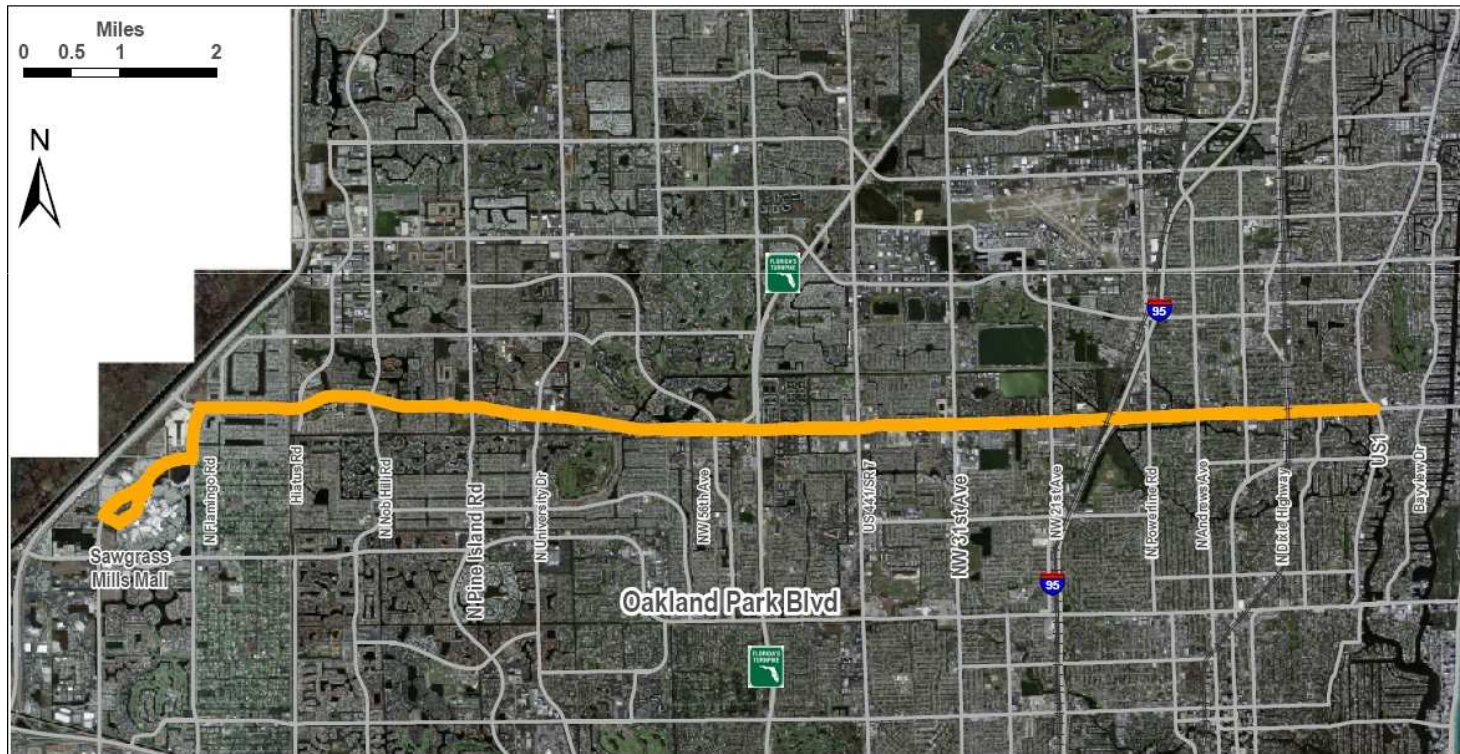


Oakland Park Boulevard Transit Study Update

1



Outline

2

- **Effort to date**
 - Initial Project Workshop
 - Partnership
 - Corridor Conditions
 - Problem Statement/ Purpose and Need
- **On-going Initiatives**
 - BCT – vehicles; shelters
 - MPO – Mobility Hubs; Livability
 - SFRTA – Oakland Park Boulevard Station Concept
- **Microsimulation –**
 - Data collection
 - Project Concepts



Initial Project Workshop

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Project Partnership

- Broward MPO
- Broward County Transit
- South Florida Regional Transportation Authority
- Florida Department of Transportation
- Memorandum of Understanding
 - Roles and responsibilities for Alternatives Analysis



Initial Project Workshop

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Current Operations- Route 72

- Service Hours

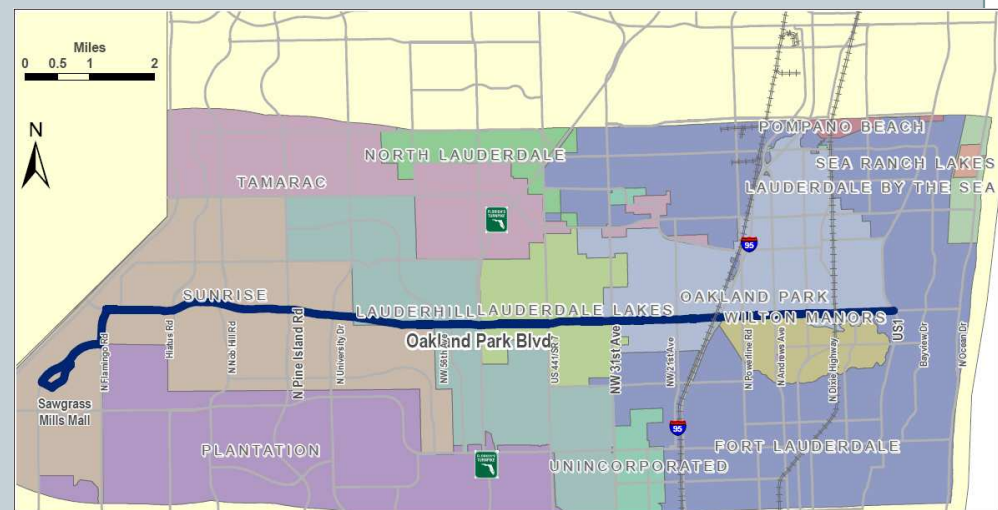
Weekdays	Saturdays	Sundays
5:00 AM – 12:30 AM	5:30 AM – 12:30 AM	8:00 AM – 10:00PM

- Service Frequency

Weekdays	Weekends
15 – 45 minutes	30 – 60 minutes

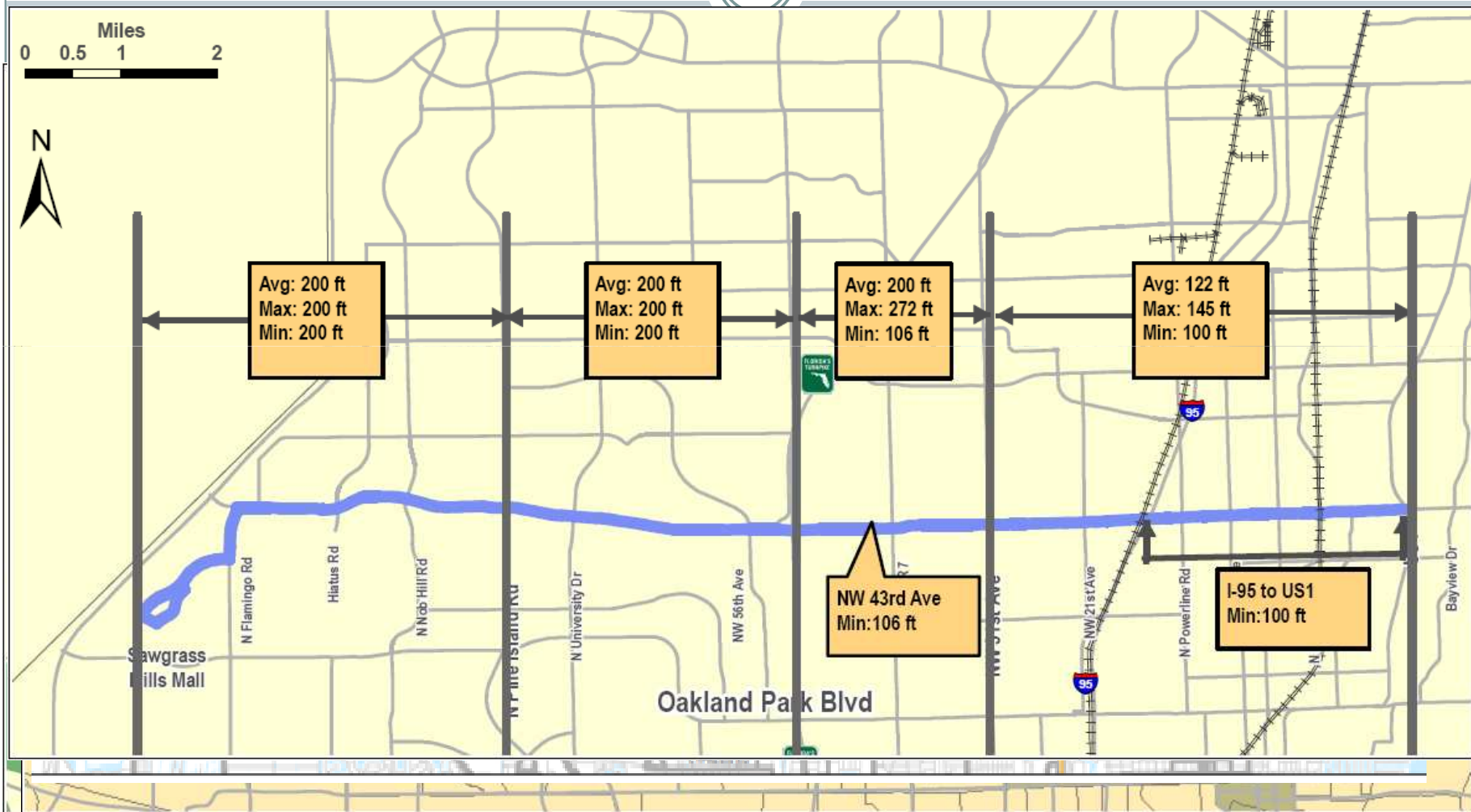
- Weekday Running Time

	Scheduled	Actual
East	67 min	69 min
West	67 min	69 min



Corridor Snapshot

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Corridor Problem Statement

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- **Travel Time**

- Traffic Congestion/ Delays
- Number of Stops
- Dwell Time

- **Reliability**

- On-time Performance

- **Capacity**

- Passenger Crowding

- **Passenger Experience**

- Stop Location and Shelter Design
- Pedestrian Access
- Walk Distance for Transfers
- Travel Information
- Safety & Security

Purpose and Need

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- **Need for Investment**

To address transit service need in the corridor, specifically to:

- Increase transit service (vehicle) capacity
- Improve bus travel times
- Enhance transit time reliability

- **Purpose of Proposed Action**

To improve transit service in the corridor in order to:

- Serve the demand for public transportation
- Reduce reliance on auto travel
- Address quality of life, livability and air quality concerns
- Attract new transit riders

Opportunities for Transit Enhancements

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Keys To Attracting New Transit Users

- Service Identity
 - Vehicles and Station Branding
- Comfort and Convenience
 - Stop Facilities
- Travel Time Savings
- High Frequency
- Service Reliability
- Safety and Security





On-going Initiatives

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Shelter Enhancement Program

	Sunrise	Lauderhill	Lauderdale Lakes	Oakland Park	Wilton Manors	Fort Lauderdale	Total
Westbound	4	3	6	7	-	3	23
Eastbound	8	4	8	4	3	2	29
TOTAL	12	7	14	11	3	5	52
Construction	2010-12	2011-13	2011-13	2010-12	2010-12	2011-14	

	Sunrise	Lauderhill	Lauderdale Lakes	Oakland Park	Wilton Manors	Fort Lauderdale	Total
Large Built-in-Place	7	6	2	-	-	-	15
Medium Built-in-Place	-	-	3	-	-	-	3
Medium Prefab	1	1	1	1	-	3	7
Small Prefab	4	-	8	10	3	2	27
TOTAL	12	7	14	11	3	5	52

On-going Initiatives

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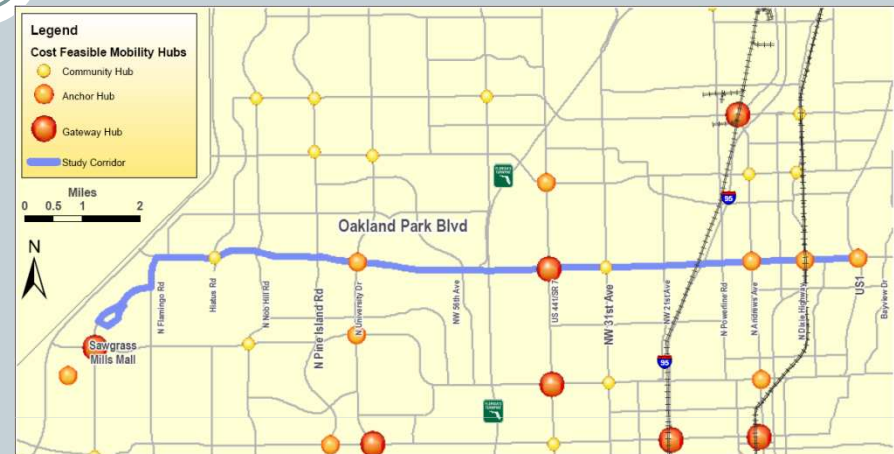
MPO Initiatives

- Mobility Hubs

- Developed requirements/specifications
- Vary by location and environment

- Livability Studies

- FAU Study recommendations
- e.g. SR7 intersection (quadrants)



On-going Initiatives

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City Initiatives:

- **Lauderdale Lakes**
 - Streetscape Master Plan
- **Oakland Park**
 - FEC station options
 - Shelter design – 6th Avenue
- **Wilton Manors**
 - Transit Oriented Corridor (Dixie)
 - Land use designation change



Fig 18a. Detail from the City of Lauderdale Lakes Streetscape Master Plan Draft. Plan view of Arterials. Source: City of Lauderdale Lakes Streetscape Master Plan. IBI Group. October 2008. (13).

On-going Initiatives

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Potential New Tri-Rail Station – Oakland Park Blvd.



Site Location Alternatives Analysis

Oakland Park - Location Map

SFRTA

November 2010 Kintley-Horn and Associates, Inc.



Microsimulation

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- Simulate the behavior of individual vehicles
- To predict the impact resulting from changes to traffic or from changes to the physical environment
- VISSIM
 - Assignment based on O-D
 - Ability to integrate with planning model
 - Multimodal – transit, parking, pedestrians
 - Operating strategies – TSP, ramp metering, signal coordination



Microsimulation

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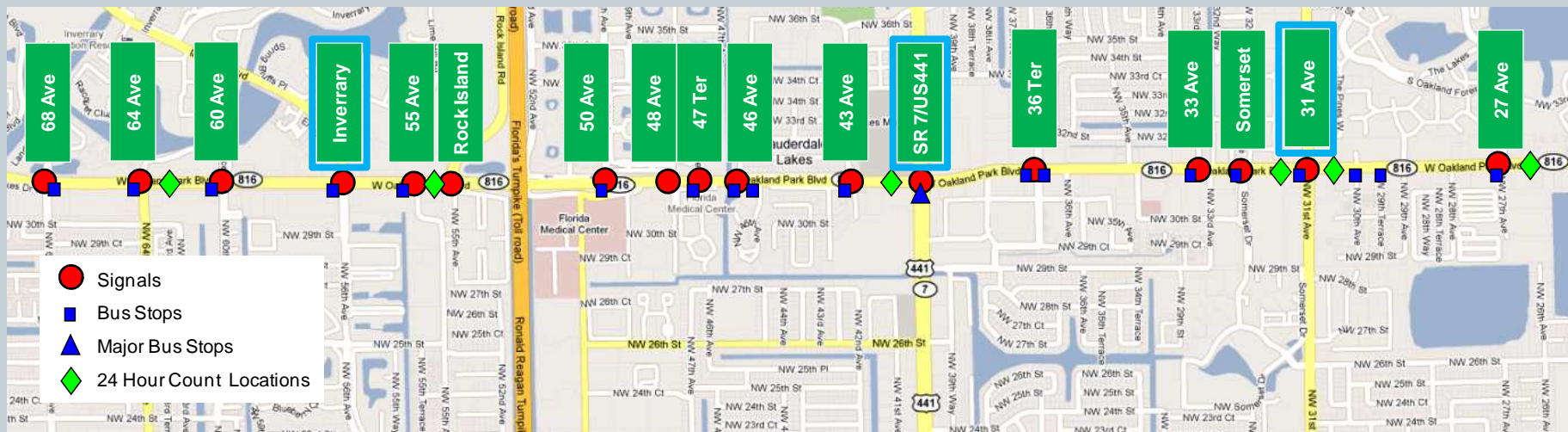
- Data Needs

Data Need		Available?	Data Provider
Roadway Geometry	intersection layouts	yes	FDOT D4 Planning
	lane configurations	yes	FDOT D4 Planning
	bus stop locations and type	yes	FDOT D4 Planning
Transit	speed profile	no	na
	bus travel time	yes	BCT
	boarding and alighting counts	yes	BCT
Traffic	turning movement counts	limited	Broward MPO
	general traffic travel time	yes	FDOT D4 Traf Ops
Traffic Control	signal timing plans	yes	BCTED
	signal phasing plans	yes	BCTED
Others	saturation headway	no	n.a.

Microsimulation

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- Data Collection



- Intersection Turning Movement Counts (all 17 intersections)
- Bus Speed Profile (Route 72, AM/PM peak, both directions)
- Bus Boarding/Alighting Counts (all stops)
- Saturation Headway (NW 31st Ave ; SR-7 ; Inverrary Blvd)

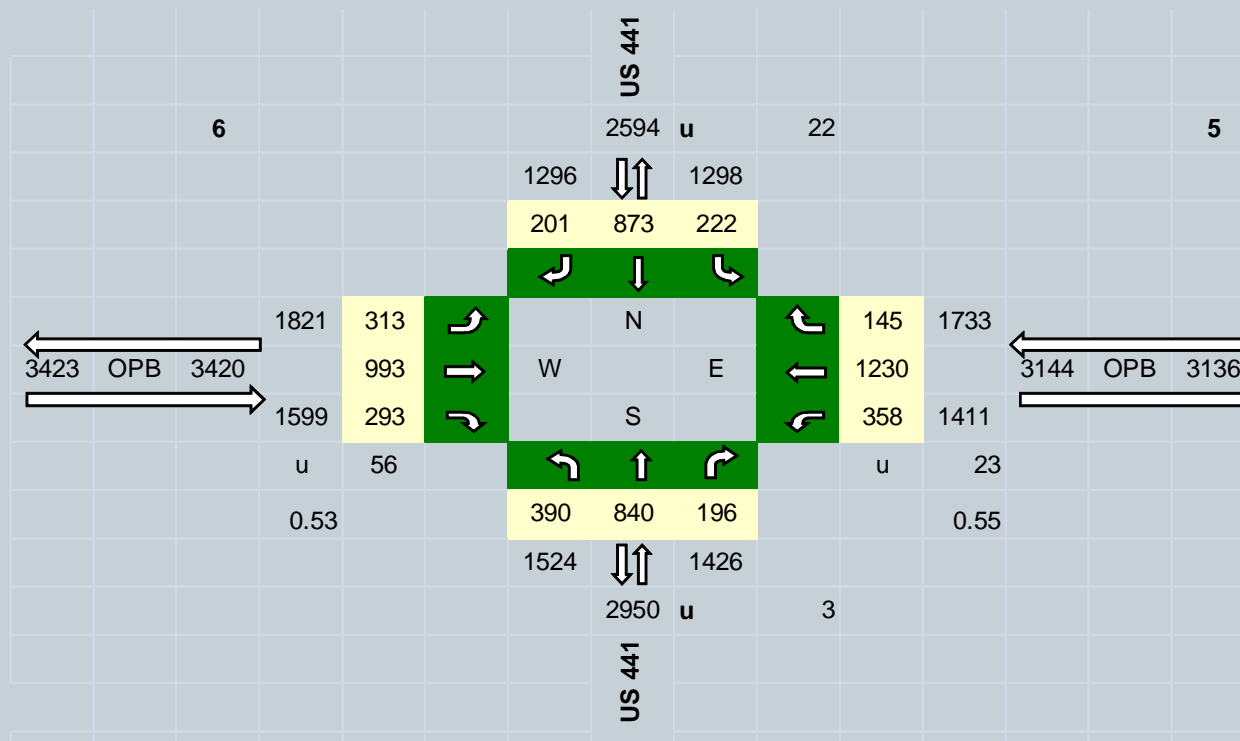
Microsimulation

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- Data Collection

- Turning movement count example

balanced 8-9 AM Oakland Park Blvd and SR-7 turning movement count

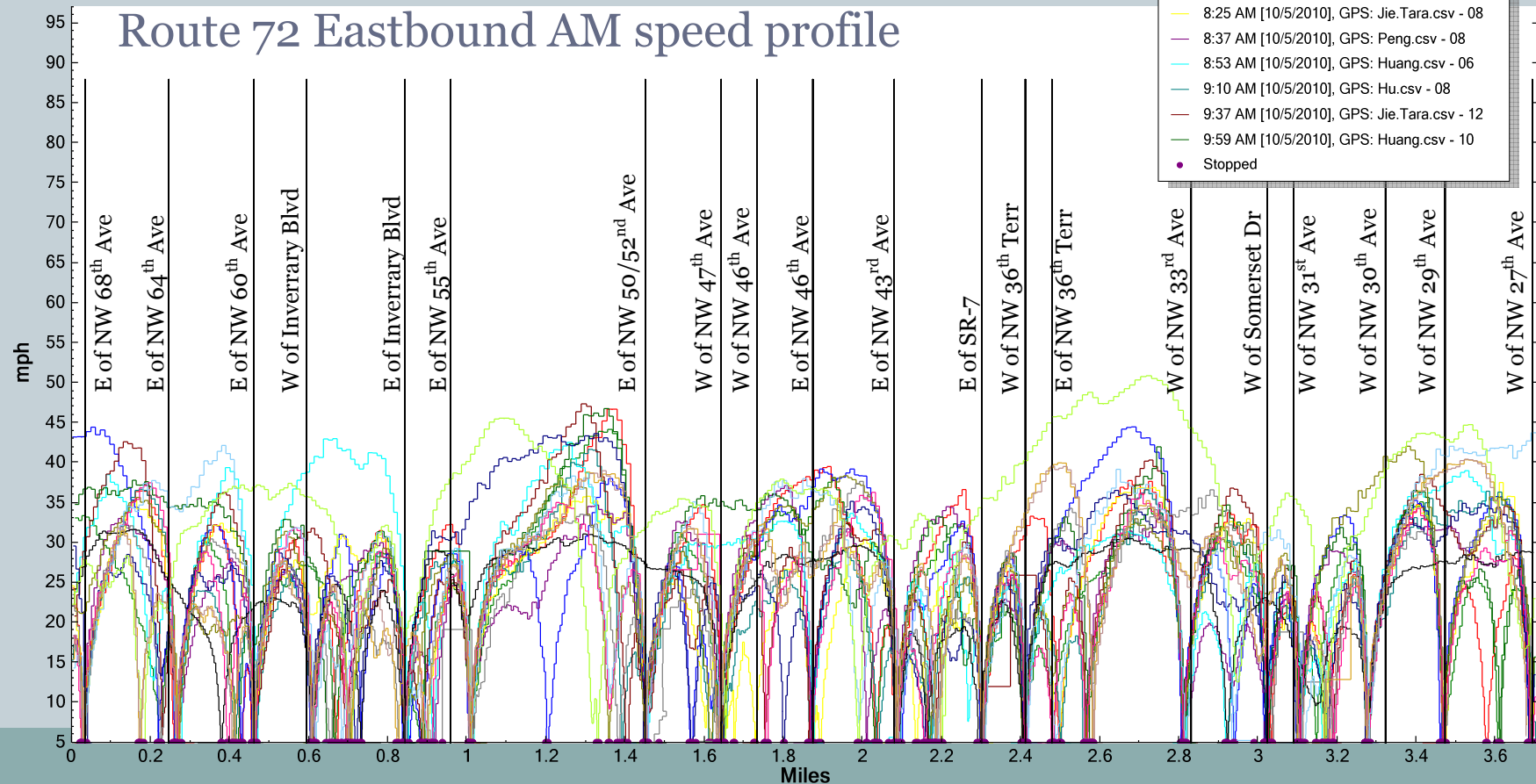


Microsimulation

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- Data Collection

- Speed profile example



Microsimulation

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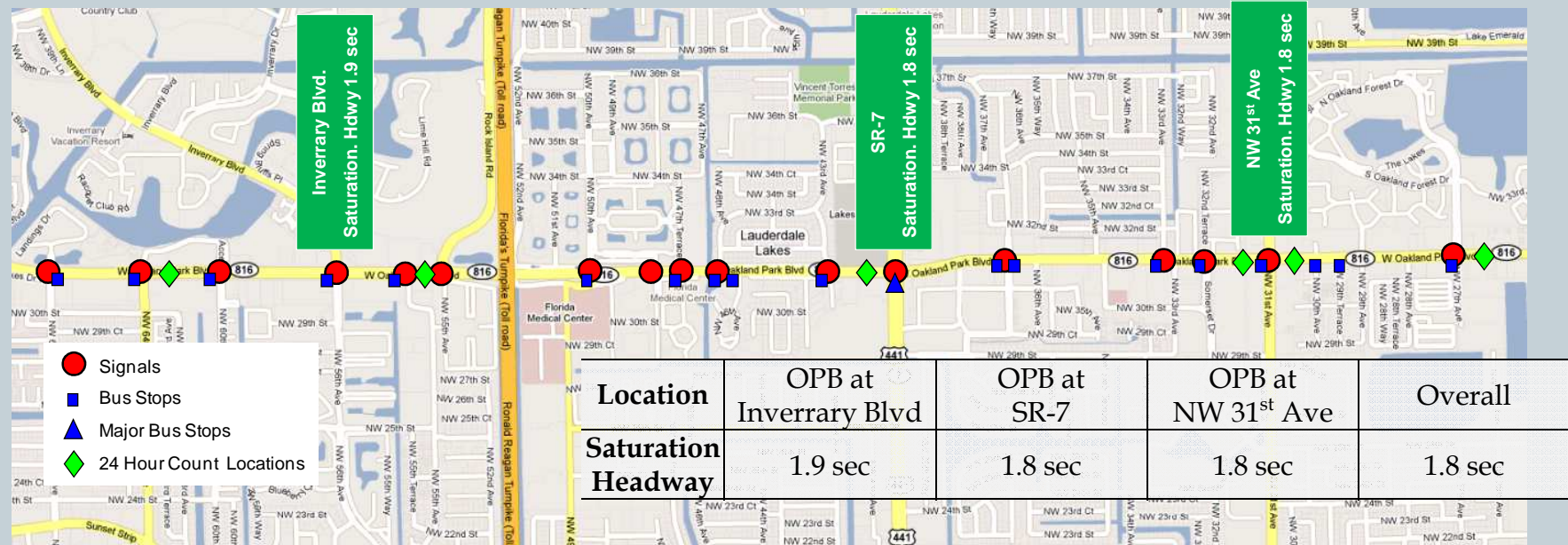
- Data Collection
 - Boarding/alighting counts sample
Eastbound Route 72 AM

Stop ID	Location	On			Off			Cabin		
		7AM	8AM	9AM	7AM	8AM	9AM	7AM	8AM	9AM
2078	W of 68	0	4	3	0	0	0	15	15	12
2079	E of 68	5	2	0	0	1	1			
2080	E of 64	4	4	4	1	4	3			
2081	E of 60	7	4	8	0	2	1			
2082	W of Inverrary/56	52	18	3	0	2	0	28	21	15
2093	E of Inverrary/56	12	10	59	0	3	7			
3493	E of 55	1	15	16	0	2	1			
2108	E of 50/52	11	5	15	5	2	9			
2110	W of 47	0	4	4	0	1	0			
2526	W of 46	0	3	1	0	0	0			
2111	E of 46	3	2	1	0	2	0			
3911	E of 43	11	3	12	17	26	29			
3085	E of SR7	29	25	45	17	9	20	38	22	33
2114	W of 36 Ter	4	4	13	1	3	4			
2115	E of 36 Ter	1	1	5	0	1	4			
2116	W of 33	4	11	1	7	2	4			
2118	W of Somerset	8	1	3	5	7	3			
5482	W of 31	4	5	1	15	10	9	36	21	30
1019	W of 30	4	4	4	12	3	7			
1020	E of 29	4	0	1	4	4	0			
1022	W of 27	7	4	8	5	9	13			
5503	E of 27	0	0	1	13	2	11	37	23	26

Microsimulation

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- Data Collection
 - Saturation Headway



Microsimulation

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- Network Building



Microsimulation

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- Model Calibration

Criteria and Measures	Calibration Acceptance Targets
Hourly Flows, Model Versus Observed	
Individual Link Flows	
Within 15%, for $700 \text{ vph} < \text{Flow} < 2,700 \text{ vph}$	> 85% of cases
Within 100 vph, for $\text{Flow} < 700 \text{ vph}$	> 85% of cases
Within 400 vph, for $\text{Flow} > 2,700 \text{ vph}$	> 85% of cases
Sum of all Link Flows	Within 5% of sum of all link counts
GEH Statistics < 5 for Individual Link Flows*	> 85% of cases
GEH Statistics for Sum of all Link Flows	GEH < 4 for sum of all link counts
Travel Times, Model Versus Observed	
Journey times network	
Within 15% (or 1 minute, if higher)	> 85% of cases
Visual Audits	
Individual link speeds	
Visually acceptable speed-flow relationship	To analyst's satisfaction
Bottlenecks	
Visually acceptable speed-flow relationship	To analyst's satisfaction

Improvement Concepts

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- Transit Signal Priority



Intersection Selection Criteria	Weight	NW 68th Ave.	NW 64th Ave.	NW 60th Ave.	Inverrary Blvd./ NW 56th Ave	NW 55th Ave.	Rock Island Rd.	NW 50th Ave./ NW 52nd Ave	NW 48th Ave.	NW 47th Ter.	NW 46th Ave.	NW 43rd Ave.	SR-7/US-441	NW 36th Ter.	NW 33rd Ave.	Somerset Dr.	NW 31st Ave.	NW 27th Ave.
Intersection Performance	30%	4	4	3	3	3	3	2	3	3	3	4	2	3	4	4	2	3
Bus Stop Characteristics	20%	4	4	4	4	4	4	4	4	3	3	4	4	4	4	3	4	3
Signal Controller Type	5%	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2
Intersection Complexity	5%	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Actuated Signal Intersection	20%	1	1	4	4	1	4	4	1	1	1	1	4	1	1	1	4	4
Crossing Transit Route	20%	4	4	4	2	4	4	2	4	4	4	4	1	4	4	4	2	4
Score	100%	3.3	3.3	3.6	3.2	2.95	3.6	2.9	3	2.8	2.8	3.3	2.7	3	3.3	3.1	2.9	3.4
Selected				√	√		√						√				√	√

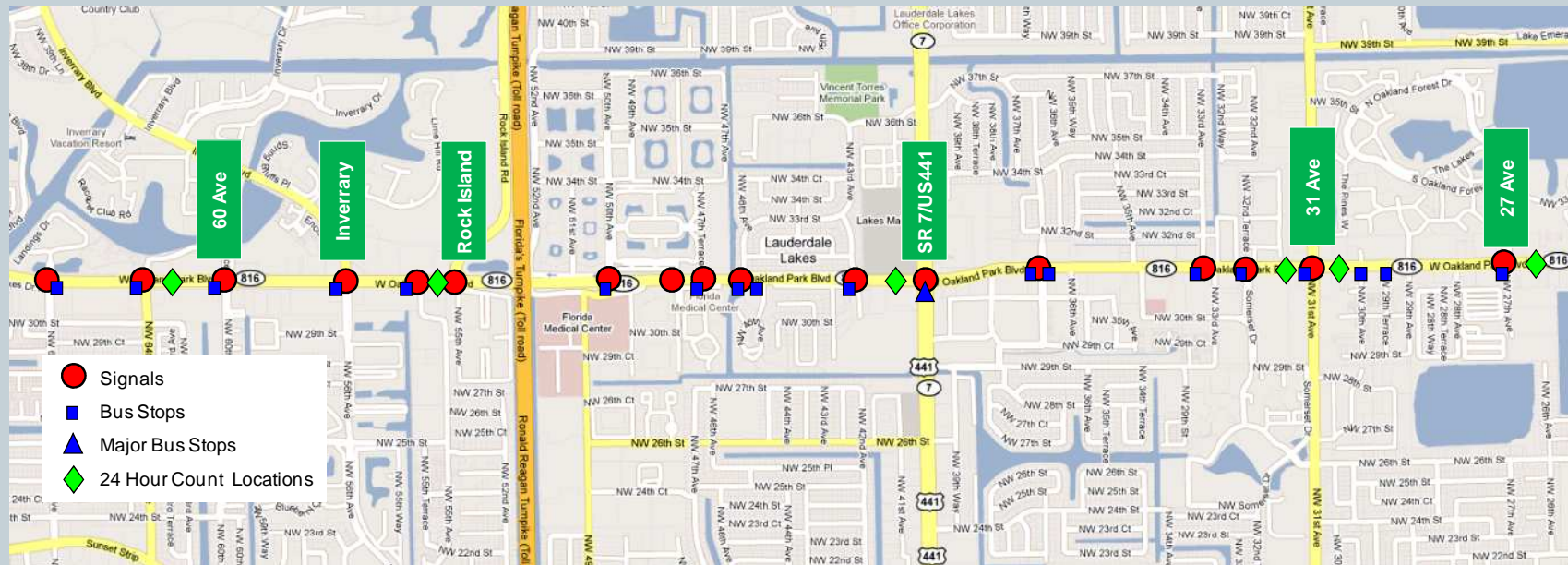
Legend

Green is Optimum Intersection for Implementation, Orange is Challenging Intersection for Implementation, Unshaded is least-suitable.

Improvement Concepts

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- Transit Signal Priority
 - ✦ 3 highest priorities; 3 major intersections

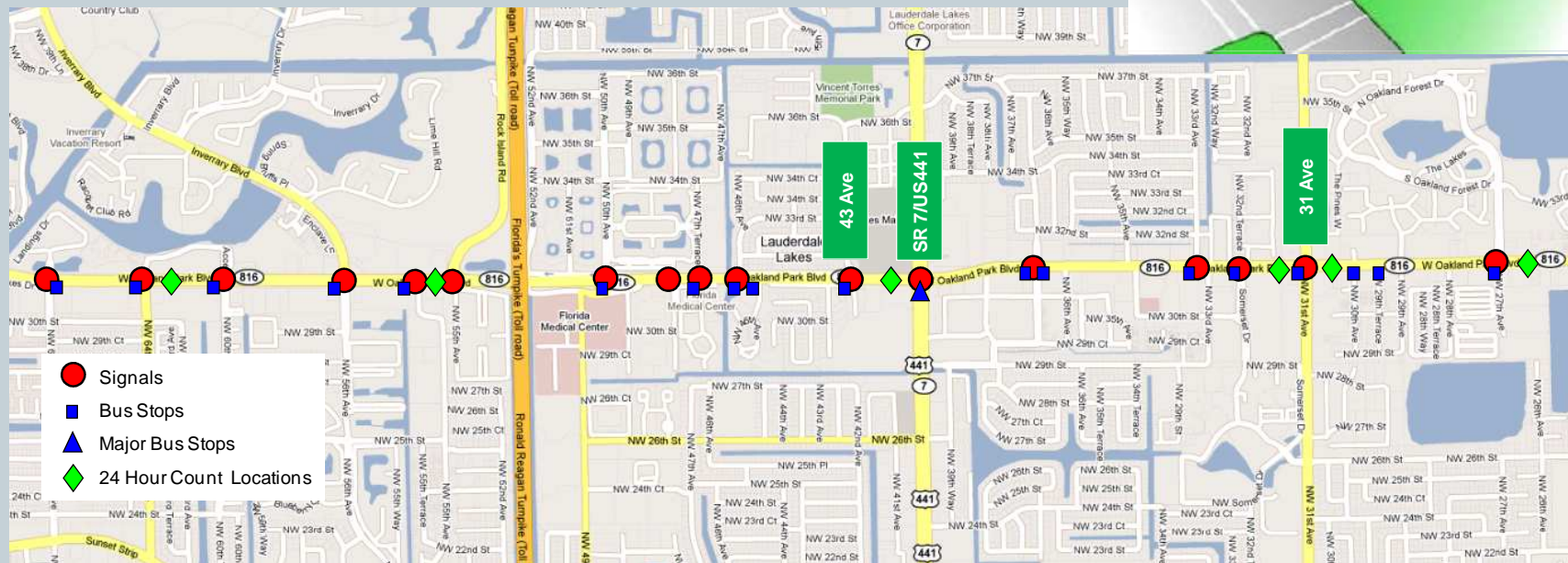
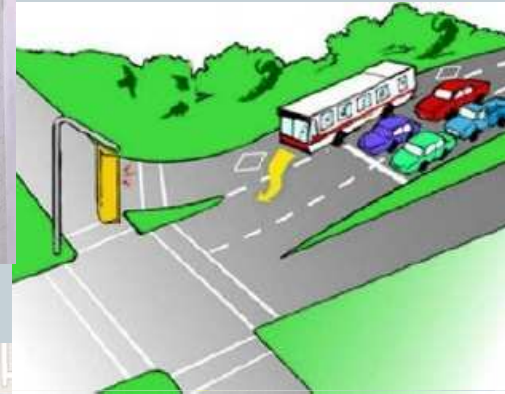


Improvement Concepts

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- Queue Jumper

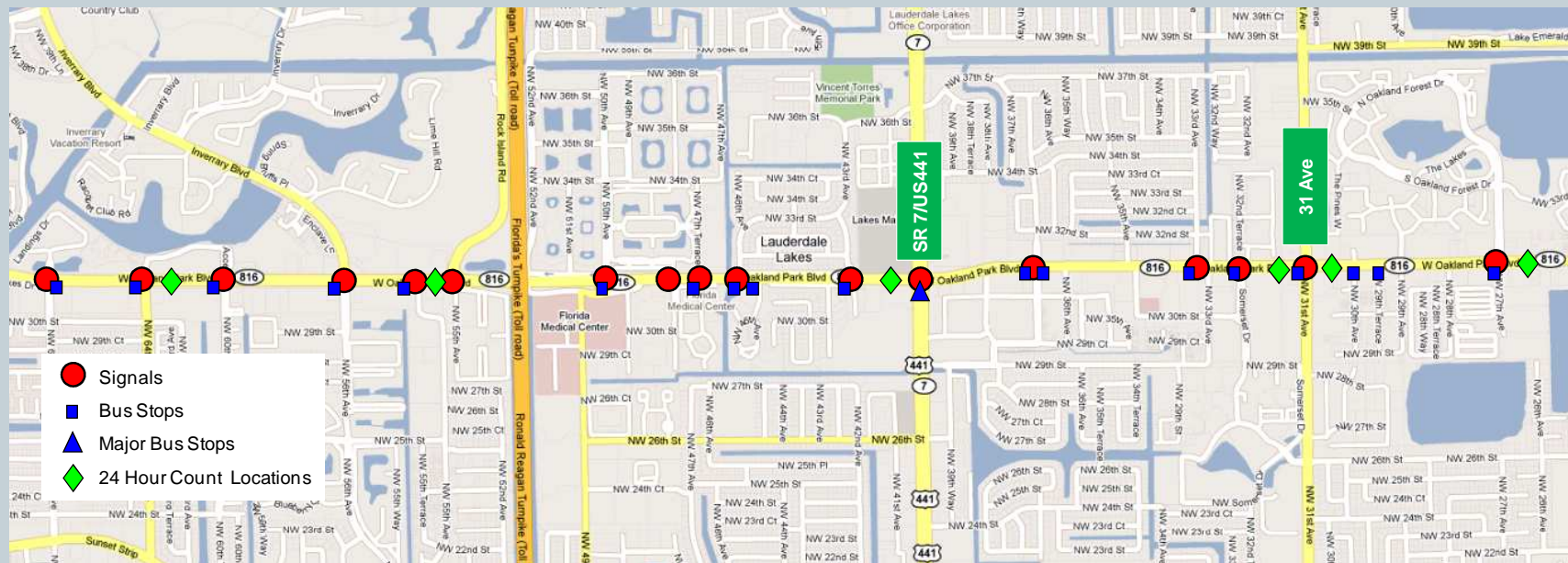
- ✦ Constrained by ROW
- ✦ NW 43rd Ave, SR-7, NW 31st Ave



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✧ SR-7

✦ NW 31st Ave



- **Next Steps**
 - Finalize microsimulation model
 - Test alternatives
 - Recommended improvements

- **Project workshop March 2011**
 - Final Purpose & Need
 - Memorandum of Understanding signed