

**Lee Roy Selmon Crosstown Expressway**

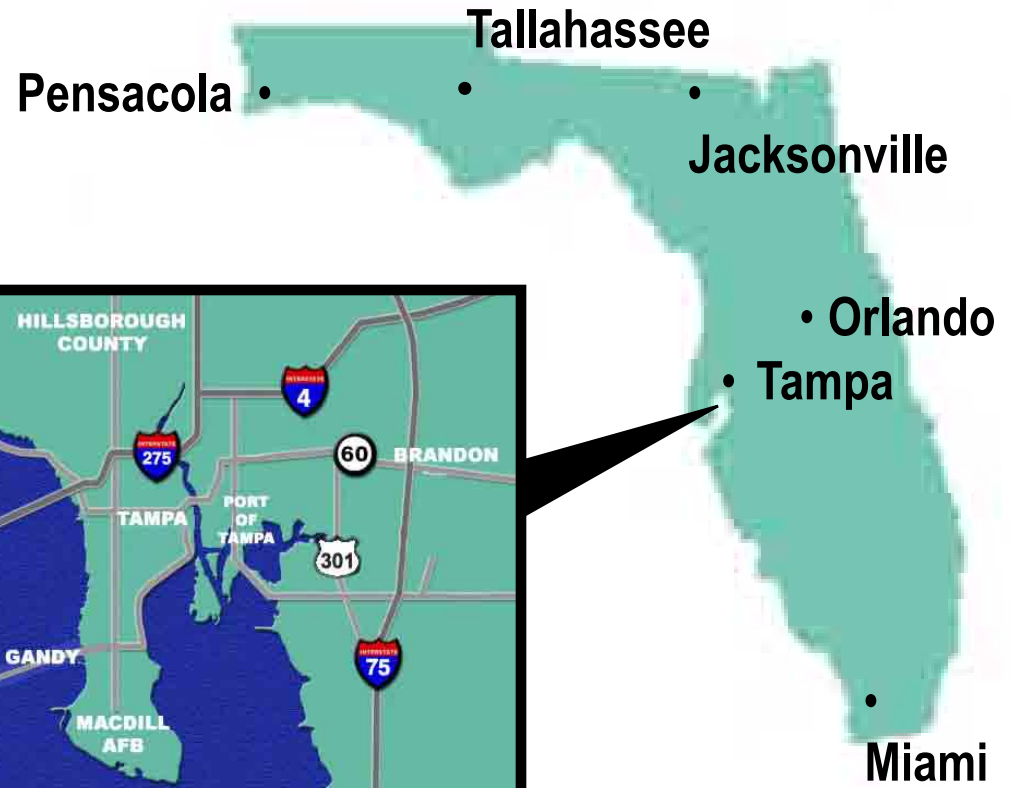
**Reversible Elevated  
Express Lanes**

**A Solution for Urban  
Traffic Congestion**

**Martin Stone, Ph.D., AICP  
Director of Planning**

**Tampa-Hillsborough Expressway Authority**



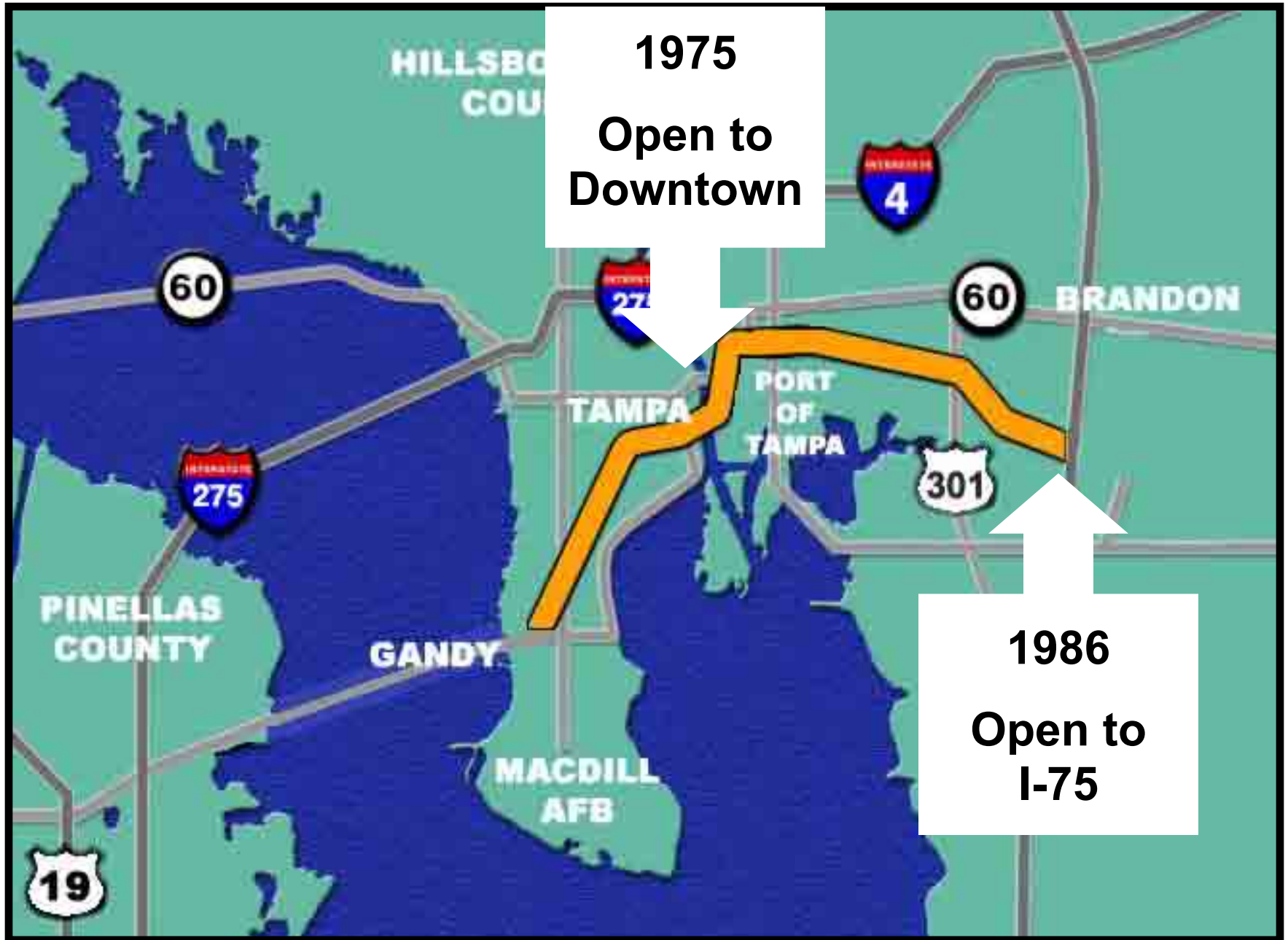




**1975**  
**Open to**  
**Downtown**



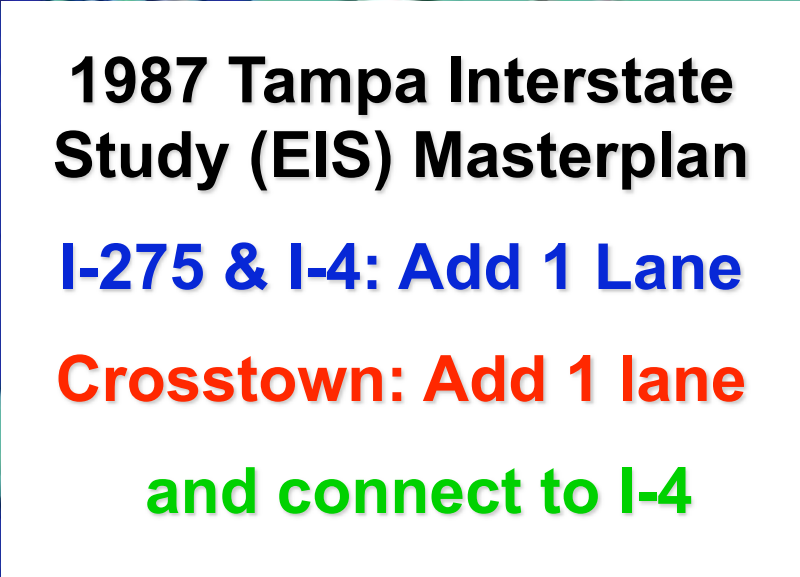
**1975**  
**Open to**  
**Downtown**



**1986**  
**Open to**  
**I-75**

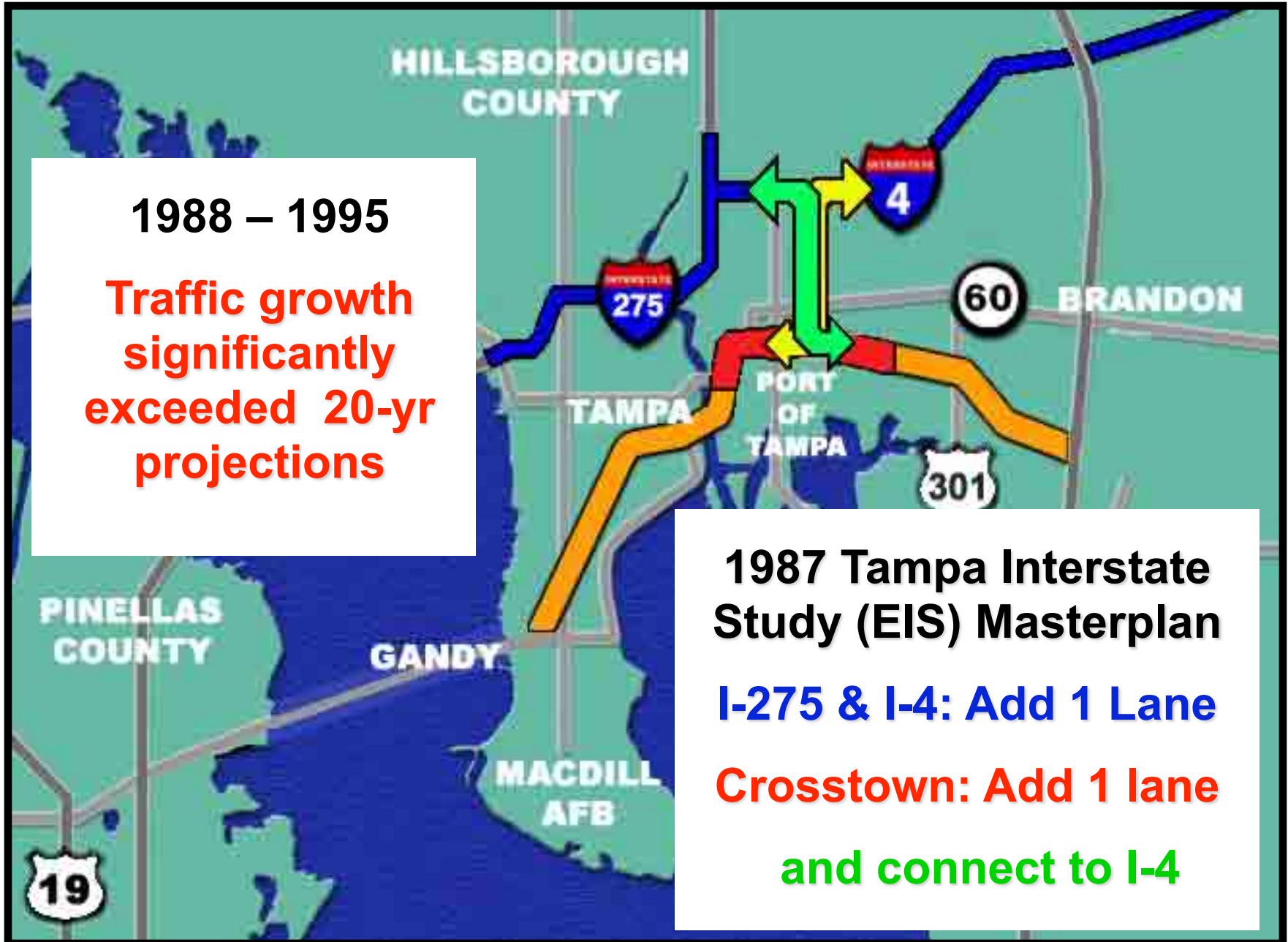






**1988 – 1995**

**Traffic growth  
significantly  
exceeded 20-yr  
projections**



**1987 Tampa Interstate  
Study (EIS) Masterplan**

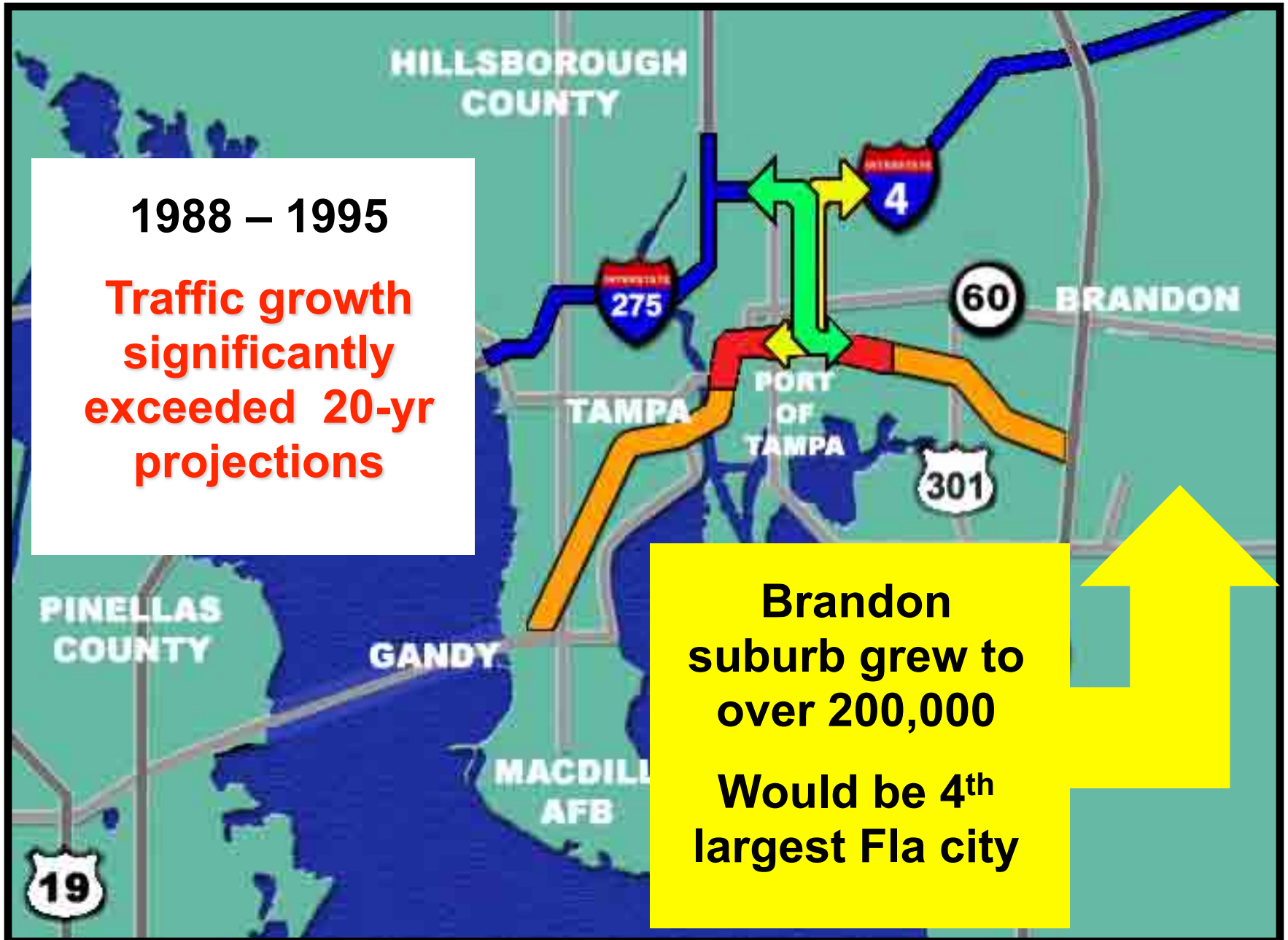
**I-275 & I-4: Add 1 Lane**

**Crosstown: Add 1 lane  
and connect to I-4**



**1988 – 1995**

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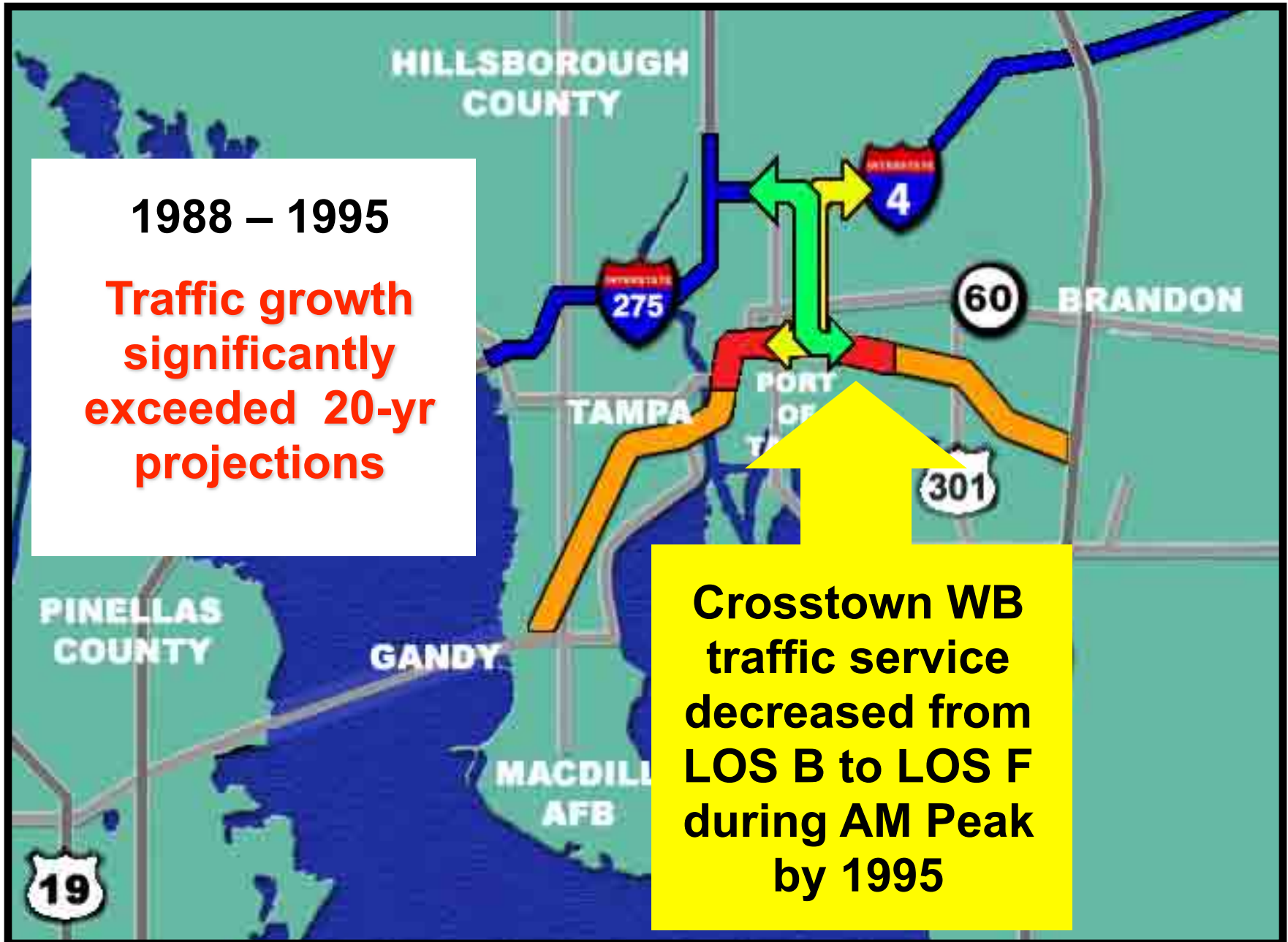


**Brandon  
suburb grew to  
over 200,000**

**Would be 4<sup>th</sup>  
largest Fla city**

**1988 – 1995**

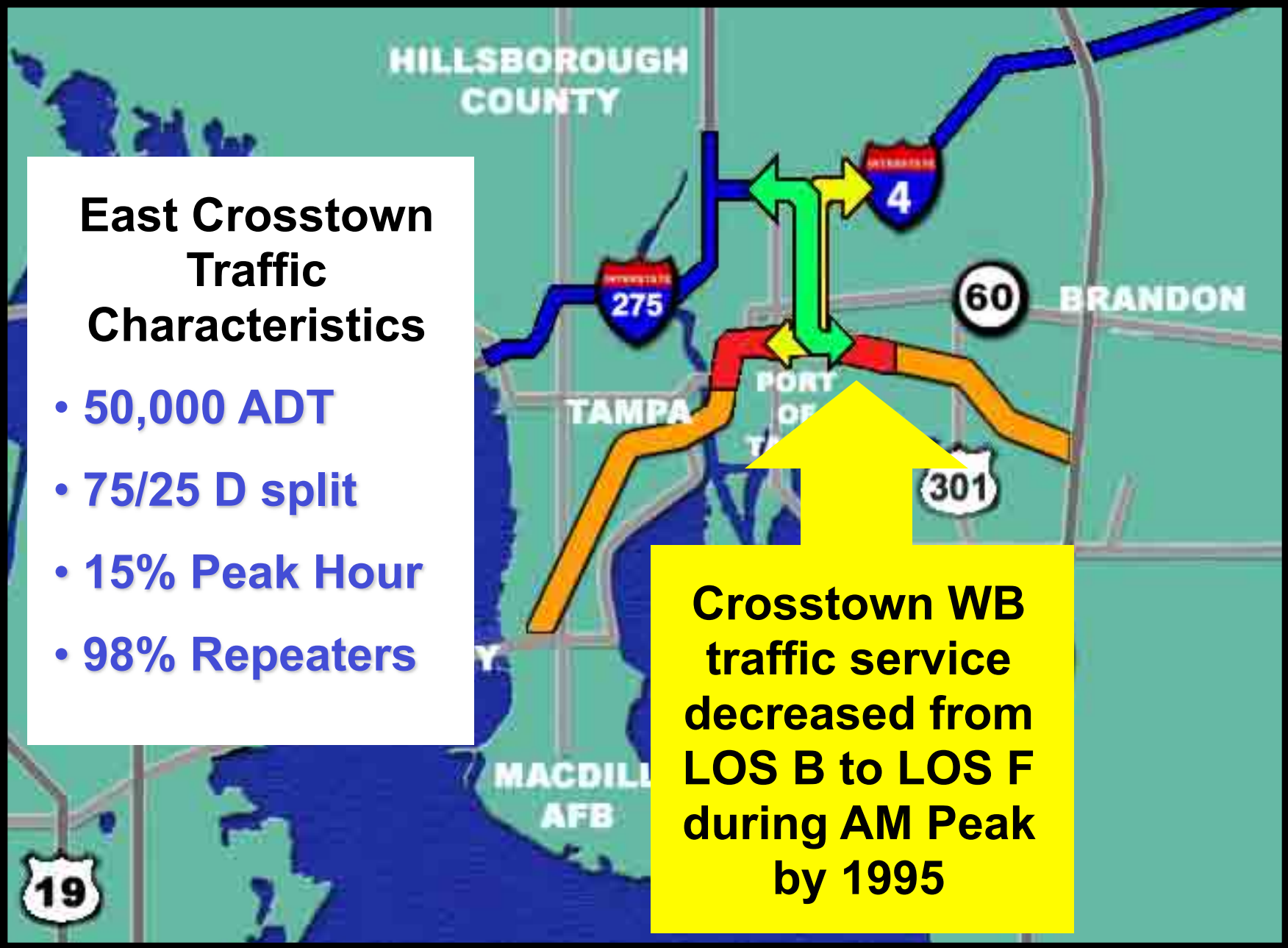
**Traffic growth  
significantly  
exceeded 20-yr  
projections**



**Crosstown WB  
traffic service  
decreased from  
LOS B to LOS F  
during AM Peak  
by 1995**

## East Crosstown Traffic Characteristics

- 50,000 ADT
- 75/25 D split
- 15% Peak Hour
- 98% Repeaters



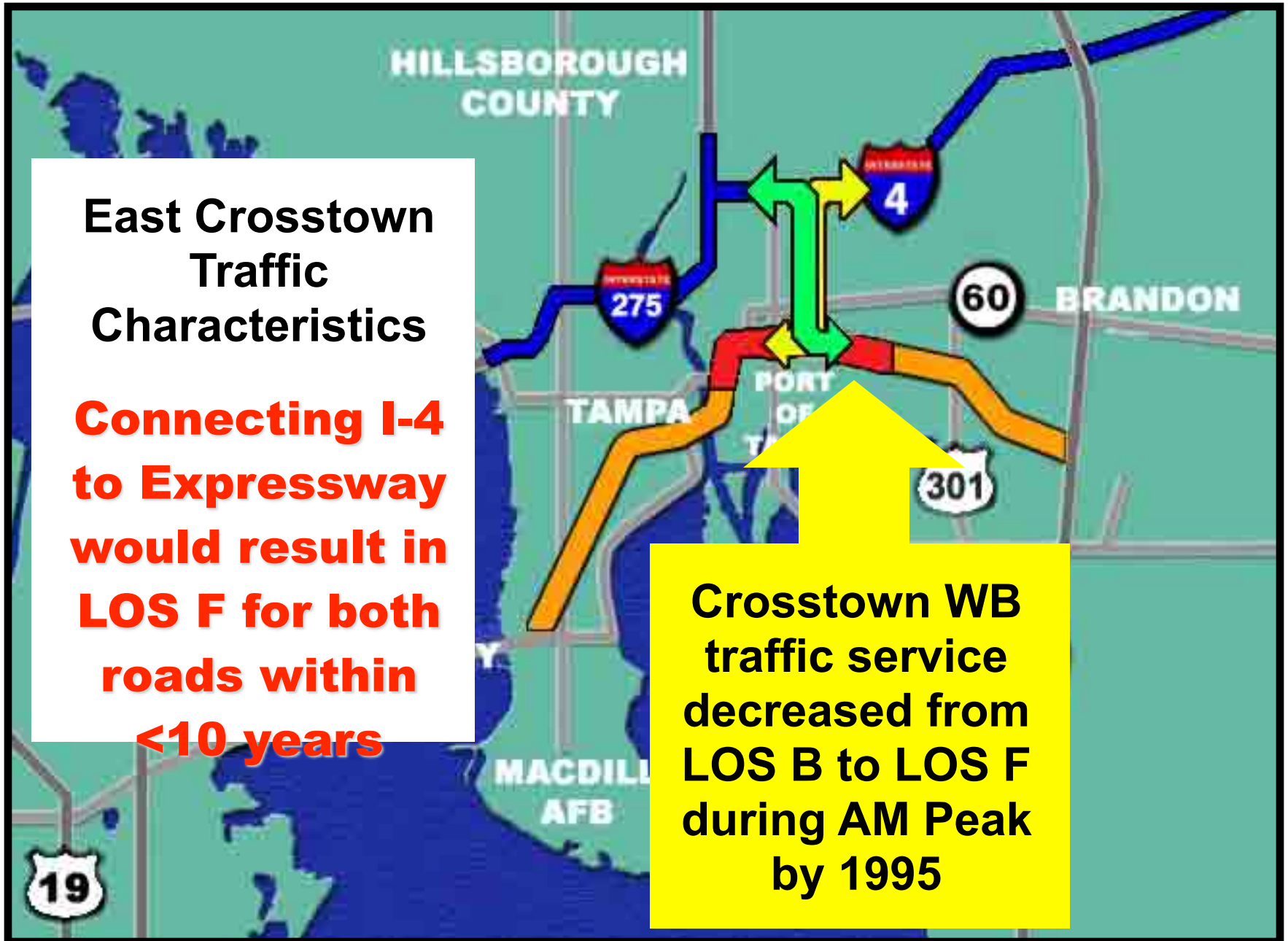
The map shows the East Crosstown area in Hillsborough County, Florida. Key features include: Hillsborough County at the top; Interstate 4 (I-4) running diagonally from the top right; Interstate 275 (I-275) running horizontally across the middle; US Highway 19 running vertically on the left; US Highway 60 running horizontally on the right; US Highway 301 running diagonally from the bottom right; Brandon located to the east of the main intersection; Tampa located to the west of the main intersection; Port of Tampa located at the intersection of I-4 and I-275; MacDill AFB located to the south of the main intersection; A large yellow arrow points from the bottom towards the intersection of I-4 and I-275, indicating the direction of traffic flow discussed in the text.

**Crosstown WB  
traffic service  
decreased from  
LOS B to LOS F  
during AM Peak  
by 1995**

## East Crosstown Traffic Characteristics

**Connecting I-4  
to Expressway  
would result in  
LOS F for both  
roads within  
<10 years**

**Crosstown WB  
traffic service  
decreased from  
LOS B to LOS F  
during AM Peak  
by 1995**





# Problems

## 1. Severe AM/PM Peak Traffic Congestion

- Long-term Need for 10 Lanes

# **Problems**

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## **2. Physical Considerations**

- Narrow ROW - Constrained**

# **Problems**

## **1. Severe AM/PM Peak Traffic Congestion**

- Long-term Need for 10 Lanes

## **2. Physical Considerations**

- Narrow ROW - Constrained

## **3. Fixed Rail Not Feasible**

- Population (Approx 1,000,000)
- Land Use & Density Not Suitable
- No Complimentary Infrastructure
- Ridership NOT Large Enough to Positively Affect Traffic Congestion
- No Local Capital or O&M Subsidies
- BRT a More Flexible Transit Solution

# **I-4/Crosstown Solution**

- 1. Scrapped original expansion to 6 lanes**

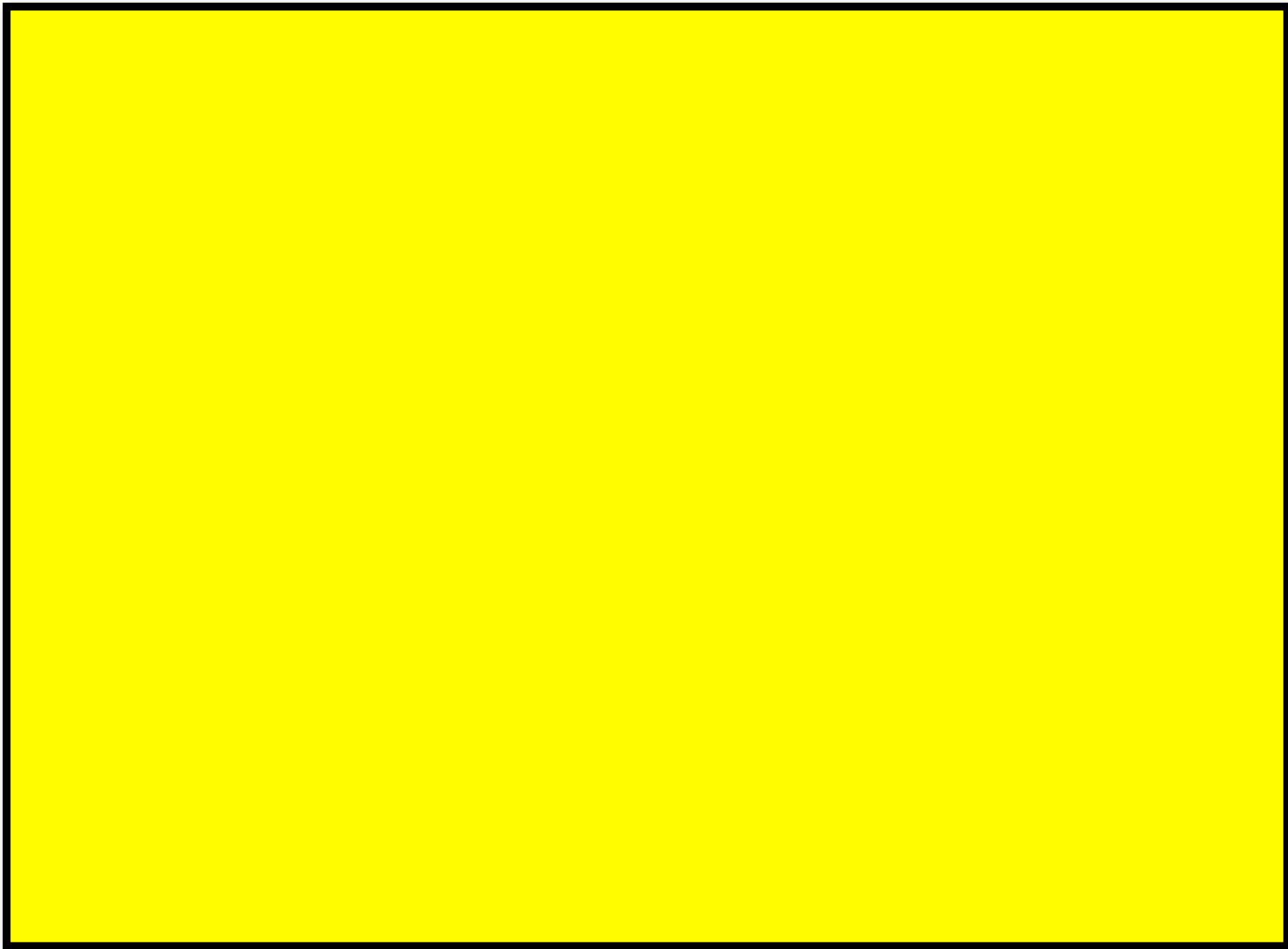


# **I-4/Crosstown Solution**

- 1. Scrapped original expansion to 6 lanes**
- 2. Developed 3 reversible express lanes**
  - Divert at least 50% of commuter traffic from existing lanes to express lanes**
  - Use excess capacity on existing lanes to handle traffic from I-4 connection**

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- 2. Developed 3 reversible express lanes**
  - Divert at least 50% of commuter traffic from existing lanes to express lanes**
  - Use excess capacity on existing lanes to handle traffic from I-4 connection**
- 3. Build most of project as a concrete segmental bridge in the median**  
**“6 lanes on 6 feet” – to save valuable ROW for future transportation needs**

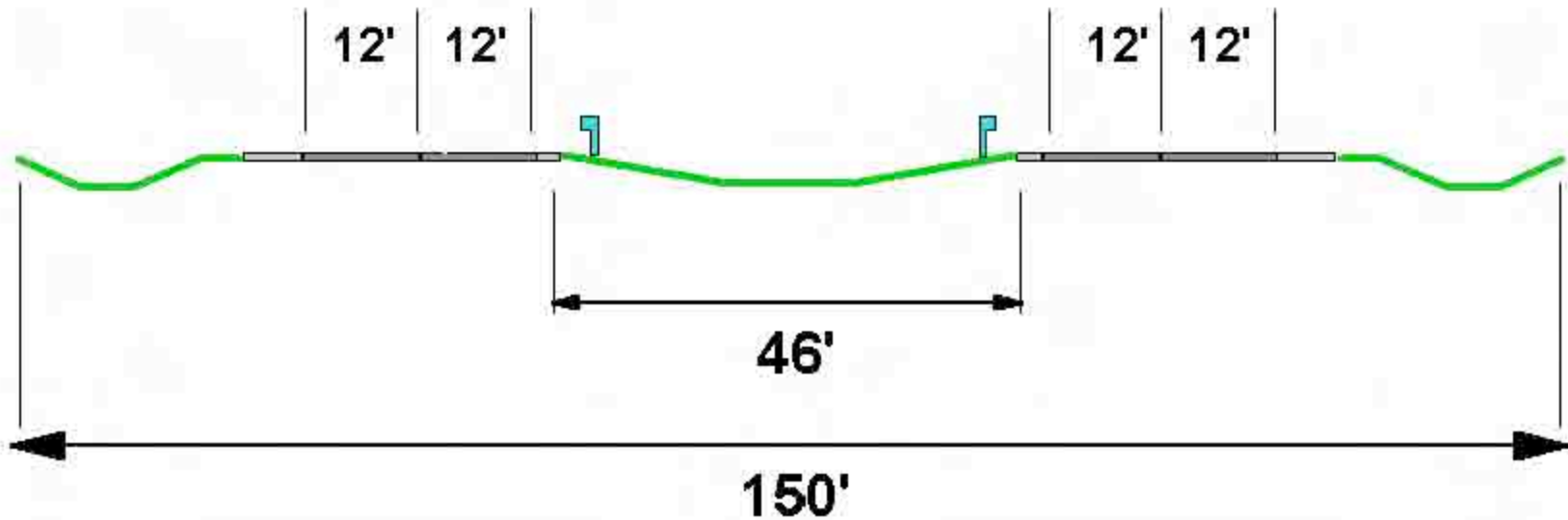






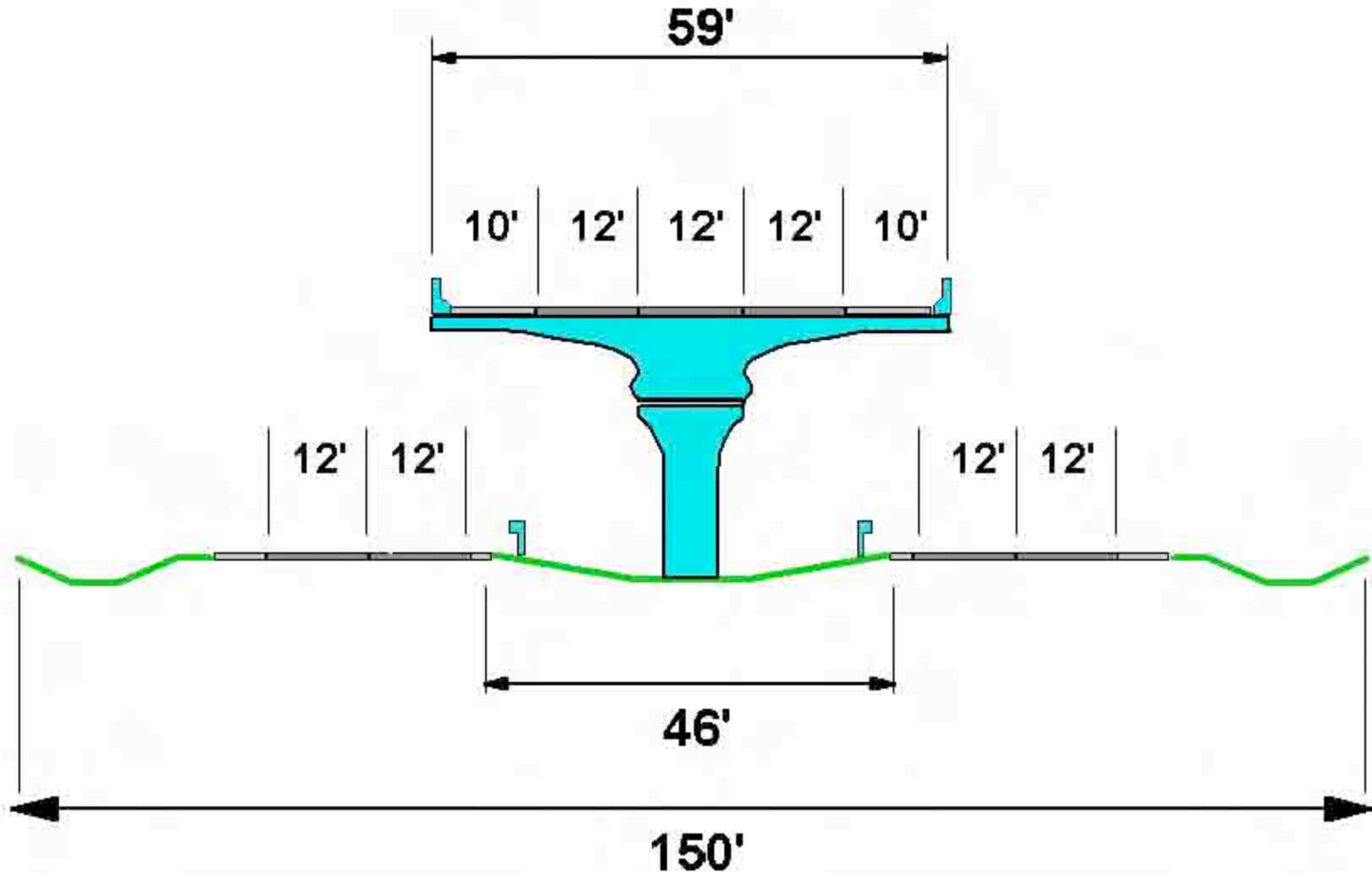
# Selmon Crosstown Expressway Typical Section

## Existing 4 Lanes

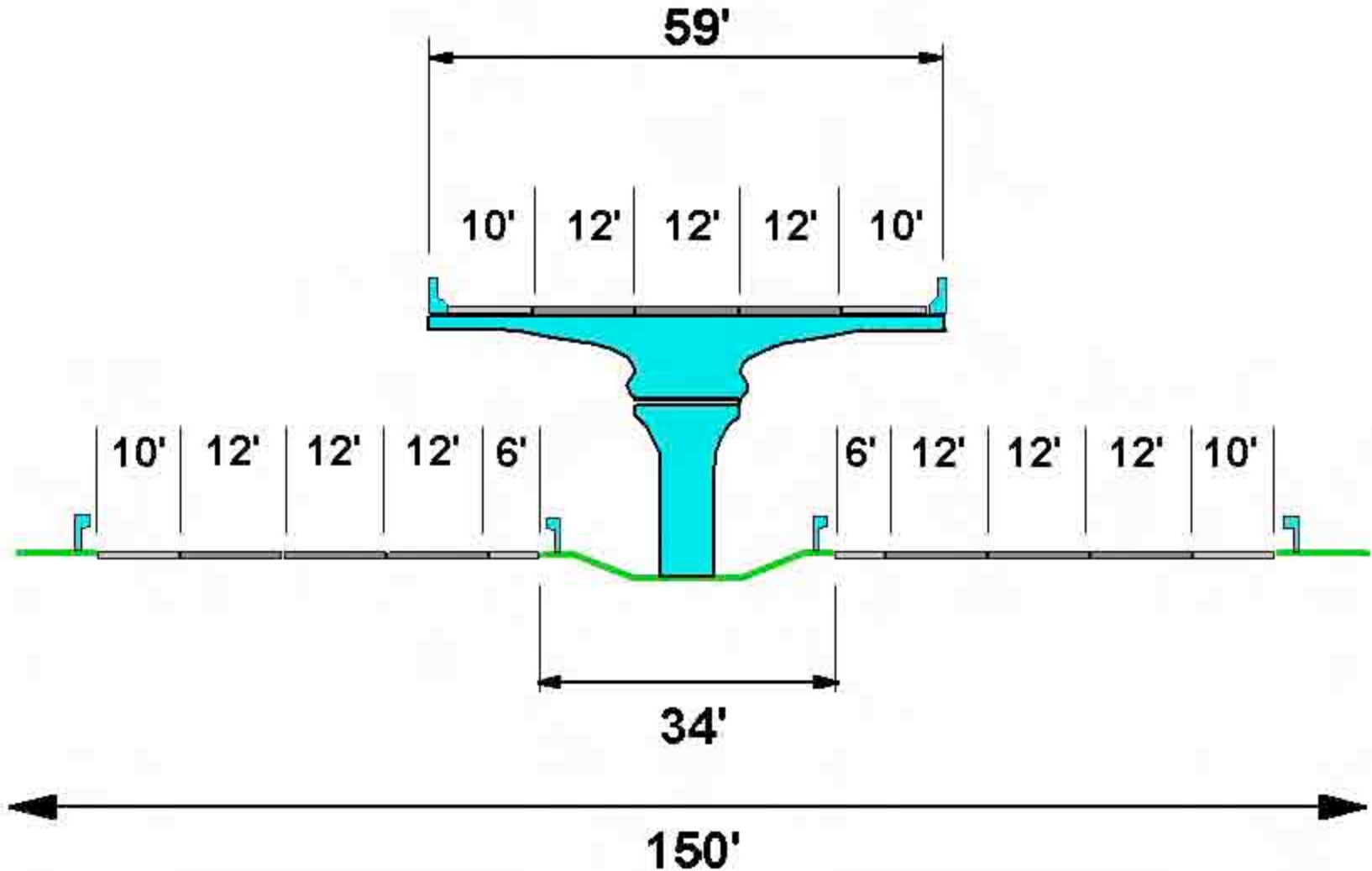


# Selmon Crosstown Expressway Typical Section

## Existing 4 Lanes with 3 Express Lanes

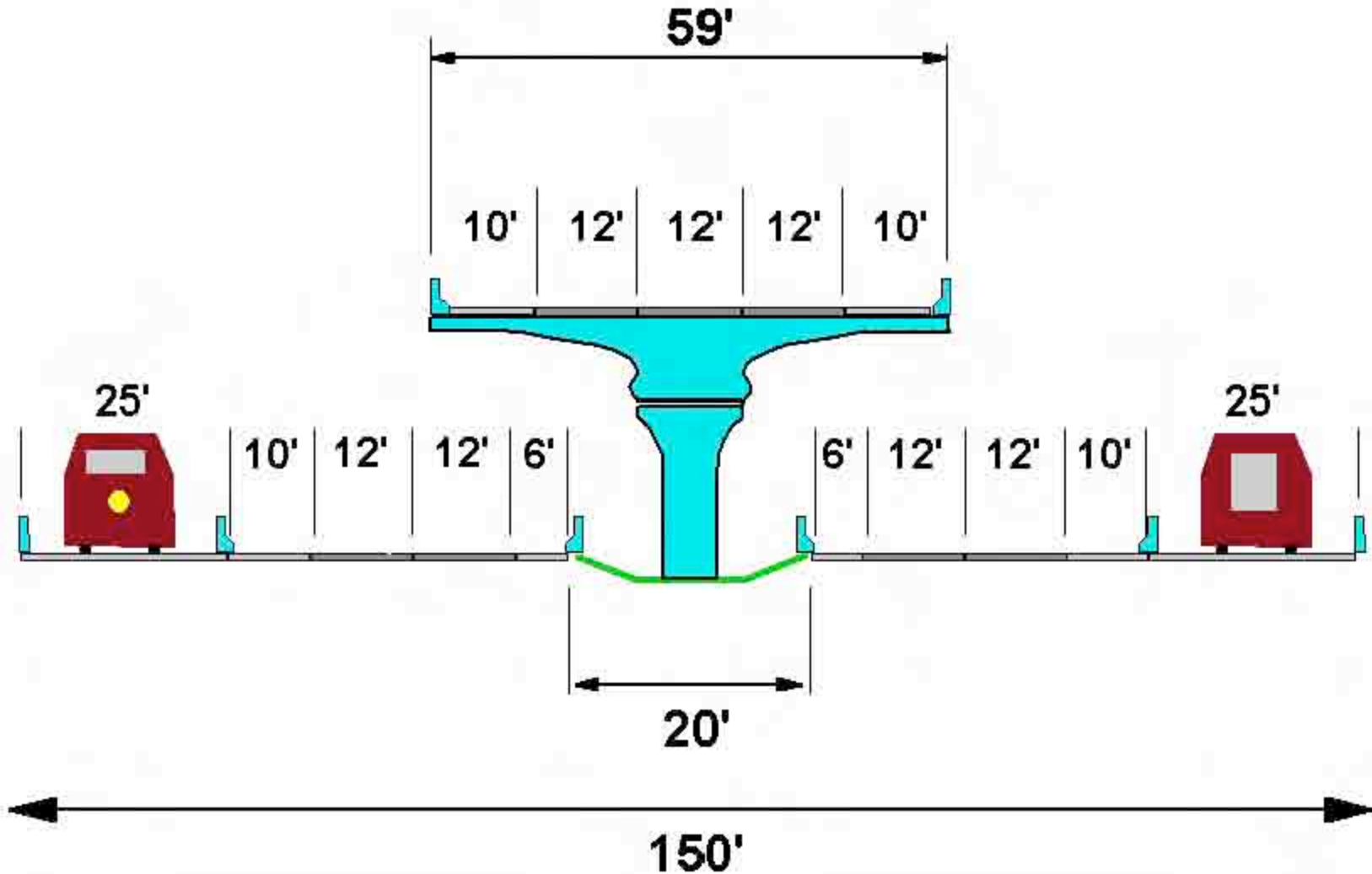


## Expand to 6 Lanes with 3 Express Lanes



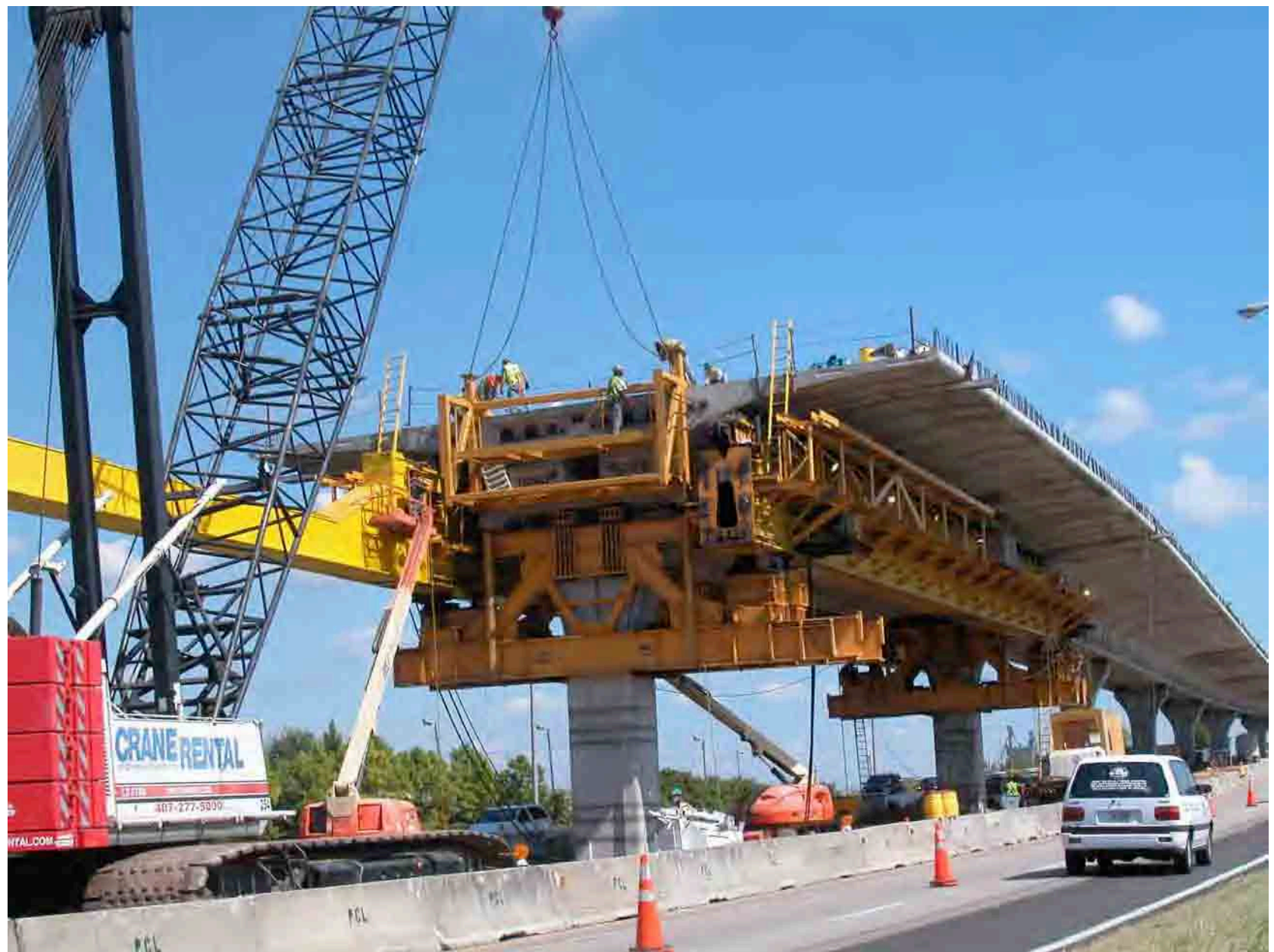
# Selmon Crosstown Expressway Typical Section

## Add Transit with 3 Express Lanes

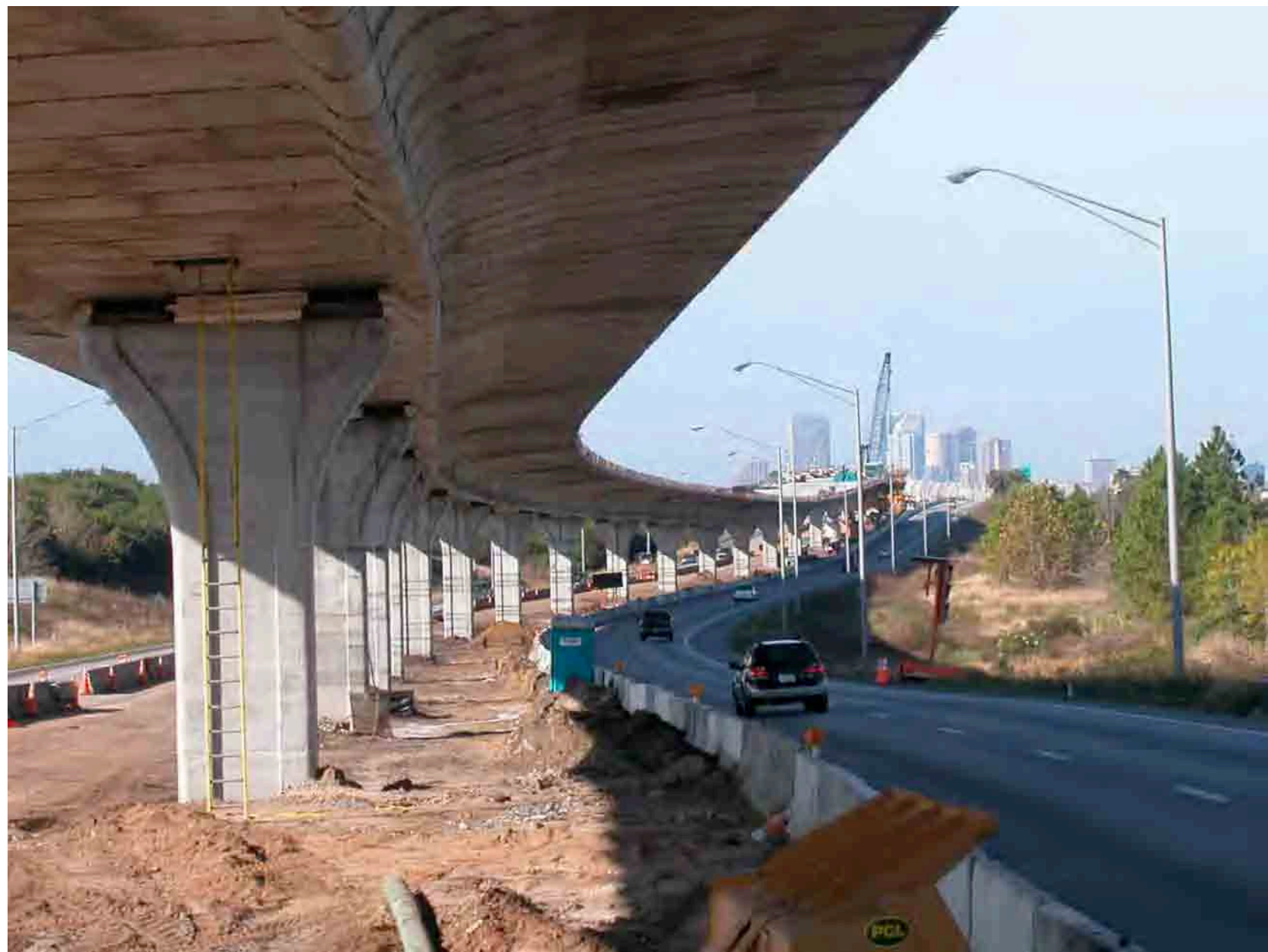












# **Project Costs & Benefits**

## **Total Project Cost = \$300 Million**

- Planning & Env Studies = \$2M
- Design = \$4M
- Bridge Section (6 miles) =  
\$144M
- Downtown gateway (1 mile) =  
\$20M
- At-Grade Section (3 miles) =  
\$40M
- All ITS Controls & TMC = \$17M
- ROW (ponds) = \$5M
- ROW (downtown gateway) =  
\$28M

# **Project Costs & Benefits**

## **Transportation Benefits**

- Total Traffic = 115,000 ADT**
- East End Traffic = 75,000 ADT**
- LOS F in AM & PM Peak**
- AM Peak Trip Time = 30-40 Minutes**

# **Project Costs & Benefits**

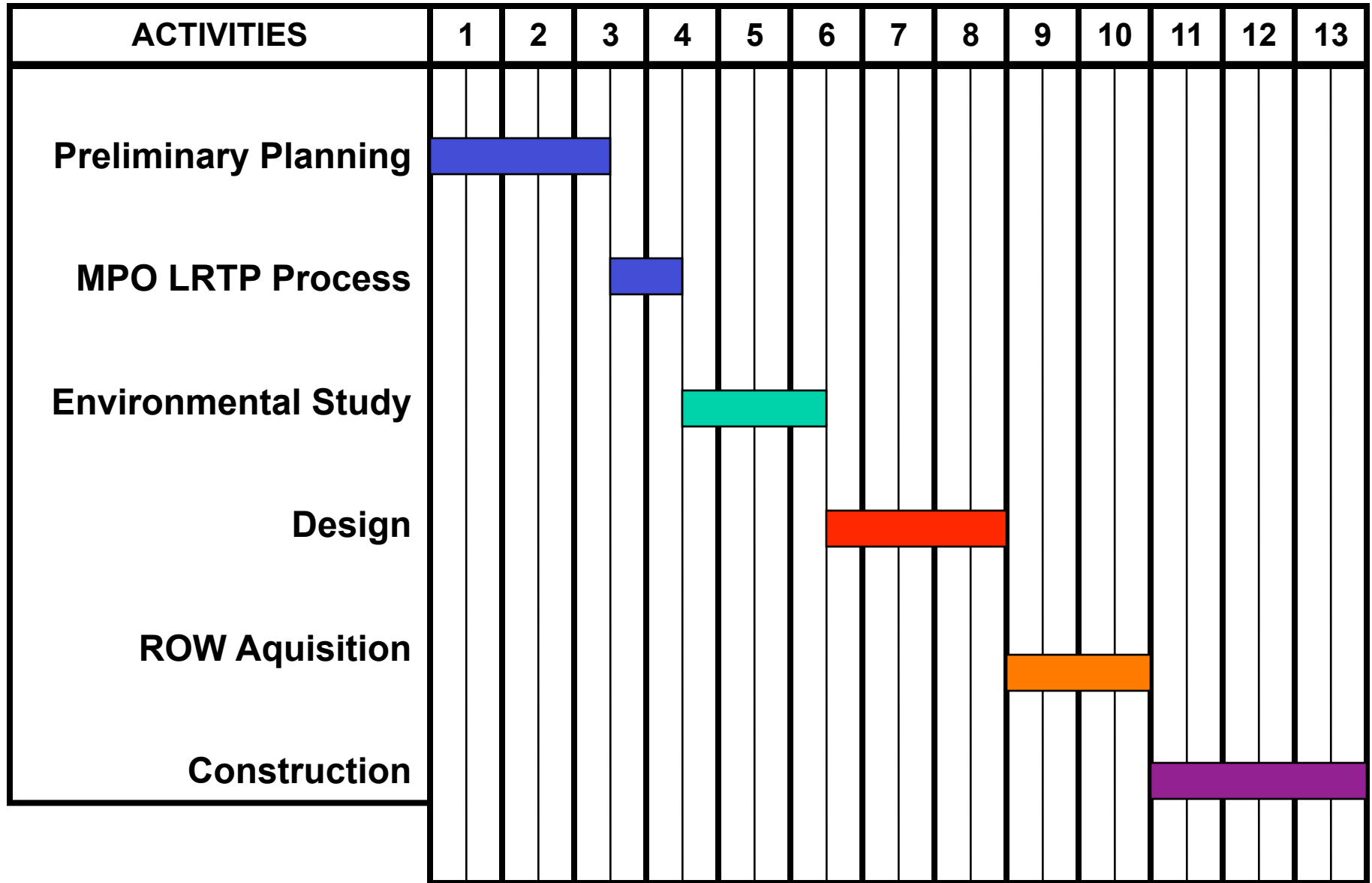
## **Transportation Benefits**

- Total Traffic = 115,000 ADT
- East End Traffic = 75,000 ADT
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## **With Reversible Express Lanes**

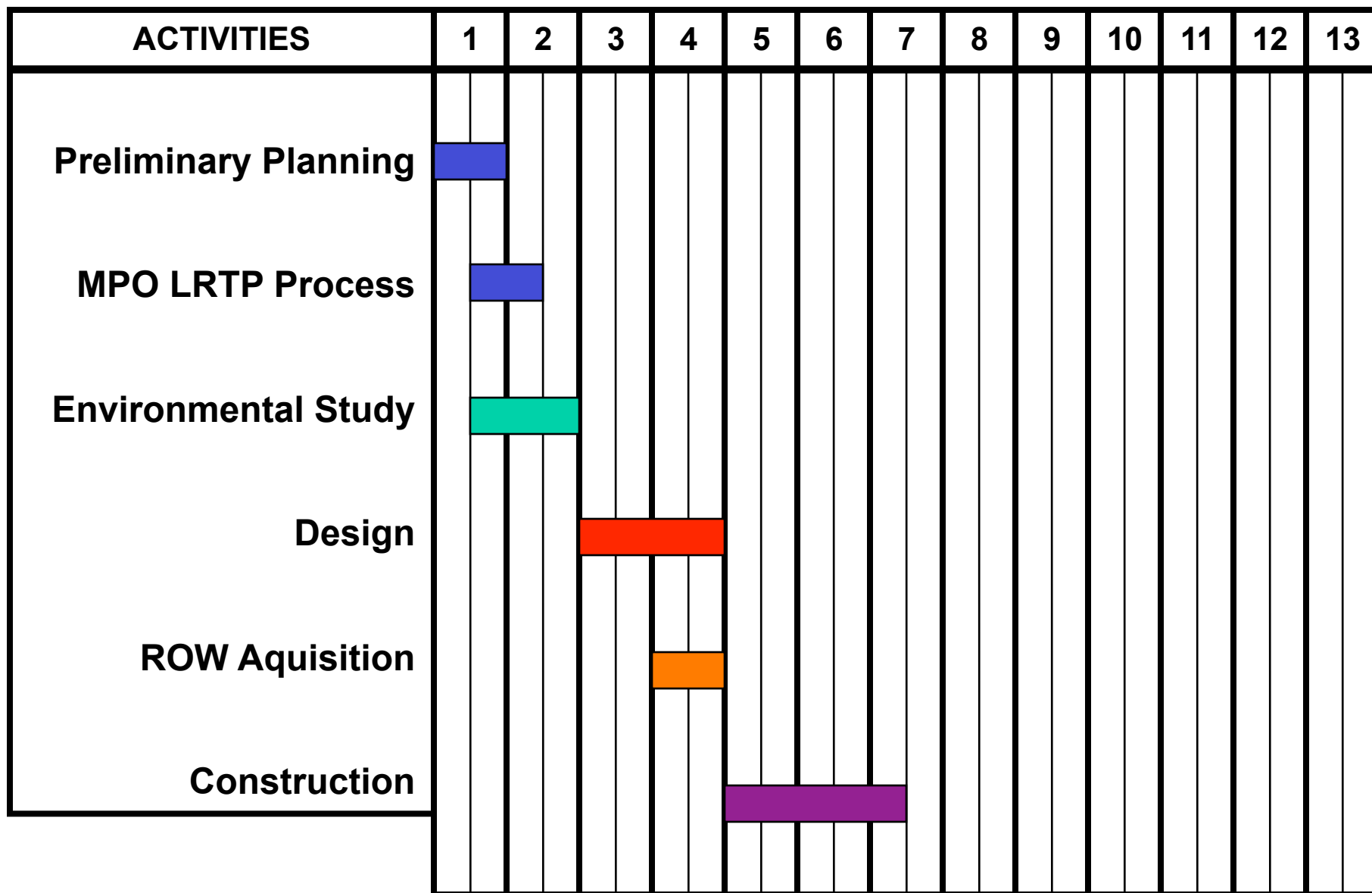
- 150% Increase in Capacity
- Divert 10,000 Trips from Local Roads
- LOS B-C for East End of Expressway
- AM Peak Trip time = 10 Minutes
- Four New Express Bus Routes

# Typical New Projects Planning & Production Schedule





## Elevated Lanes Planning & Production Schedule

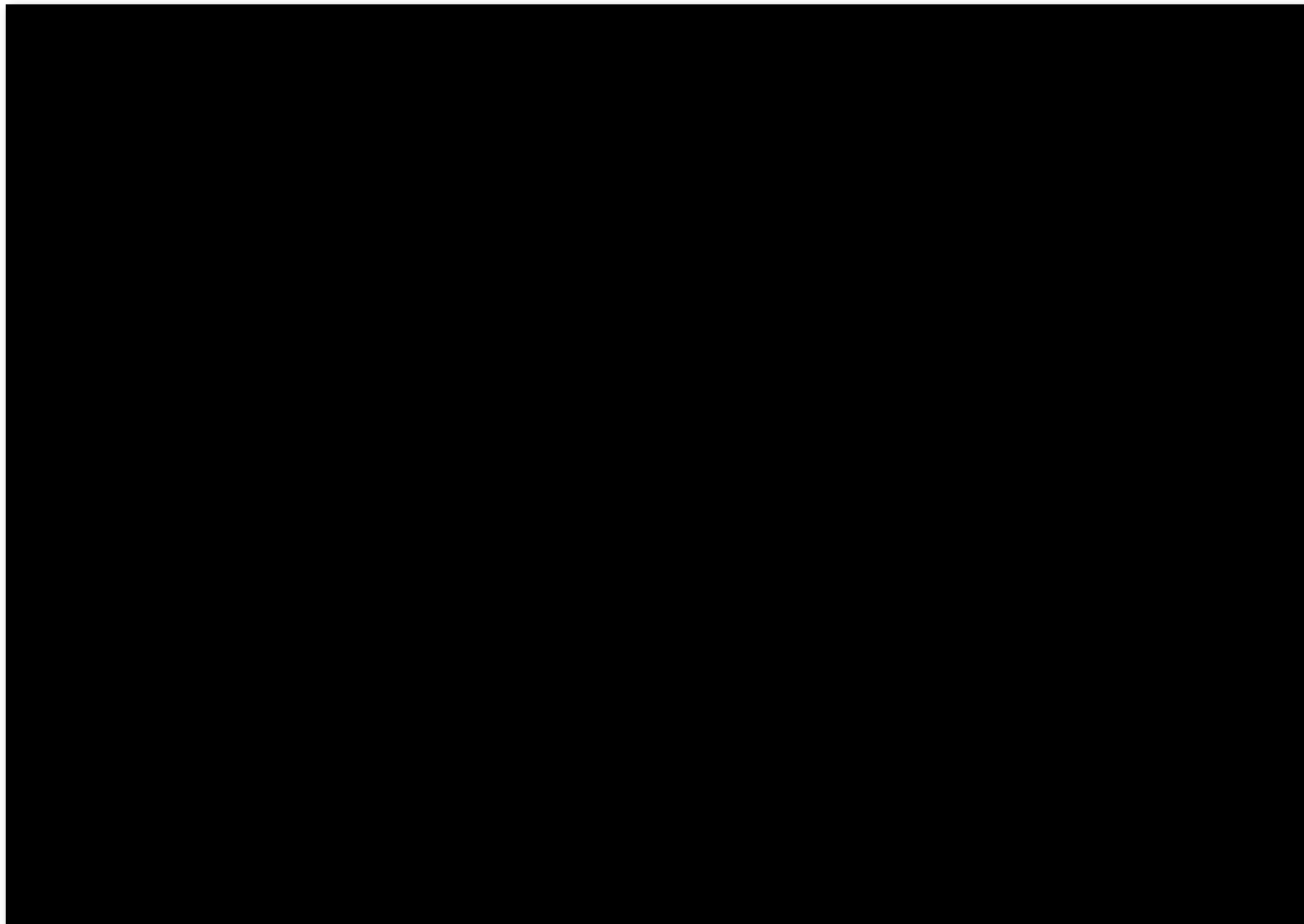


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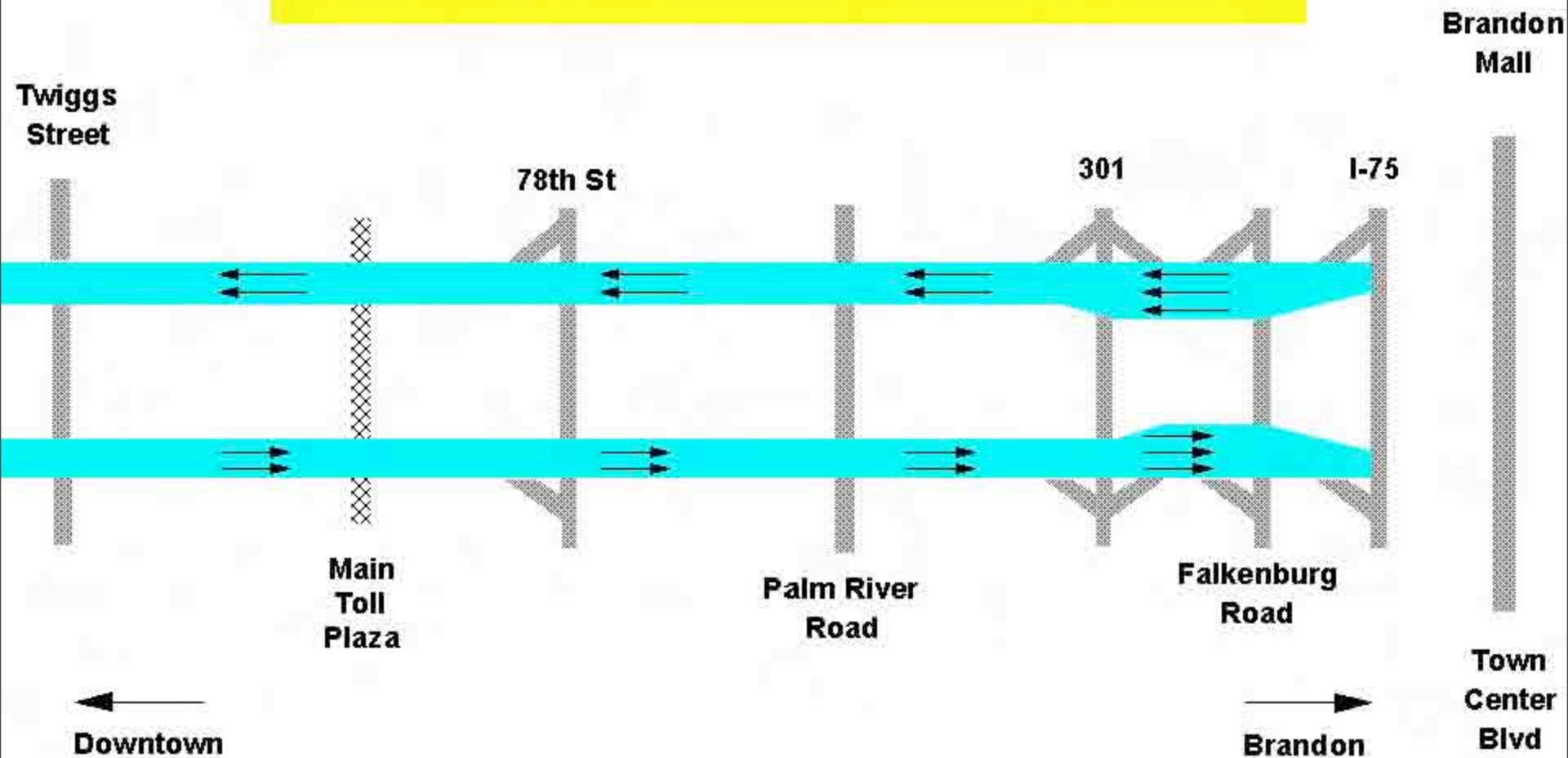


# Intelligent Transportation System

**Reversible Express Lane  
Operations**

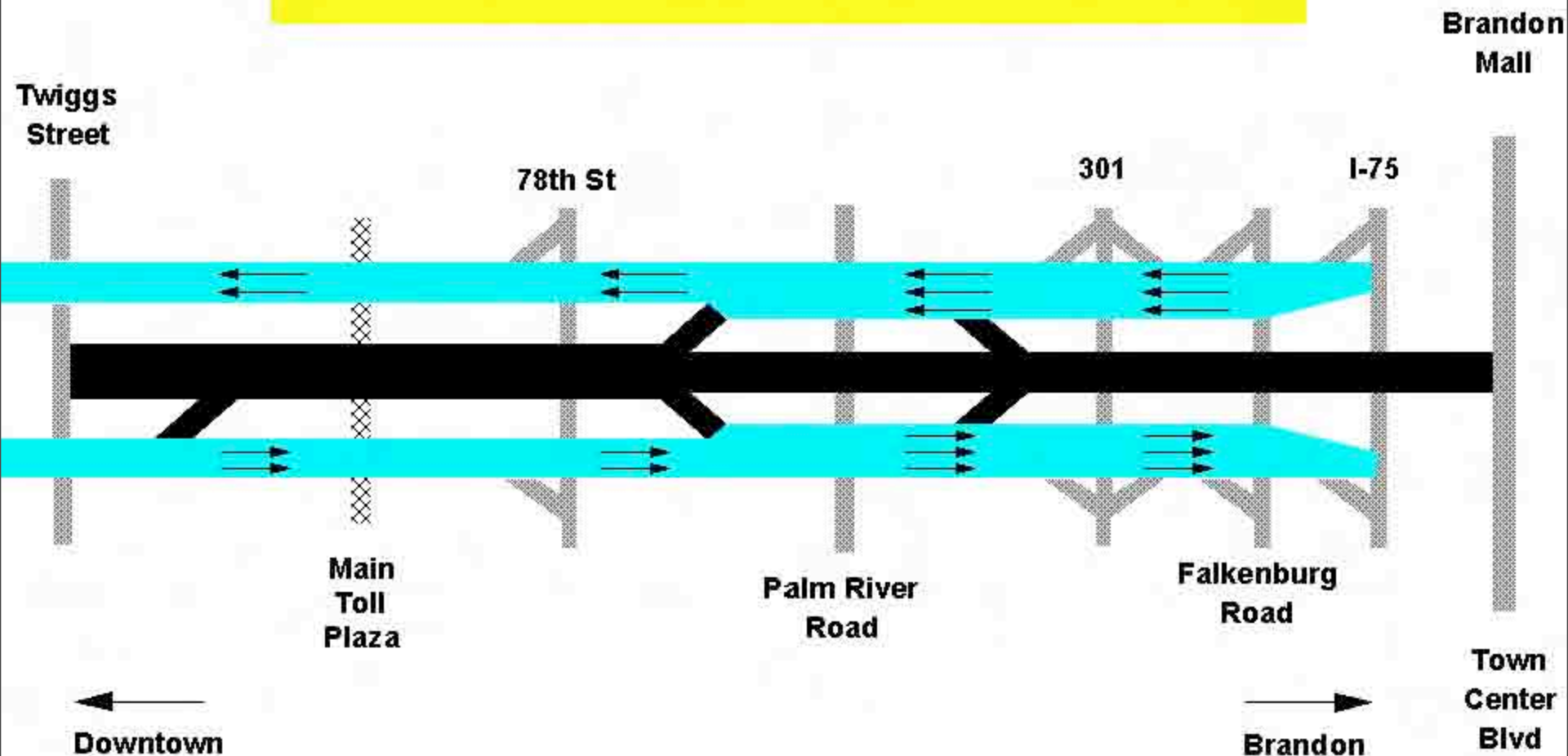


## Existing General Use Lanes





# Reversible Express Lanes

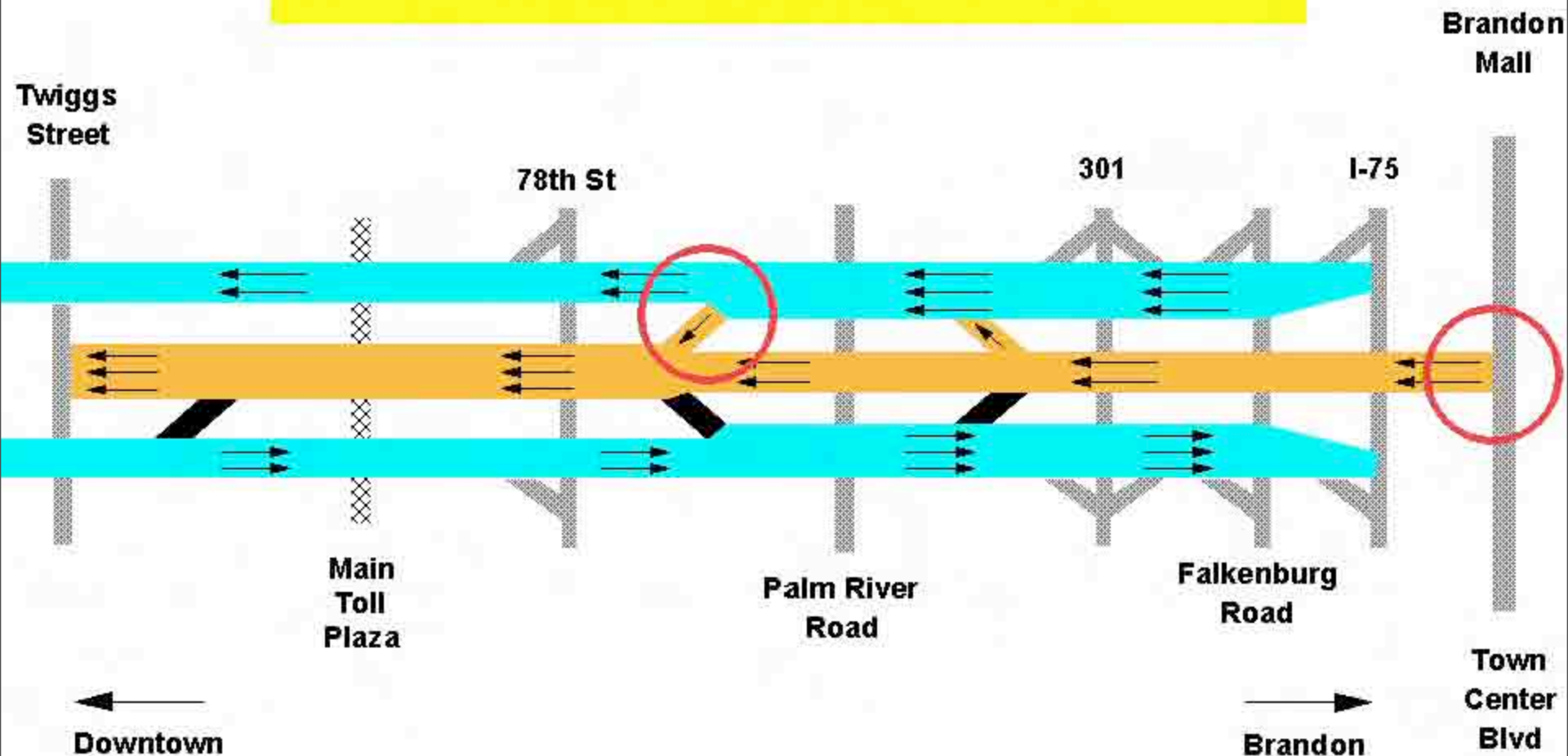






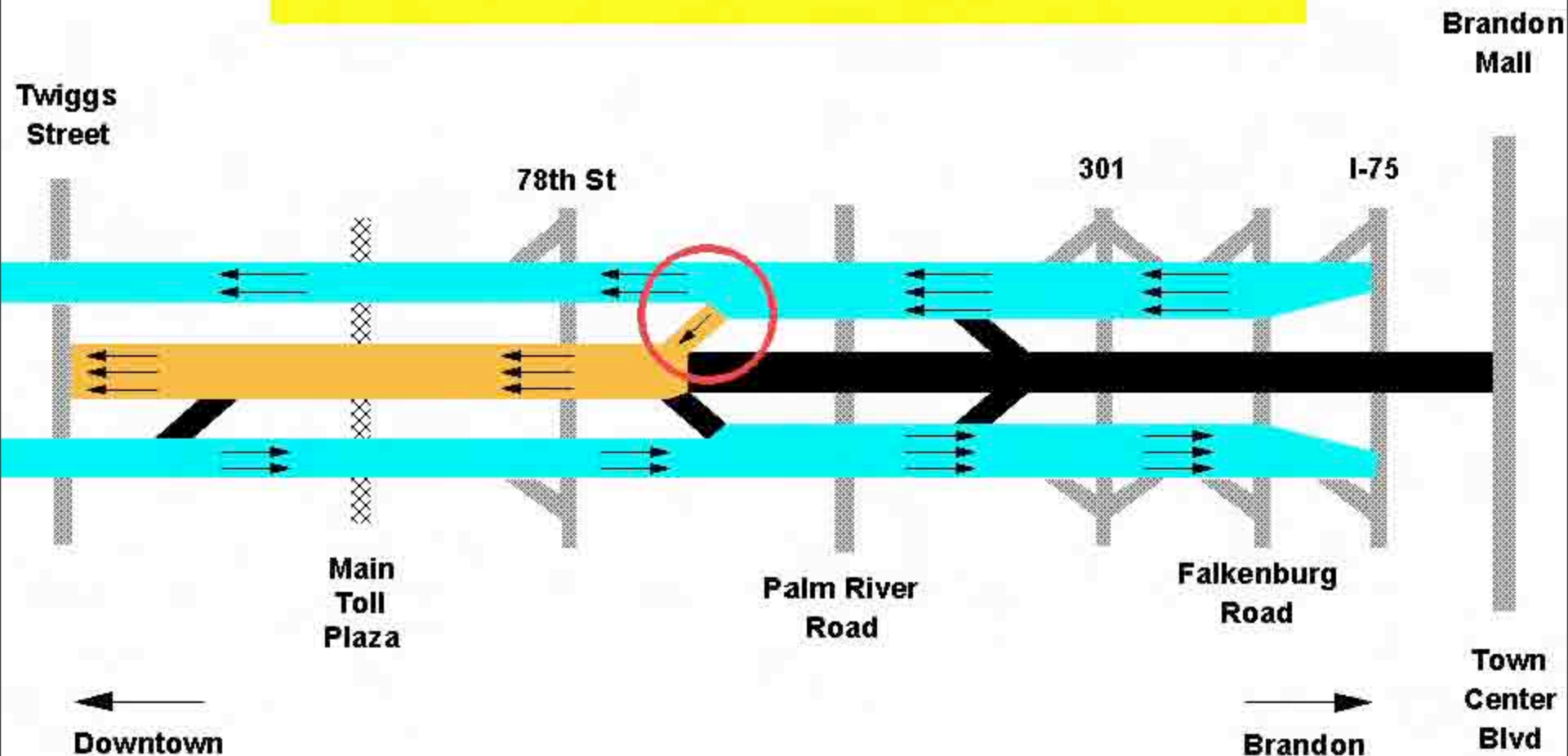
# AM OPERATION

## Open WB Ramps 6:00 - 10:00 AM



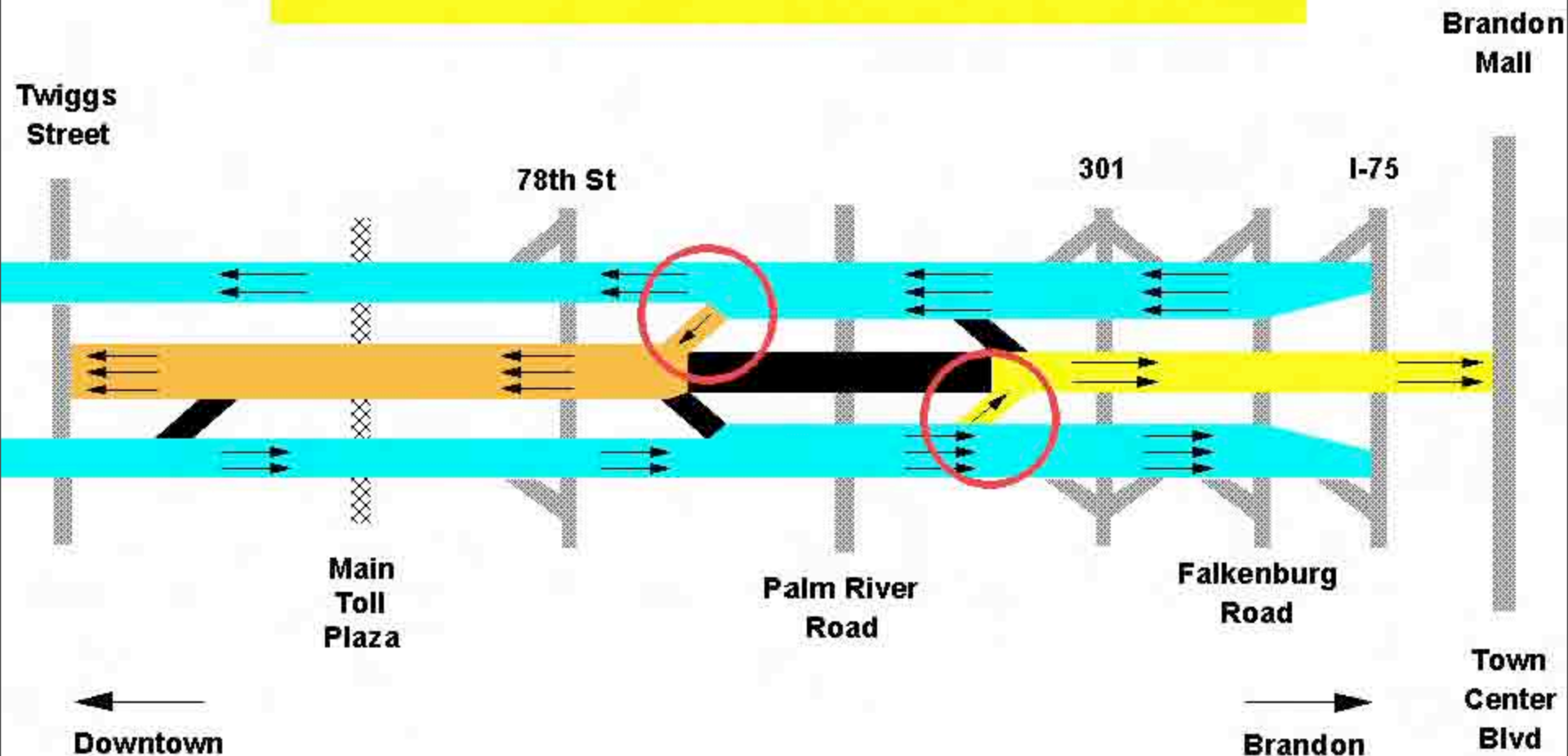


# Close Brandon Entry for Direction Change 10:00 - 10:30 AM



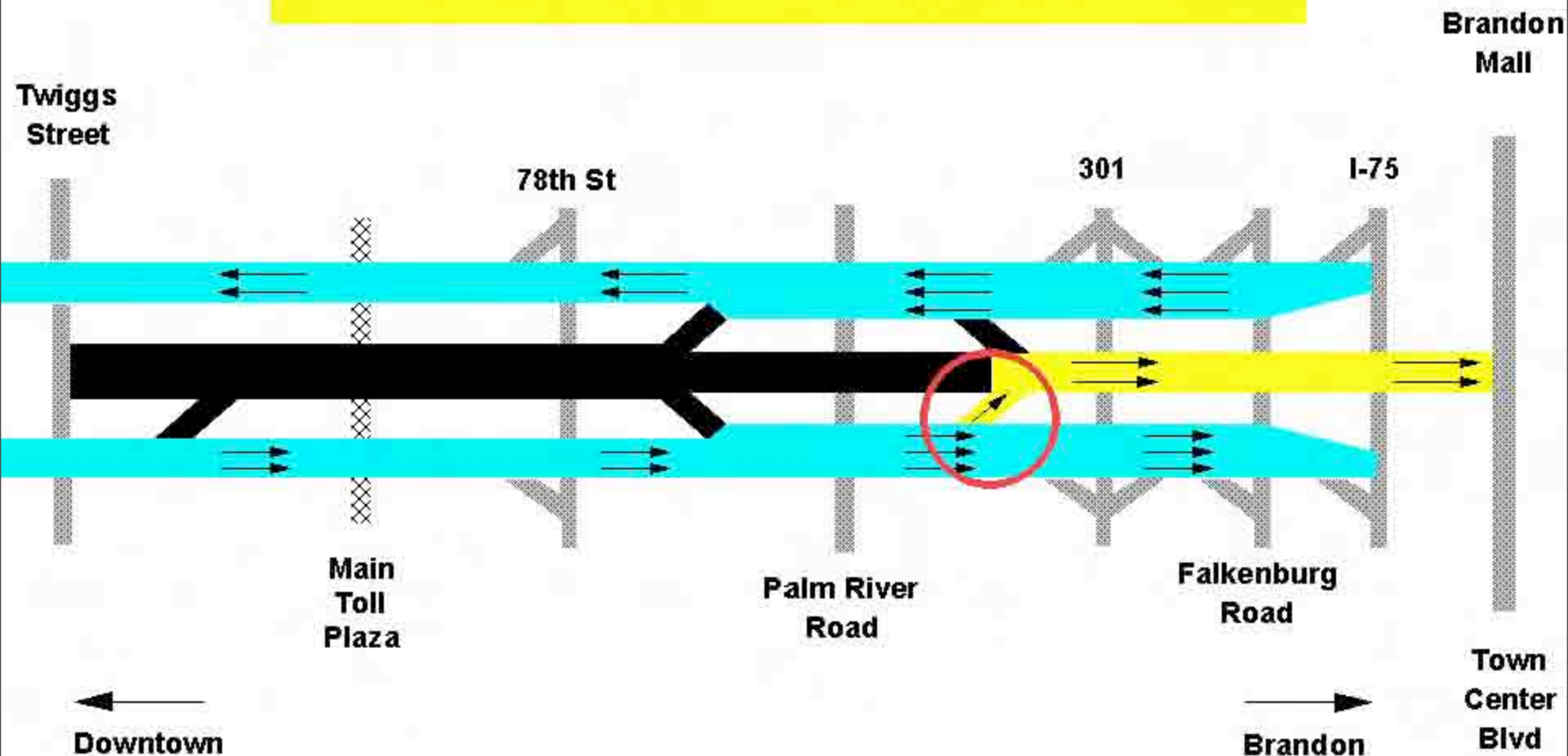


# Open Brandon Eastbound Ramp 10:30 AM





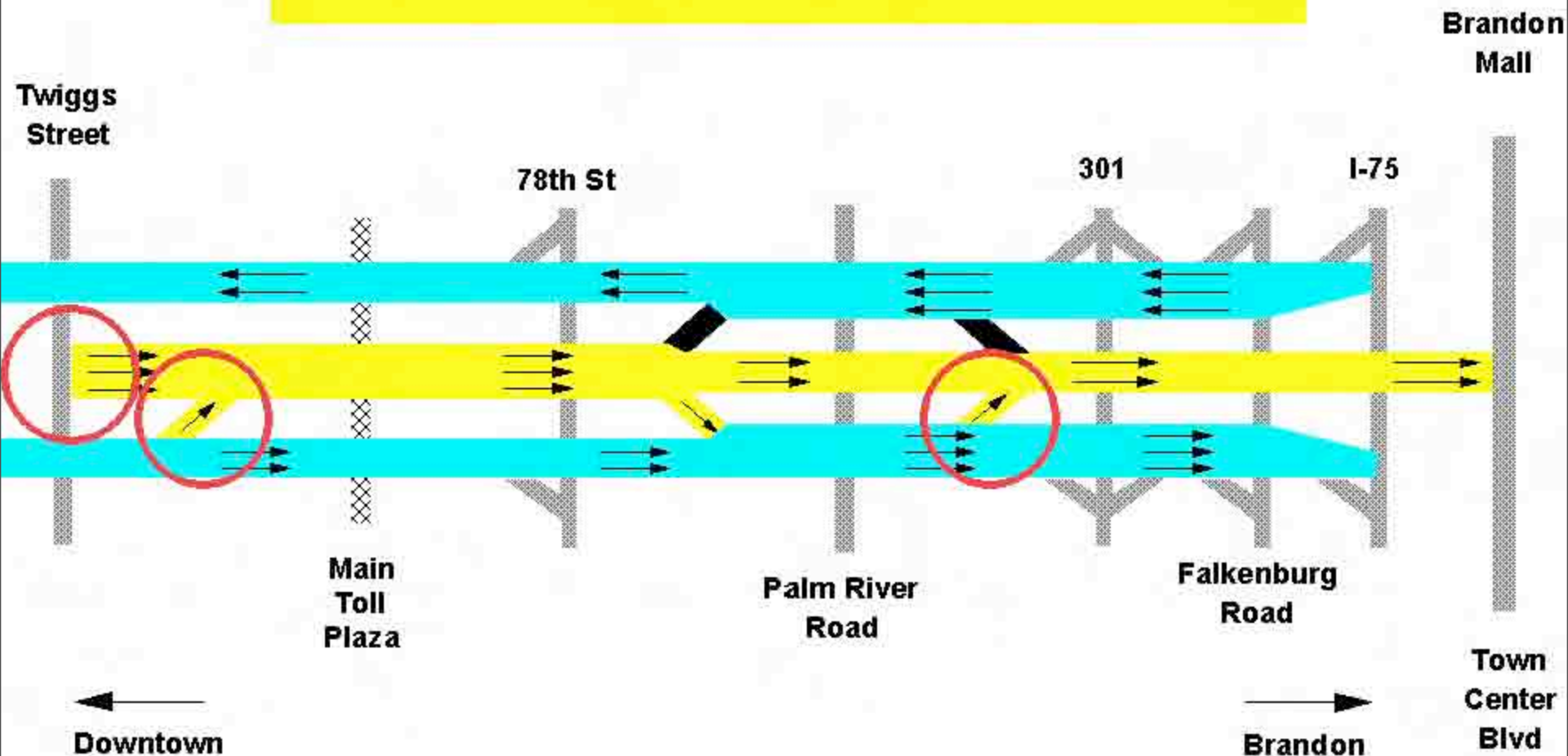
# Close Downtown for Direction Change 2:30 PM - 3:00 PM





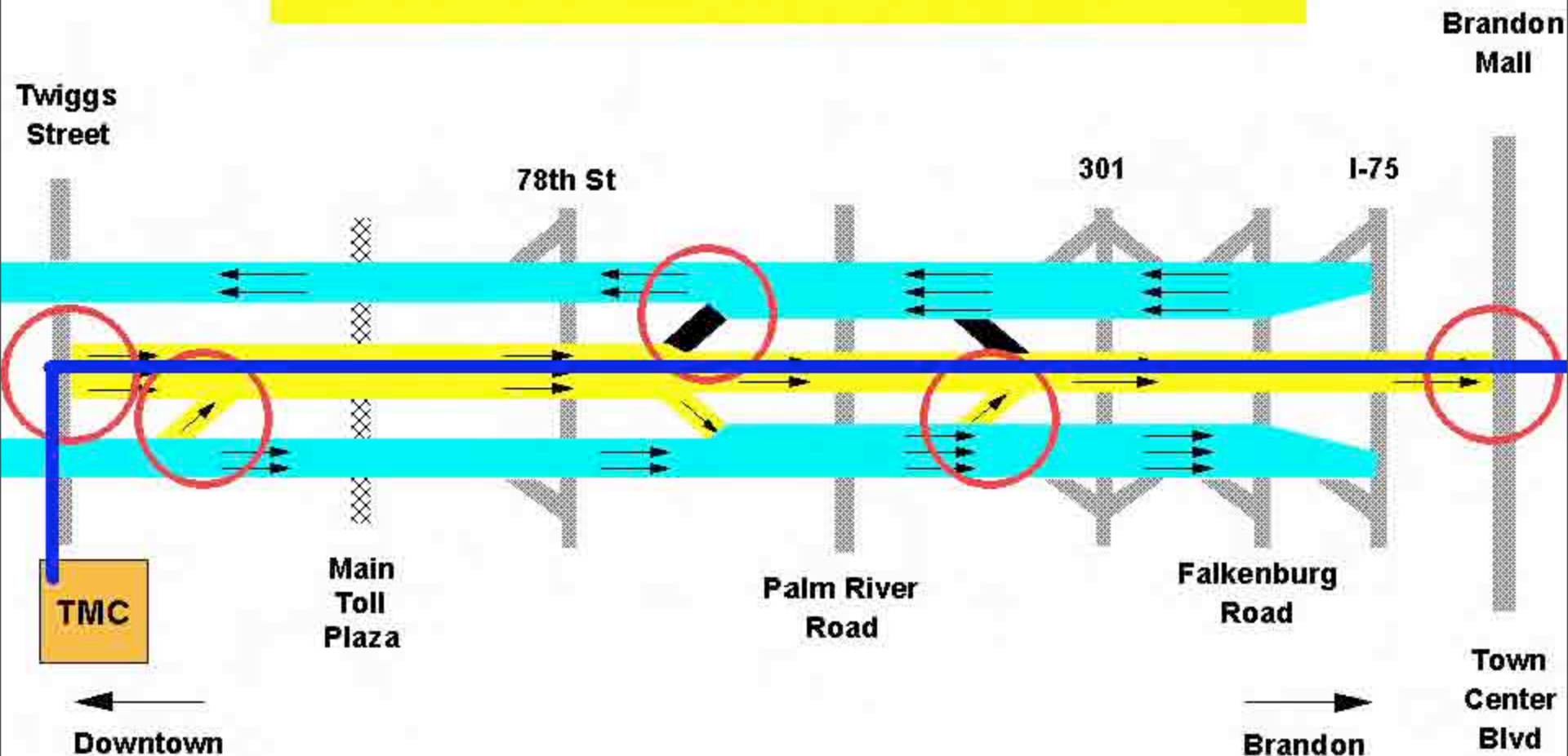


# Open Downtown to Brandon 3:00 PM





# ITS Fiber Optic Backbone & Gateset Master Controllers







## SYSTEM COMMANDS

Open Eastbound Lanes

Open Westbound Lanes

78th Street East & West

Close To All Traffic

Single Gate Set Event

## SYSTEM STATUS

Current Traffic Flow Direction

78th STREET EAST & WEST

Current Roadway Safety Status

Free Flowing and SAFE

Current Time

13:22:41

Safe Reversal Time

7:00

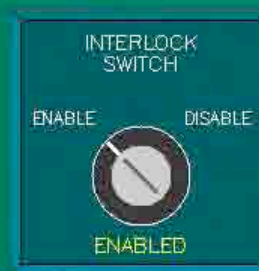
Current Supervisor

RCOLLINS

## TAMPA-HILLSBOROUGH REVERSIBLE LANES



# BRANDON WB GATE SET



CONTROL DELAY TIME   
 GATE FAIL TIME   
 GATE SET DIRECTION   
 ROADWAY DIRECTION   
 PLC RUN STATUS

VMS COM STATUS



# BRANDON WB GATE SET

INTERLOCK  
STATUS



INACTIVE

REMOTE/LOCAL  
SWITCH STATUS



REMOTE

INTERLOCK  
SWITCH

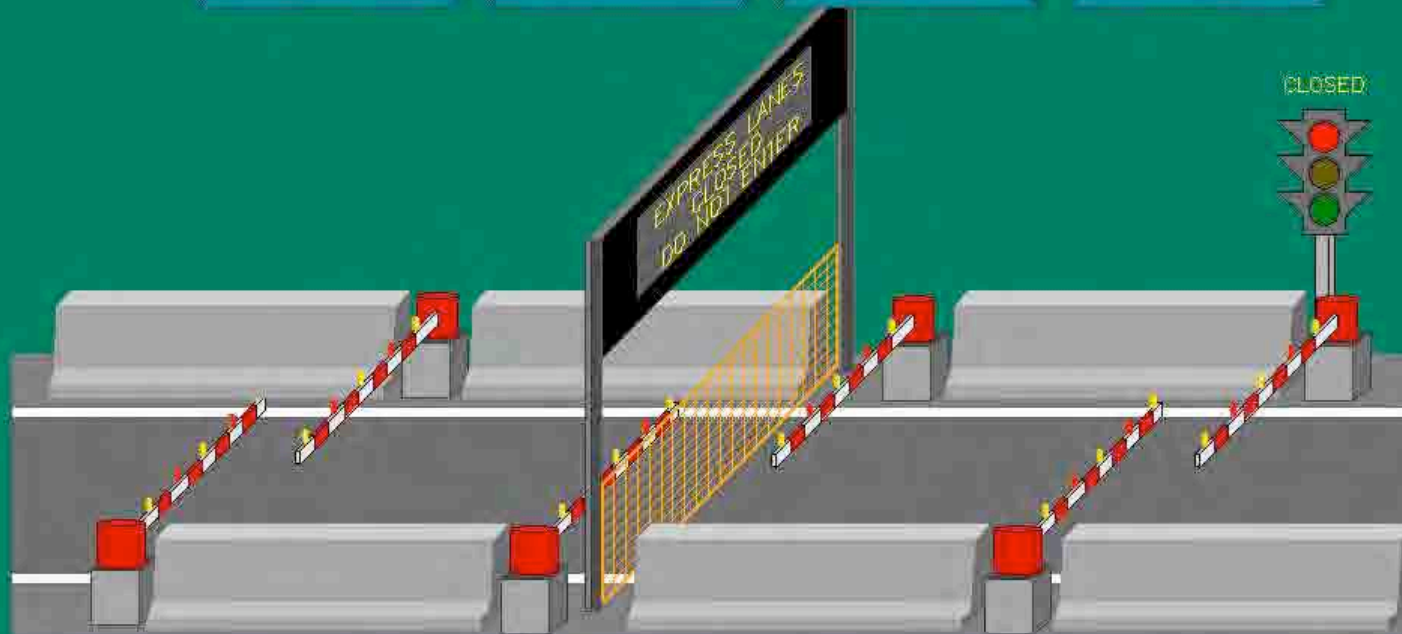


ENABLED

VMS  
STATUS



CLOSED



CONTROL DELAY TIME   
 GATE FAIL TIME   
 GATE SET DIRECTION   
 ROADWAY DIRECTION   
 PLC RUN STATUS

VMS COM STATUS

- 
- SYS F5
- 
- CCTV
- 
- VMS
- 
- TDC
- 
- MESSAGE
- 
- IRM
- 
- GATE
- 
- RWS
- 
- TAF
- 
- HELP
- 
- CONN
- 54 2
- 3 1
- ALARM
- VIEW