Advanced Traffic Management System Phase II
Traffic Signal Retiming Project

Manatee County Diversion and Evacuation Routes
Definition and Signal Timing Development
Project Background

• Project History
  • Incidents on Interstate 75 requiring closure
  • Interstate 75 Freeway Management System in Manatee and Sarasota Counties
  • Implementation of Manatee County Advanced Traffic Management System
  • Past history of incidents on Manatee River bridges (US 41/301, Bus US 41)
  • Hurricane Evacuation Planning
Project Background

• Objectives
  • Strategic plan for maximizing the throughput of diversion or evacuation route through traffic engineering practices
    • Traffic signal timing patterns
    • Traffic operational improvements
    • Law enforcement deployment strategies
    • Decision matrix and operations guide development
  • Ease of implementation
Where will the traffic go?

- Interstate 75 carries ≈ 100,000 vehicles per day
  - Peak hour about 10% or 10,000 vehicles per hour
- Capacity of a signalized arterial ≈ 1,900 vehicles per lane per hour of green
  - Example: 3 lanes in one direction, 60% green ≈ 3,420 vehicles per hour
- Most arterials already crowded during peaks
- No arterial roadway has capacity to carry full diversion during the heavier hours
Scenarios

Manatee County Diversion and Evacuation Routes Overview

Legend:
- Interchange or Major Intersection
- Interchange Number

- Scenarios 1 through 5 reflect incidents along sections of Interstate 75
- Scenarios 6 and 7 reflect incidents on the Manatee River bridges
- Evacuation routes are used for barrier island emergency evacuations
Scenario 1
Scenario 2

Diversion and Evacuation Routes
Scenario 3

Diversion and Evacuation Routes

- Diversion Route Length: 4 miles
- Travel Time at Speed Limit: 4 mins
- Travel Time during Major Incident (65 mph): 16 mins

Manatee County
Diversion Routes
Scenarios 3S and 3N
Scenario 4

Diversion and Evacuation Routes

Manatee County
Diversion Routes
Scenarios 4S and 4N
Scenario 5
Scenario 6
Scenario 7

Diversion and Evacuation Routes
Evacuation
Timing Patterns

- For Each Diversion Scenario, 3 Timing Patterns Developed
  - Northbound
  - Southbound
  - Balanced

- For Each Evacuation Route, 2 Timing Patterns Developed
  - Minor Evacuation
  - Major Evacuation
Timing Patterns - Diversion

- Base Model (Synchro)
- Modify in TruTraffic for Diversion Conditions
  - Primary movements: add ≈60 seconds of green time
  - Secondary movements: add ≈30 seconds of green time
  - Progress Diversion traffic at 25 mph
- Define Patterns and FlexGroups on ATMS.now
- Field Check during Late Night
- Ready for Manatee County staff to implement when needed
Timing Patterns - Evacuation

- Base Model (Synchro)
- Modify in TruTraffic for Evacuation Conditions
  - Minor Evacuation – Typical Time of Day Cycle Length with One-Way Progression at Speed Limit
  - Major Evacuation – Increased Cycle Length with One-Way Progression at Speed Limit
- Define Patterns and FlexGroups on ATMS.now
- Field Check during Late Night
- Ready for Manatee County staff to implement if needed
Timing Pattern Development
## Route Details

| 3S | Flag # (see map) | ATMS now ID | Location | Traffic Signal Control to be Implemented | Notes | 3NS  
|----|------------------|-------------|----------|------------------------------------------|-------|-------
| 3S |                 |            |          | Pattern | Cycle | Split | Pattern | Cycle | Split |
| 1  | -                |            | In advance of Exit 224 southbound | -       | -     | -     | -       | -     | -     |
| 2  | -                |            |          |         |       |       |         |       |       |
| 3  | 3206             |            | On Southbound ramp at US 301 | 27      | 220   | 27    | -       | -     | -     |
| 4  | 3207             |            | 51st Ave E/19th St E | 27      | 220   | 21    | 28      | 250   | 22    |
| 5  | 3209             |            | Ellenton Gillette Road/Leflingwell Ave | 27      | 220   | 21    | 28      | 250   | 22    |
| 6  | 3210             |            | Harlee Packing, Inc Co. Driveway | 27      | 220   | 21    | 28      | 250   | 22    |
| 7  | 5213             |            | 12th Ave E/Haben Blvd | 27      | 220   | 21    | 28      | 250   | 22    |
| 8  | 5214             |            | 6th Ave E/Shopping Center | 27      | 220   | 21    | 28      | 250   | 22    |
| 9  | 5215             |            | US 41 (Tamiami Trail) northbound ramp | 27      | 220   | 21    | 28      | 250   | 22    |
| 10 | 5218             |            | US 41/US 301 (Tamiami Trail) southbound ramp | 27      | 220   | 21    | 28      | 250   | 22    |
| 11 | -                |            | US 41/US 301 (Tamiami Trail) southbound | -       | -     | -     | -       | -     | -     |
| 12 | -                |            | 7th St | -       | -     | -     | -       | -     | -     |
| 13 | 5220             |            | Haben Blvd | 27      | 220   | 21    | 28      | 250   | 22    |
| 14 | 4113             |            | SR 64/Manatee Ave | 27      | 220   | 21    | 28      | 250   | 22    |
| 15 | 4117             |            | SR 64/6th Ave | 27      | 220   | 21    | 28      | 250   | 22    |
| 16 | 4112             |            | 9th Ave E/Martin Luther King Jr Ave | 27      | 220   | 21    | 28      | 250   | 22    |
Implementation Guide

Diversion and Evacuation Routes

Timing Pattern Implementation Guide

Manatee County
Department of Public Works / Traffic Management
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Diversion and Evacuation Routes
Questions?

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