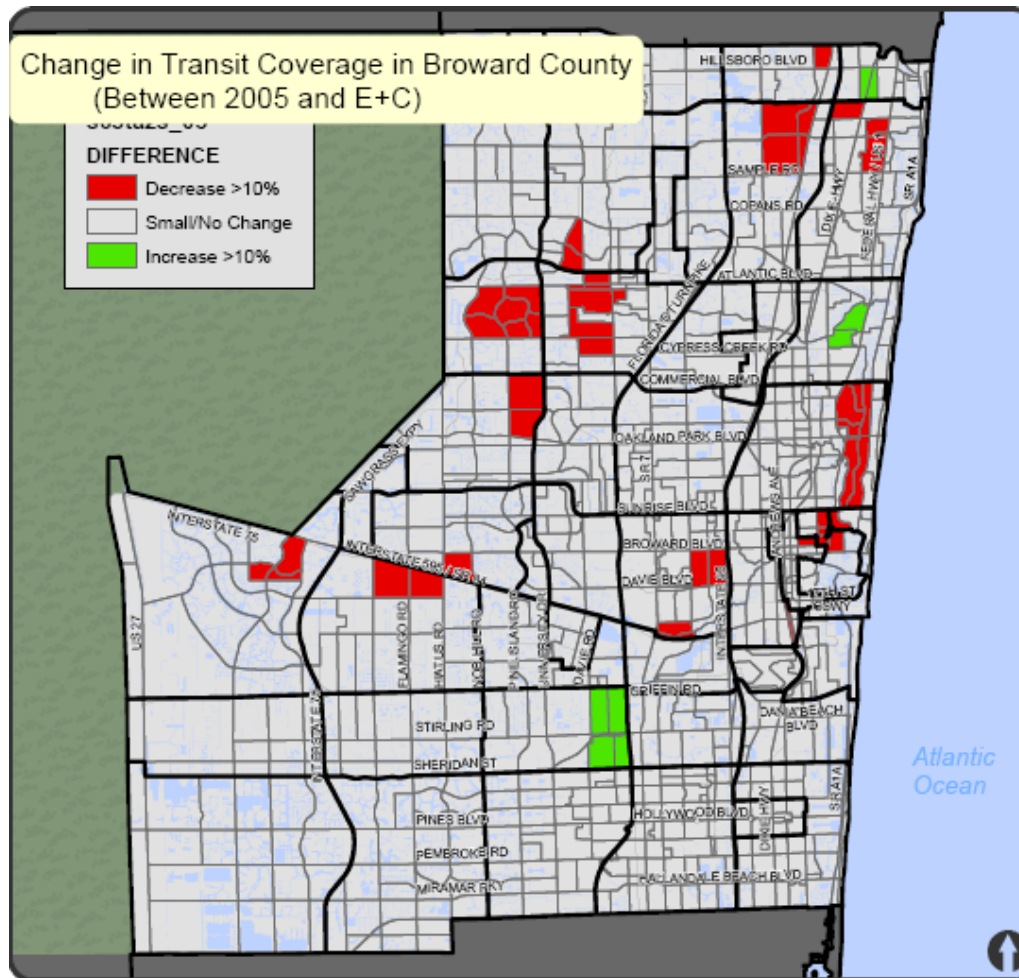
Year 2035	Palm Beach	Broward	Miami-Dade	Total
Palm Beach	5,816	486	26	6,328
Broward	358	6,247	1,003	7,608
Miami-Dade	15	616	11,033	11,664
Total	6,190	7,349	12,062	25,600

Note: All trips in '000s

- ✓ ~6.3 million intra-Broward trips, a 28% increase from 2005
- ✓ Trips between Broward and adjacent counties expected to grow 33% by 2035 to ~1.7 million trips/day
- ✓ 82% of all trips originating in Broward County are intra-county, 18% are destined to Palm Beach or Miami-Dade



# Change in Transit Coverage



**Population that  
can access  
transit (within ¼  
mile of transit  
stops)**

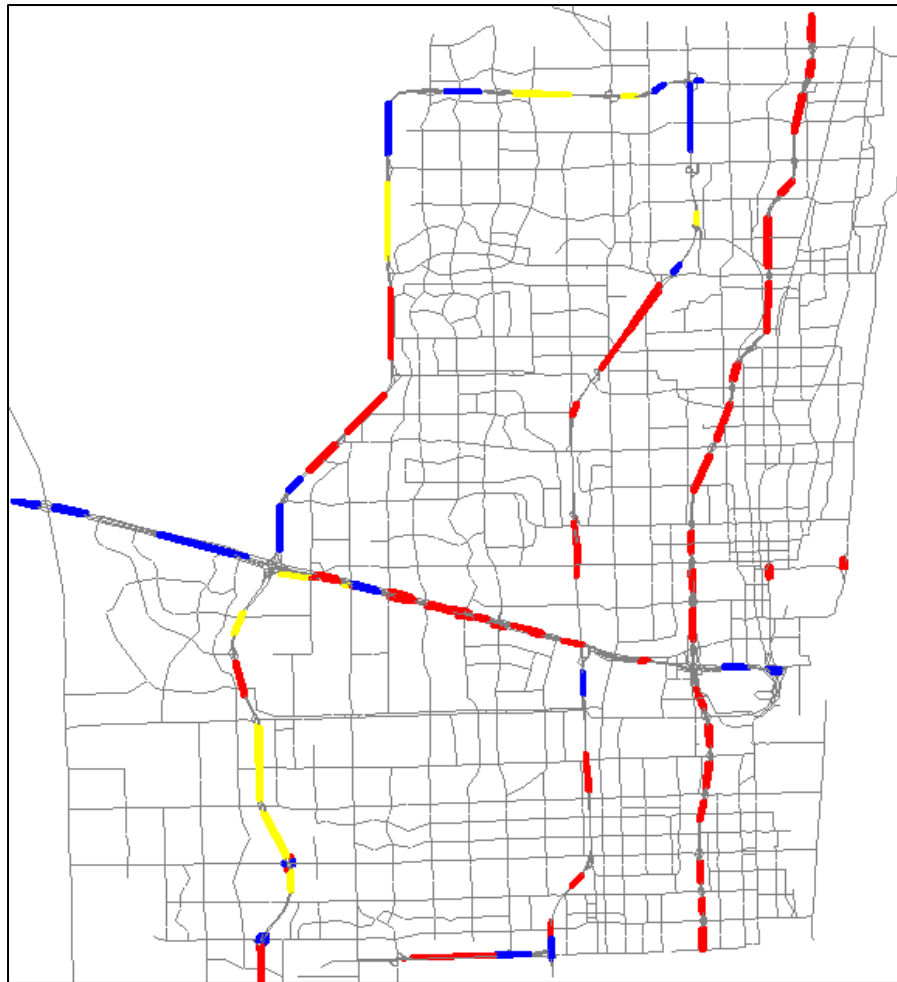


# Countywide Decrease in Mode Split

- ✓ Decline in transit service (9% less vehicle-hours of transit service in E+C reflecting the recent budget cuts) combined with increase in person trips (28%) results in decrease in mode split
- ✓ Provide more transit options for transit captive markets
- ✓ Provide better service for choice riders



# LOS Map: SIS Roadway Facilities

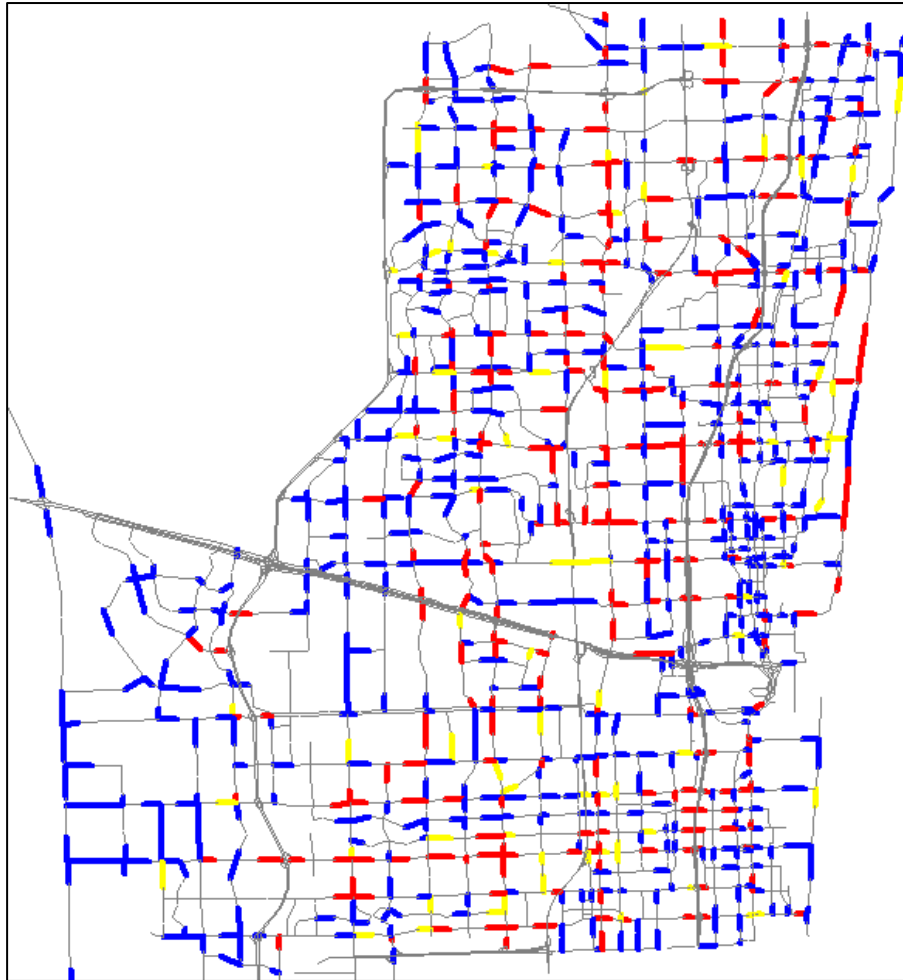


**E+C Network  
with  
2035 Lane Use  
LOS D, E, F**

- LOS 'D'**
- LOS 'E'**
- LOS 'F'**

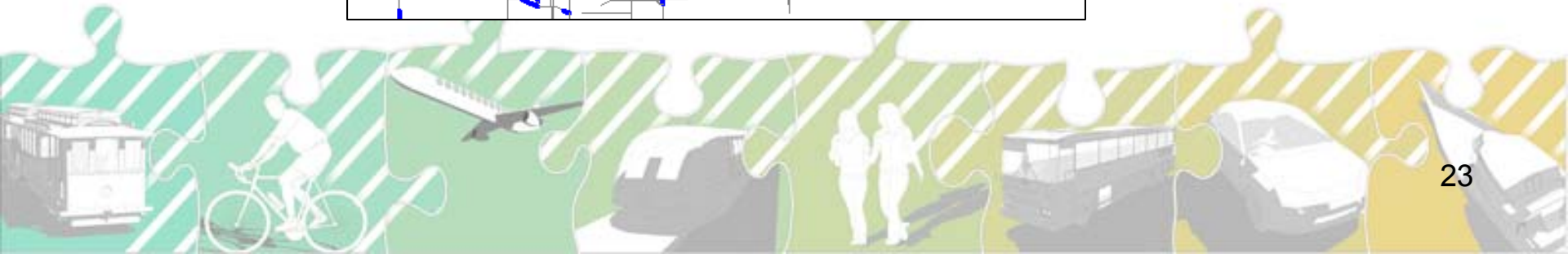


# LOS Map: Arterials



**E+C Network  
with  
2035 Lane Use**

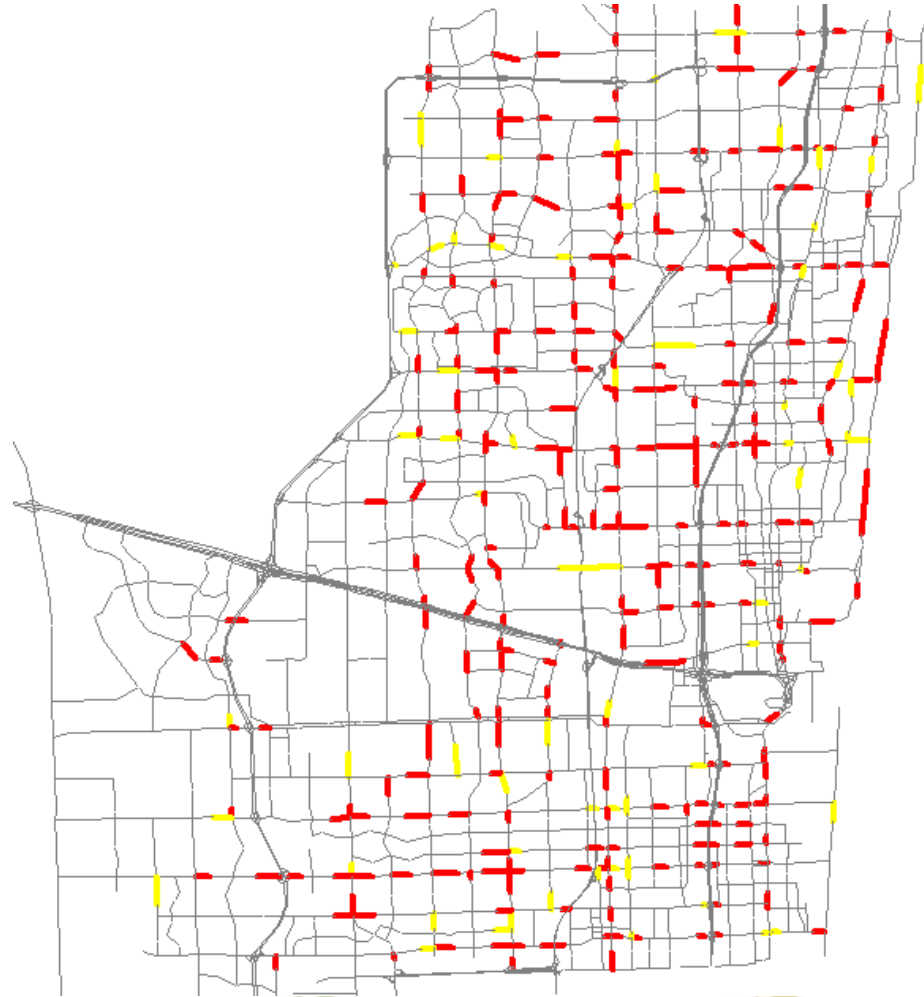
- LOS 'D'**
- LOS 'E'**
- LOS 'F'**



# Delta LOS Map

Comparison of  
2005 AADT LOS  
to  
E+C LOS

- D → E
- D or E or F → F





# Highway Mobility Index (24 hr period)

- ✓ Index used to determine the flow of passengers throughout the transportation system
- ✓ It takes into account the travel speeds and the vehicle occupancy (Speed x Average AOC)
- ✓ Higher the mobility index, more effective is the transportation system

	Base	E+C
<b><i>Broward</i></b>	<b>48.12</b>	<b>46.35</b>
Palm Beach	47.83	46.38
Miami-Dade	41.07	33.96
Region	44.93	40.94



**Thank you!!**

