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# Overcoming the Challenges of ORT Conversion in an Urban Environment

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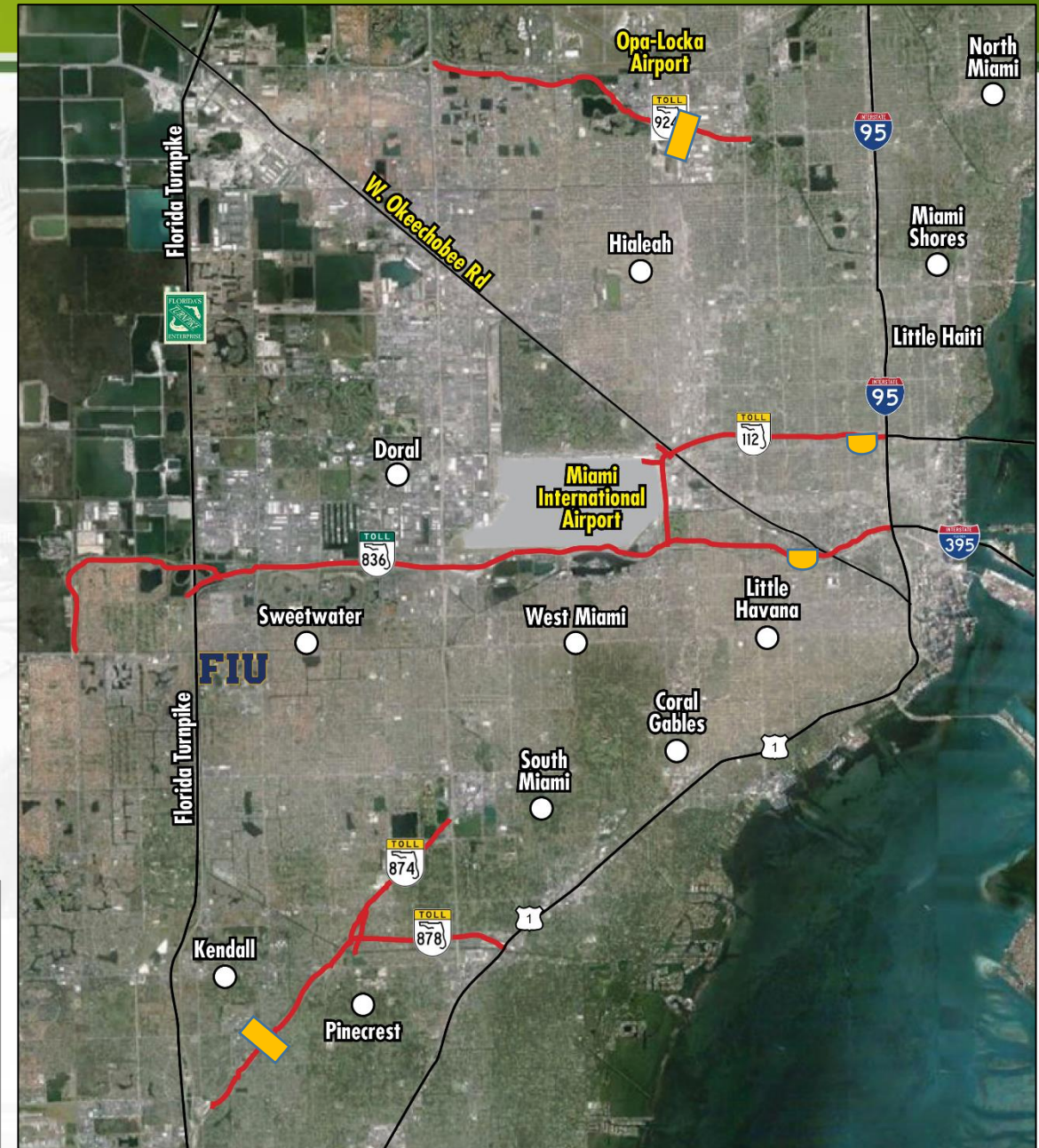
## Highly Dense Urban Environment

- Five expressways that are all vital corridors in highly dense urban environment
- Among the busiest expressways in the region
  - 33.4 centerline miles of expressway carrying 1 million vehicles per day

○ *Highly Populated Area*

▬ *2 Bi-directional toll plazas*  
SR 924 Gratigny Parkway  
SR 874 Don Shula Expressway



▬ *2 One-directional toll plazas*  
SR 836 Dolphin Expressway  
SR 112 Airport Expressway





## Antiquated System and Inequitable Tolling

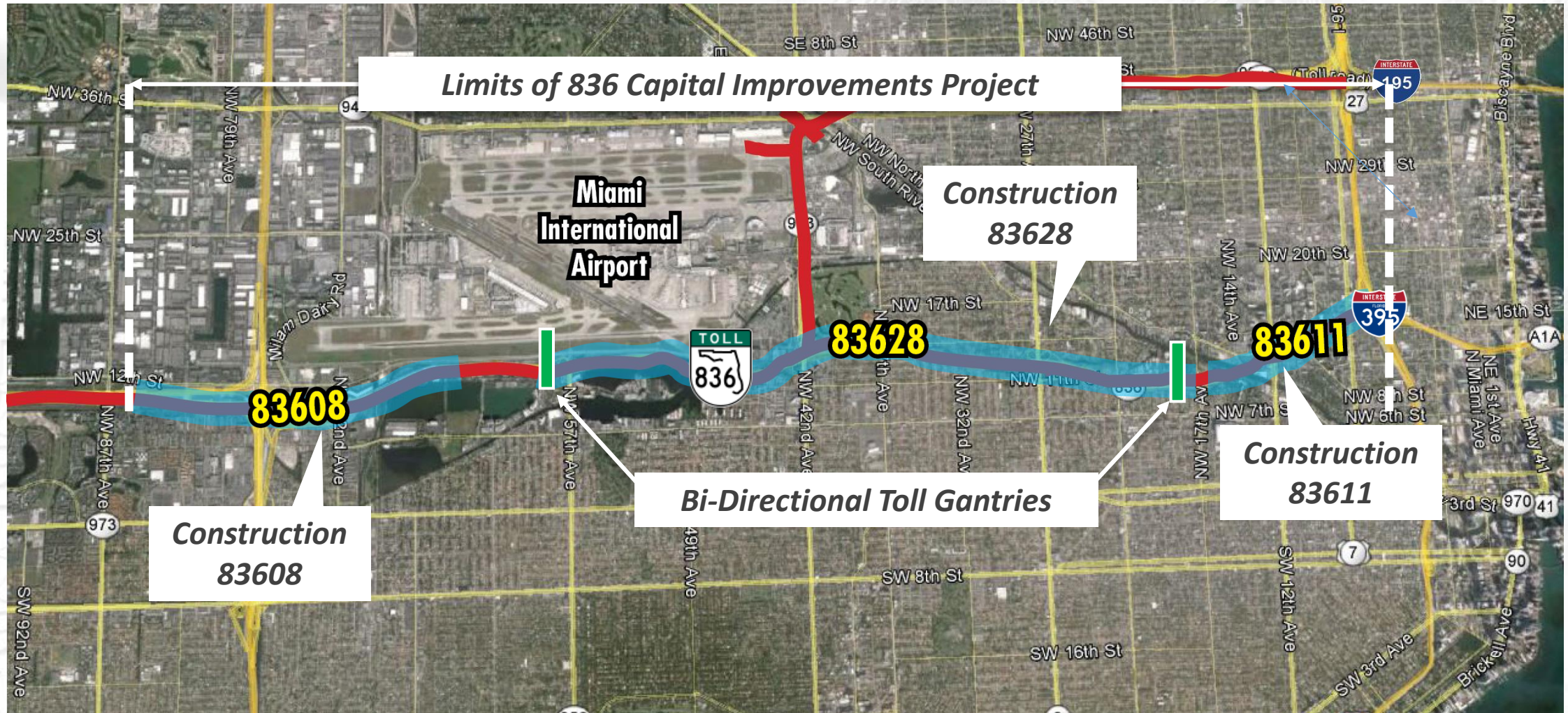
- System of five expressways was originally built with just four tolling points
- Some tolled movements had higher toll rates to compensate for the free movements
- By 2006 only 28% of users were paying for 100% of the system

-  **2 Bi-directional toll plazas**  
 SR 924 Gratigny Parkway  
 SR 874 Don Shula Expressway
-  **2 One-directional toll plazas**  
 SR 836 Dolphin Expressway  
 SR 112 Airport Expressway





# Coordination with Adjacent Ongoing and Future Projects





## Automatic Coin Machine and Cash System

- Cash and coins collection at toll plazas caused weaving and delays
- Stop and go created emissions in residential communities



## A Phased Approach to Conversion

Staggered conversions of expressways allowed for continued public outreach and education

- Lower density SR 924, SR 874 and SR 878 were completed in 2010

The MDX ORT Experience

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HIGHWAY CONSTRUCTION

## Taking on SR 112 and SR 836

The SR 112 and SR 836 corridors are among the heaviest traveled in South Florida, with large sections of SR 836 having Annual Average Daily Traffic (AADT) in excess of 200,000 vehicles per day (vpd) and forecast demand in 2040 in excess of 265,000 vpd. This made the work to implement the conversion to ORT challenging.



## Coordination with civil contractors and system integrator





## Coordination with future roadway improvement projects



## Civil Construction

- Minimizing the impact to the traveling public was a priority
  - SR 112 and SR 836 are access to MIA, the largest public teaching hospital in the region, downtown Miami and the Port of Miami
- Aggressive schedule was delayed due to timing of contracts and required flexibility
- Coordination with adjacent ongoing construction projects including a joint FDOT/MDX \$560 million project to reconstruct the SR 826/SR 836 interchange



## Tolling System Installation

- Coordination of deployment of new in-lane system with ongoing civil infrastructure
- Installation of loops had to accommodate future roadway improvement projects



## Tolling System Installation

- In-lane system had to be ready for interoperability
- Front and rear capture needed due to volume of trucks
- Aggressive schedule





## Tolling System Installation

Replacement of tolling infrastructure on existing tolling zones within highly congested areas



## How We Did It

- High level of cooperation from our staff, consultant and contractors accommodate requirements of the system integrator
- Minimized construction impact by piggybacking system integrator and civil contractor's lane closures
- Detailed attention to MOT



## How We Did It

- Maintenance of revenue collection
- Innovative solutions to expedite construction
- Sign structure as temporary tolling zone



# DX<sup>®</sup> Overcoming the Challenges





# DX<sup>®</sup> Overcoming the Challenges



## The New MDX System

- No longer in the top ten most congested regions
- The traffic volume on SR 836 has increased by more than 2 % since closing the system
- Total traffic is more than 1,000,000 vehicles per day
- SunPass penetration is 85% during weekday peak hours
- 97% of users now paying their fair share of the user fee



## The New MDX System

- More than \$400 million in new construction projects initiated since the conversion in November 2014. Another \$300 million to be let before the end of 2015.
- Local and small business 30% of work program
- Capped multi-axle vehicles at three axles with valid SunPass accounts
- Established a customer loyalty program that pays dividends to users

## The Future is Very Bright

We are implementing a robust work program that makes investments in mobility and safety improvements for the future. Today the system is performing better than anticipated, and as a result the MDX Board of Directors has announced that cash dividends will be paid to frequent users after all debt obligations have been met at the end of the year.



# Delivering ORT - The Dawn of a New Day

