

Lee Roy Selmon Crosstown Expressway

Reversible Elevated Express Lanes

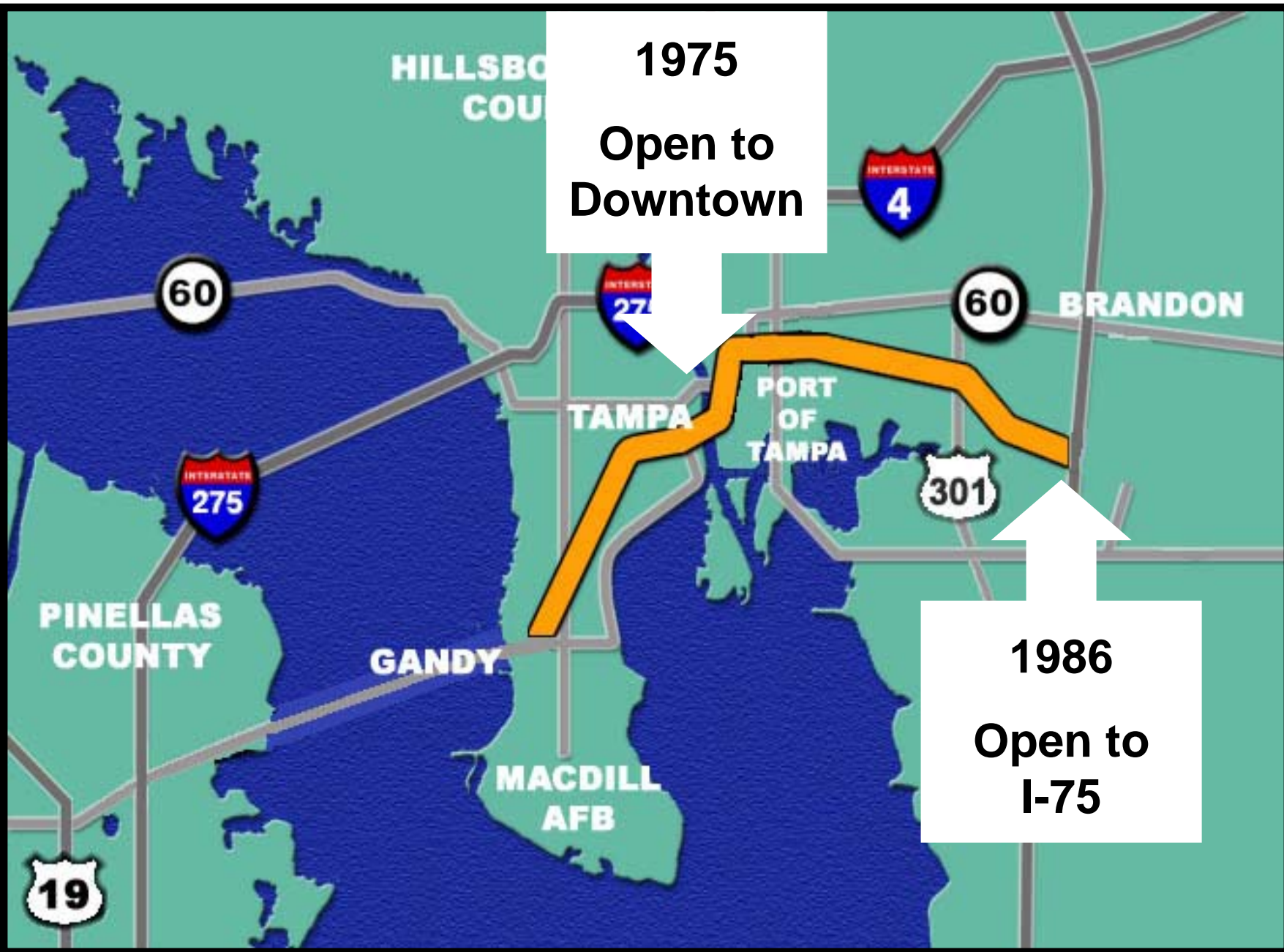
A Solution for Urban Traffic Congestion

Martin Stone, Ph.D., AICP
Director of Planning
Tampa-Hillsborough Expressway Authority
Tampa, Florida



1975
Open to
Downtown





1975
Open to
Downtown

1986
Open to
I-75





1987 Tampa Interstate Study (EIS) Masterplan

I-275 & I-4: Add 1 Lane

Crosstown: Add 1 lane

and connect to I-4

1988 – 1995

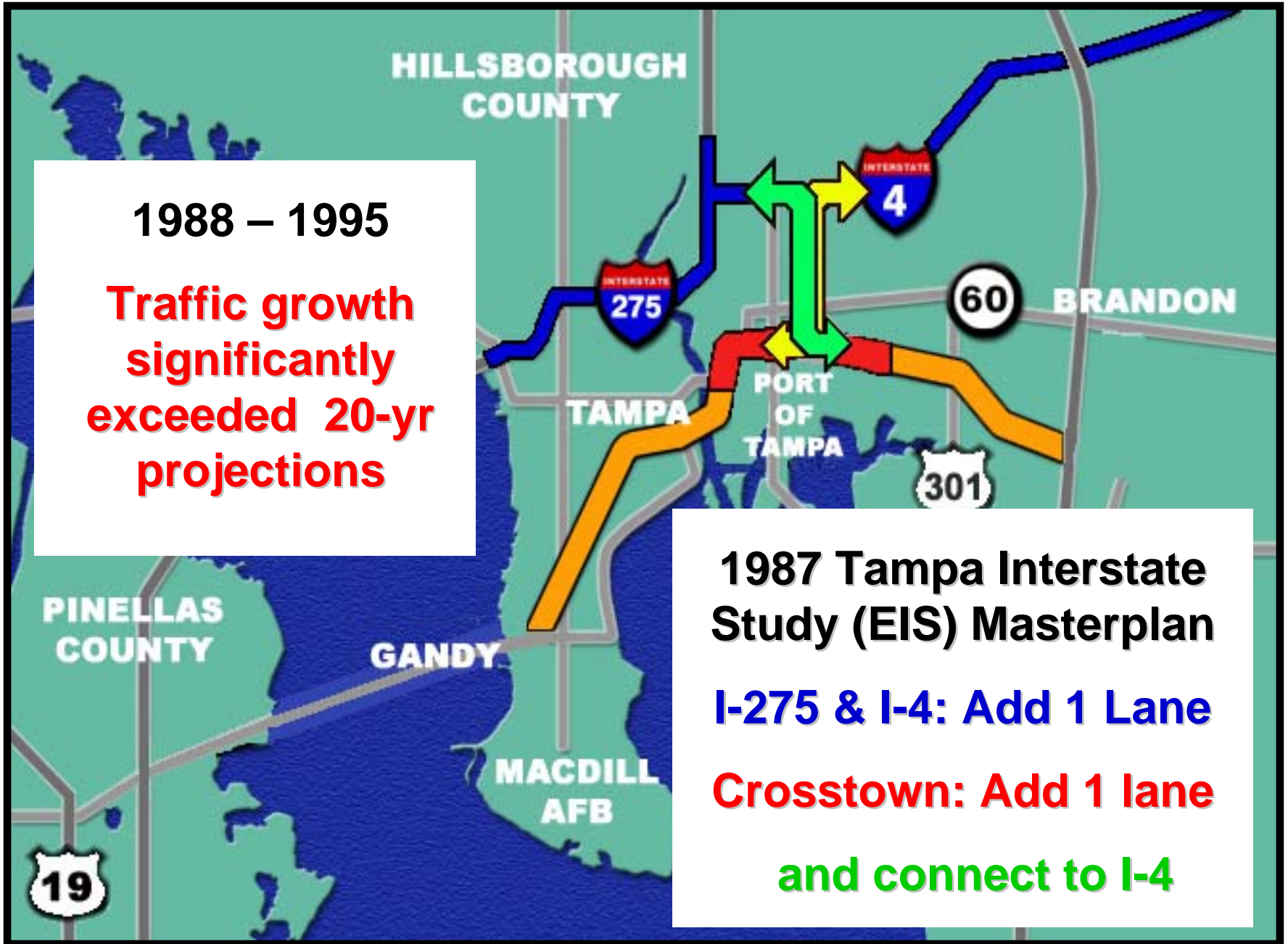
Traffic growth significantly exceeded 20-yr projections

1987 Tampa Interstate Study (EIS) Masterplan

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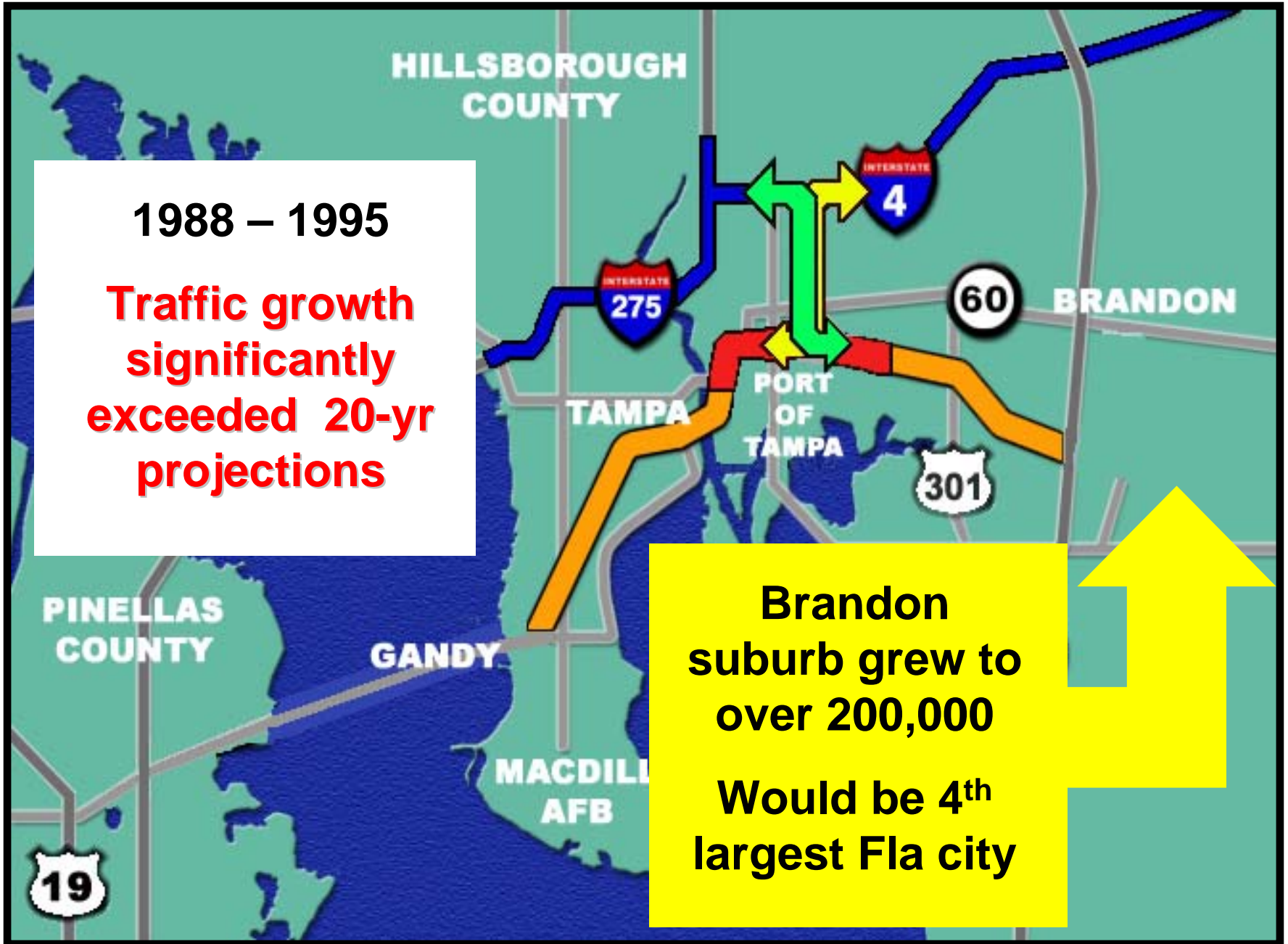


1988 – 1995

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

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

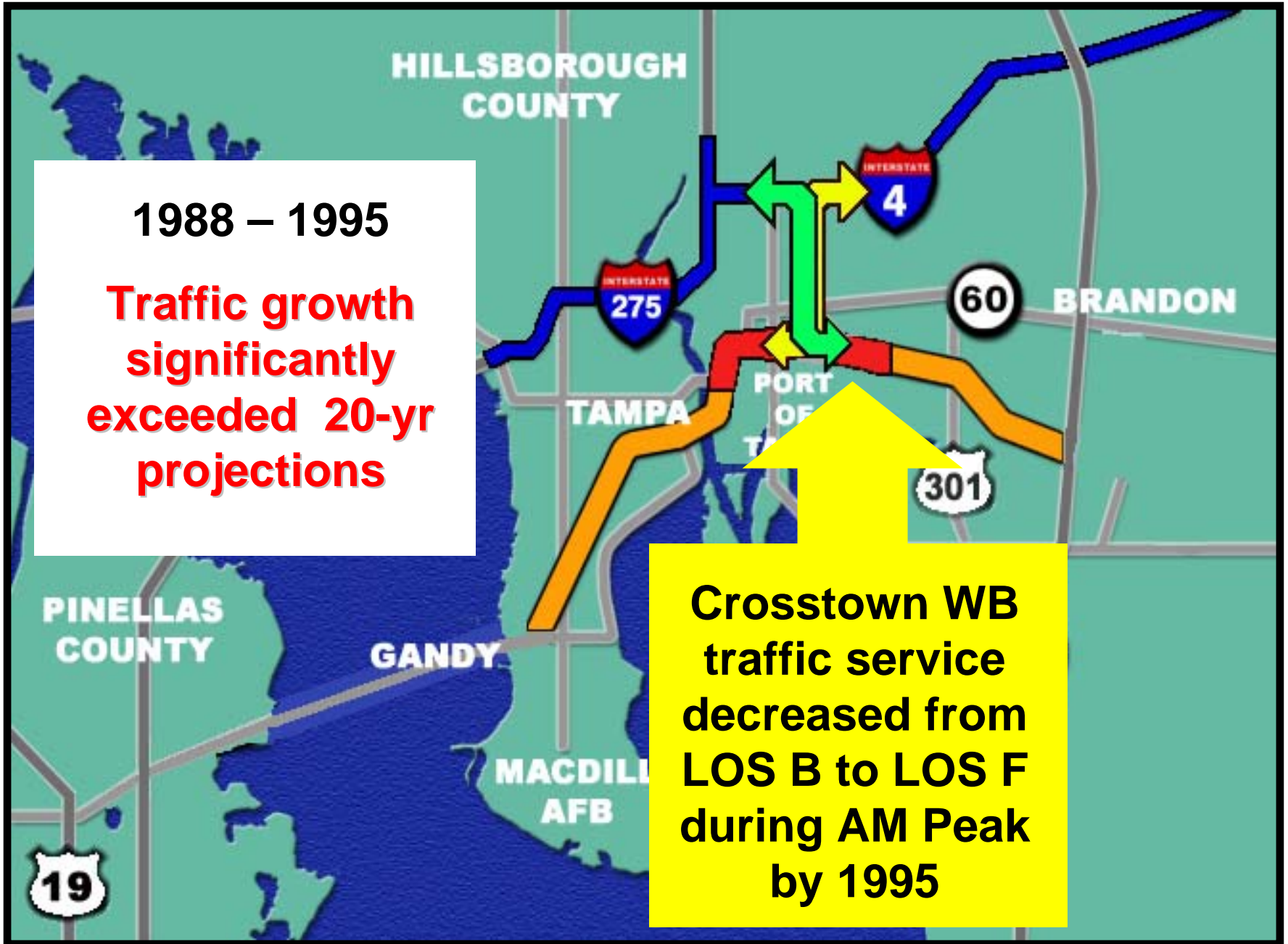
**Would be 4th
largest Fla city**



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

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

HILLSBOROUGH
COUNTY

INTERSTATE
275

INTERSTATE
4

60

BRANDON

TAMPA

PORT OF
TAMPA

301

MACDILL
AFB

19

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

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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

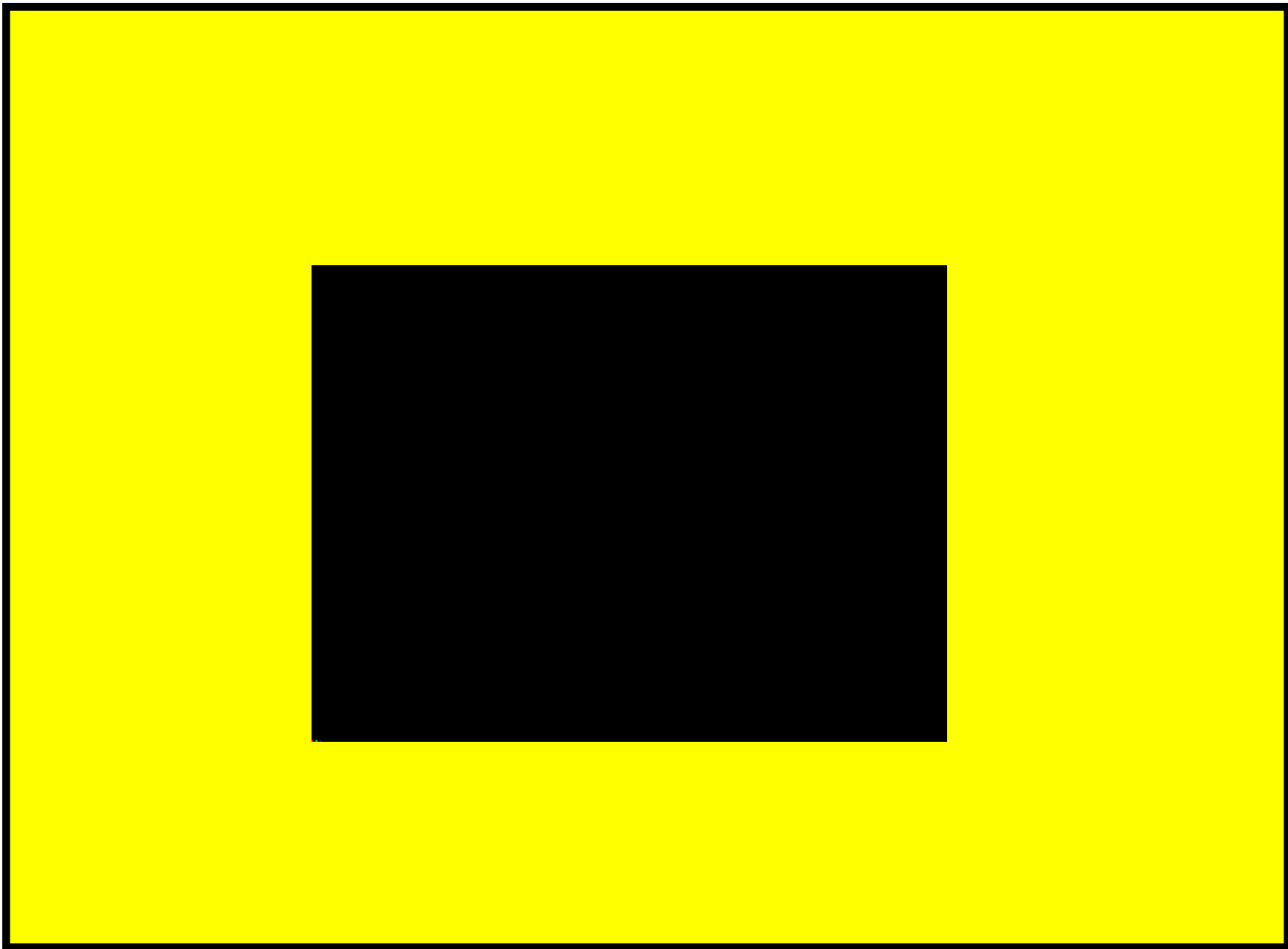
- 1. Scrapped original expansion to 6 lanes**

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**

I-4/Crosstown Solution

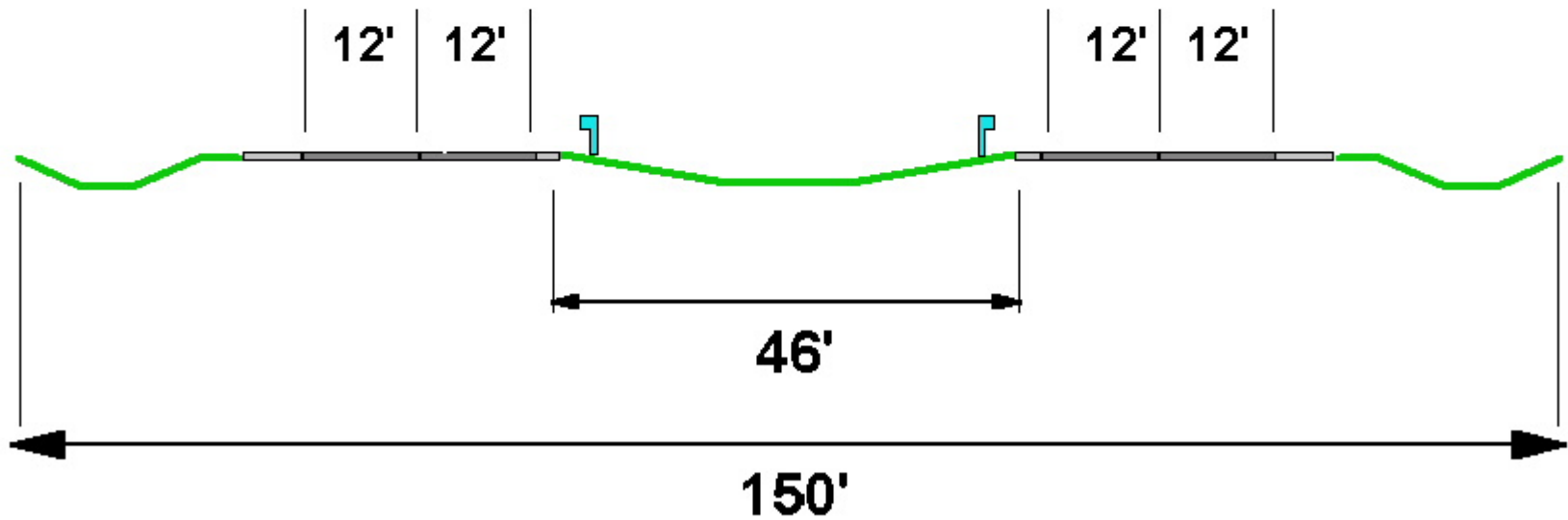
- 1. Scrapped original expansion to 6 lanes**
- 2. Developed 3 reversible express lanes**
 - Divert at least 50% of commuter traffic from existing lanes to express lanes**
 - Use excess capacity on existing lanes to handle traffic from I-4 connection**
- 3. Build most of project as a concrete segmental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





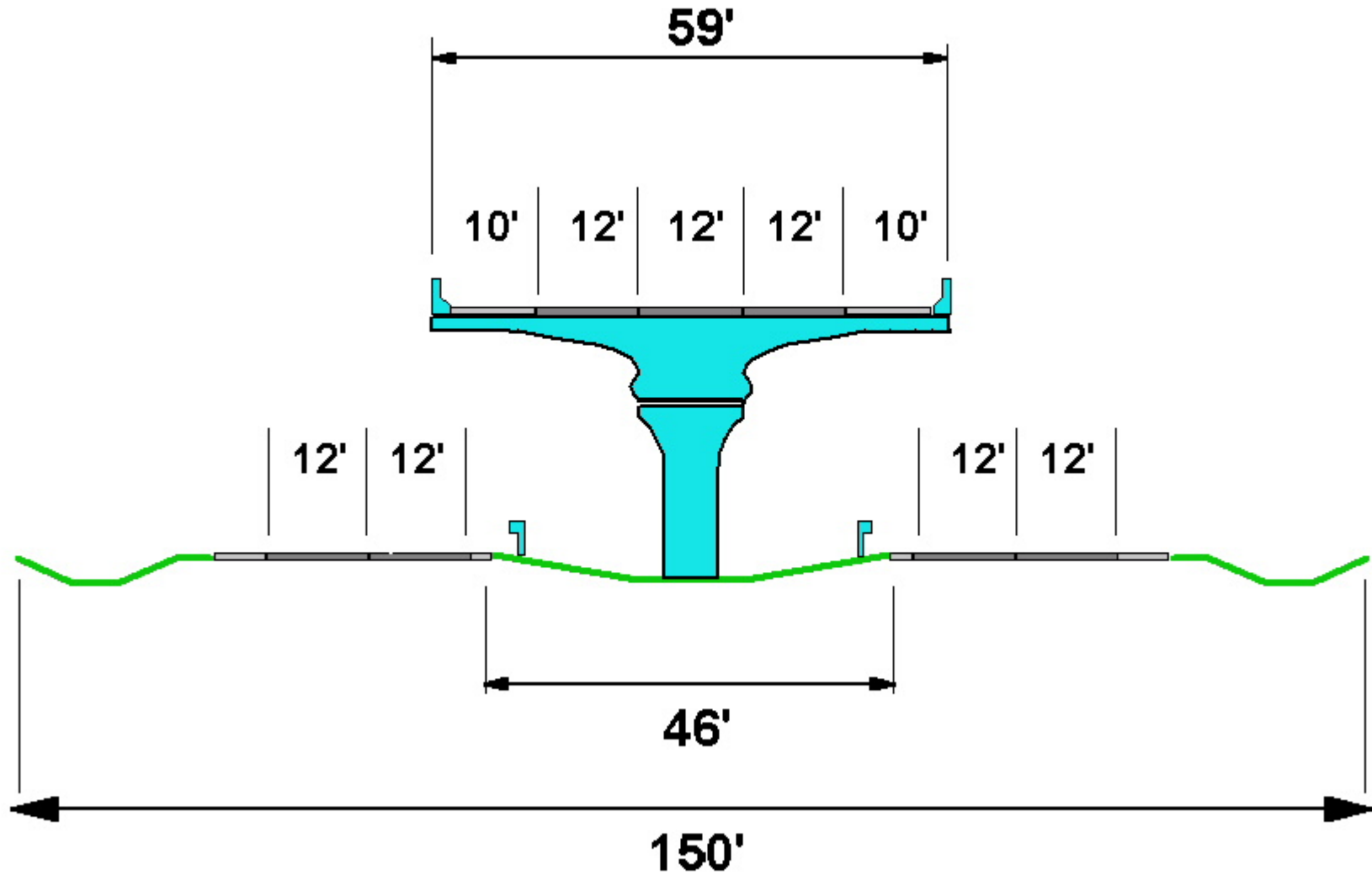
Selmon Crosstown Expressway Typical Section

Existing 4 Lanes



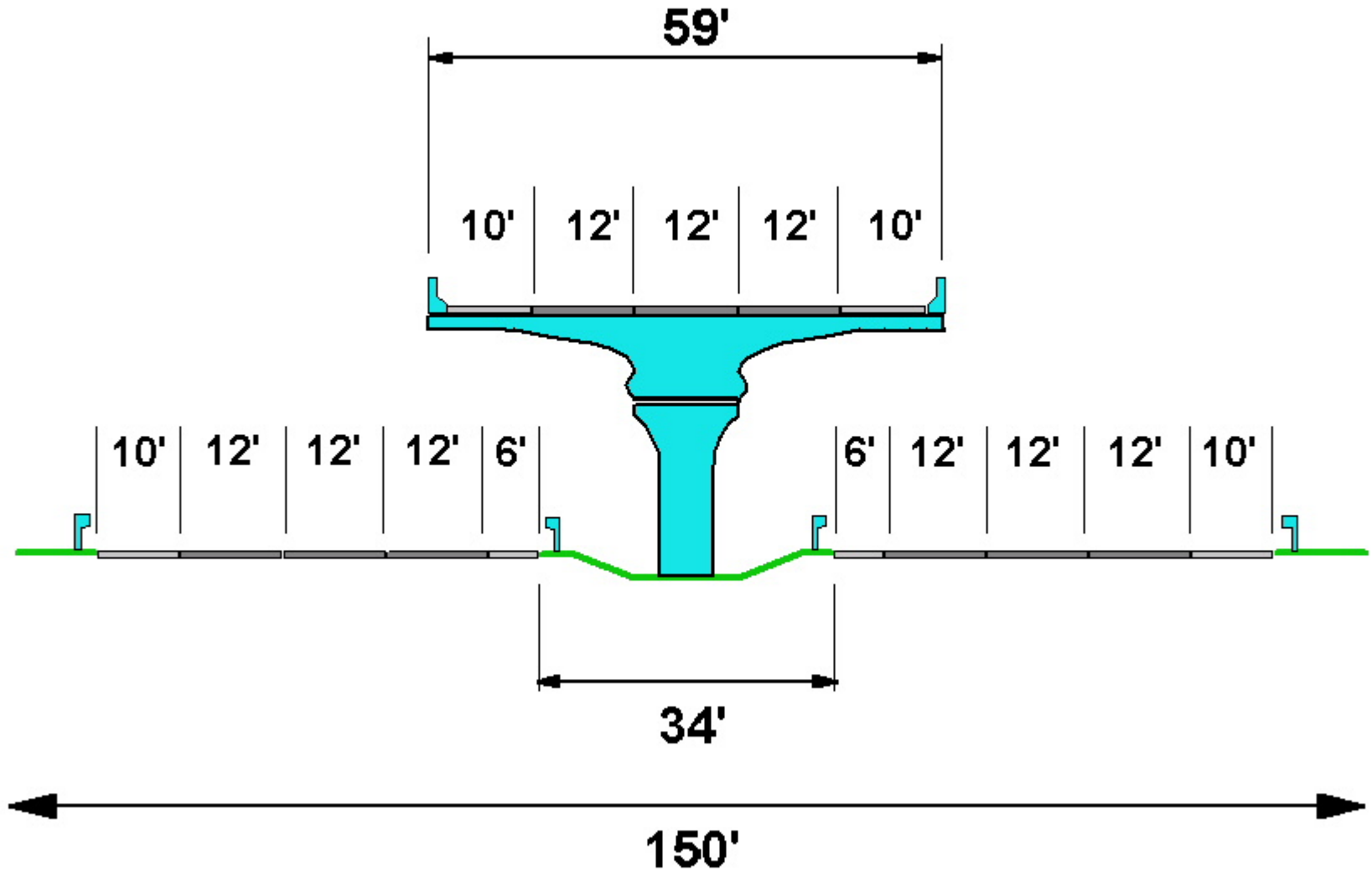
Selmon Crosstown Expressway Typical Section

Existing 4 Lanes with 3 Express Lanes



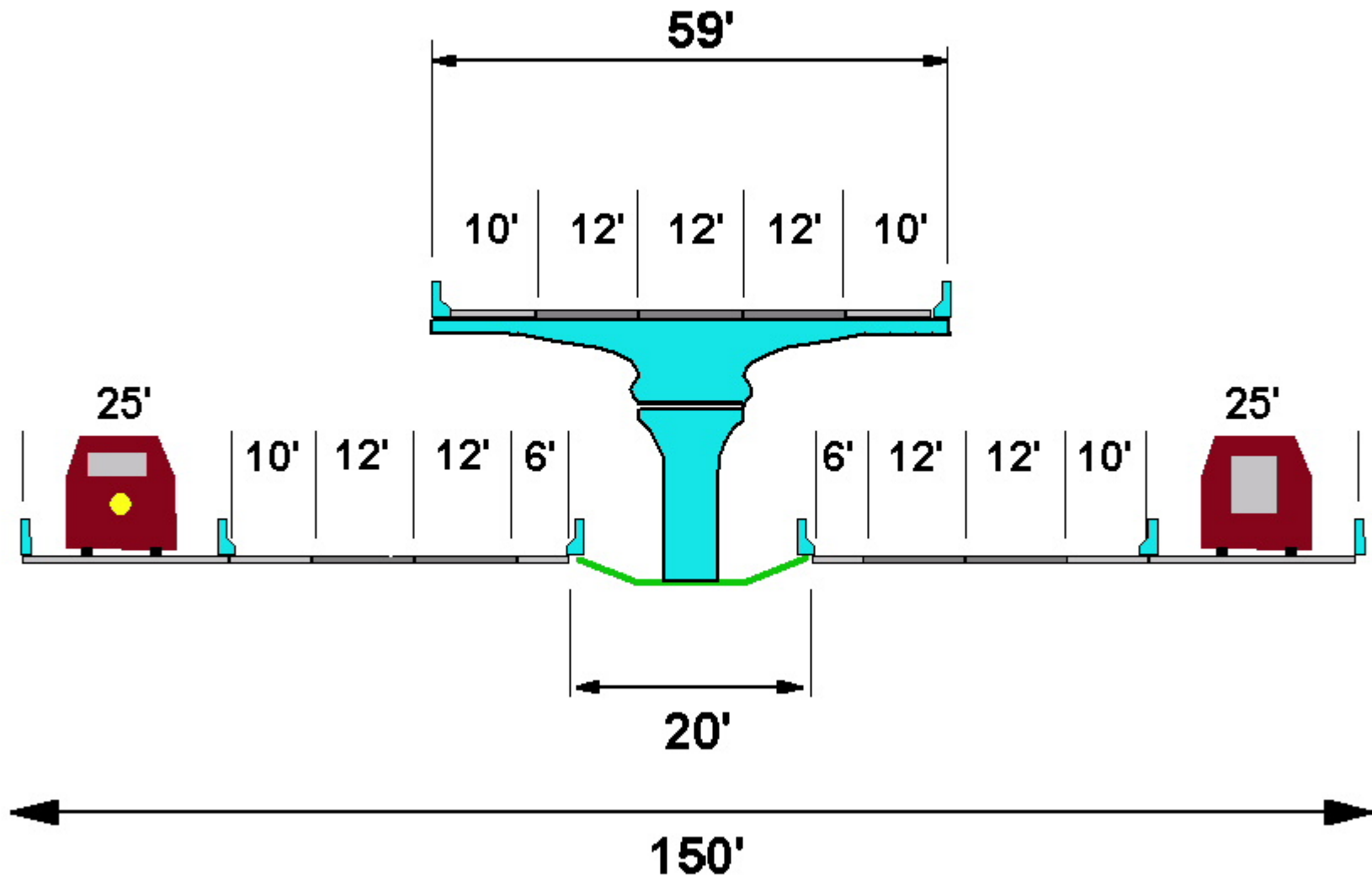
Selmon Crosstown Expressway Typical Section

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
- CM/CEI = \$20M
- Contingency & Overage = \$20M

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

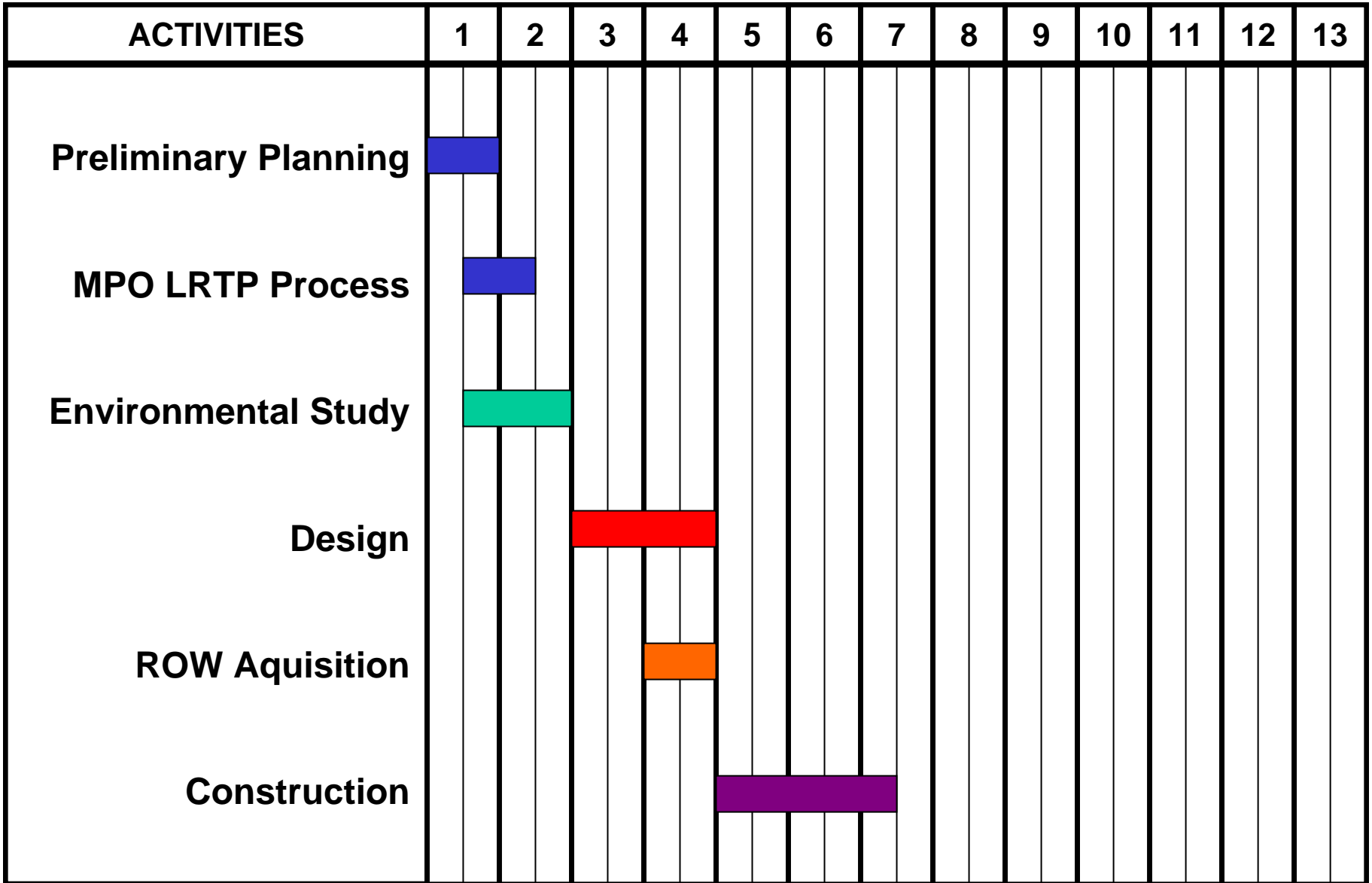
Transportation Benefits

- Total Traffic = 115,000 ADT
- East End Traffic = 75,000 ADT
- LOS F in AM & PM Peak
- AM Peak Trip Time = 20-40 Minutes

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

Elevated Lanes Planning & Production Schedule

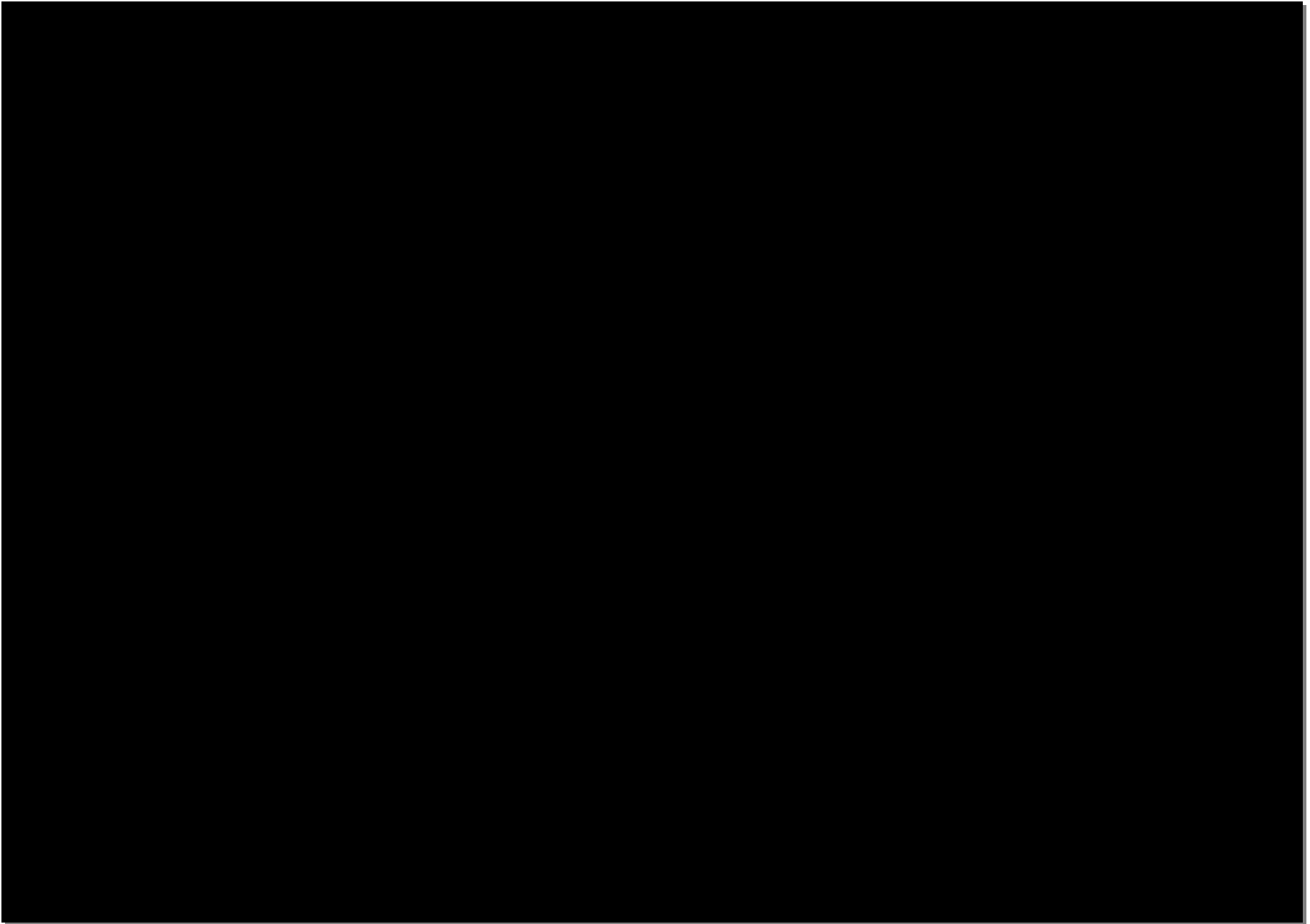


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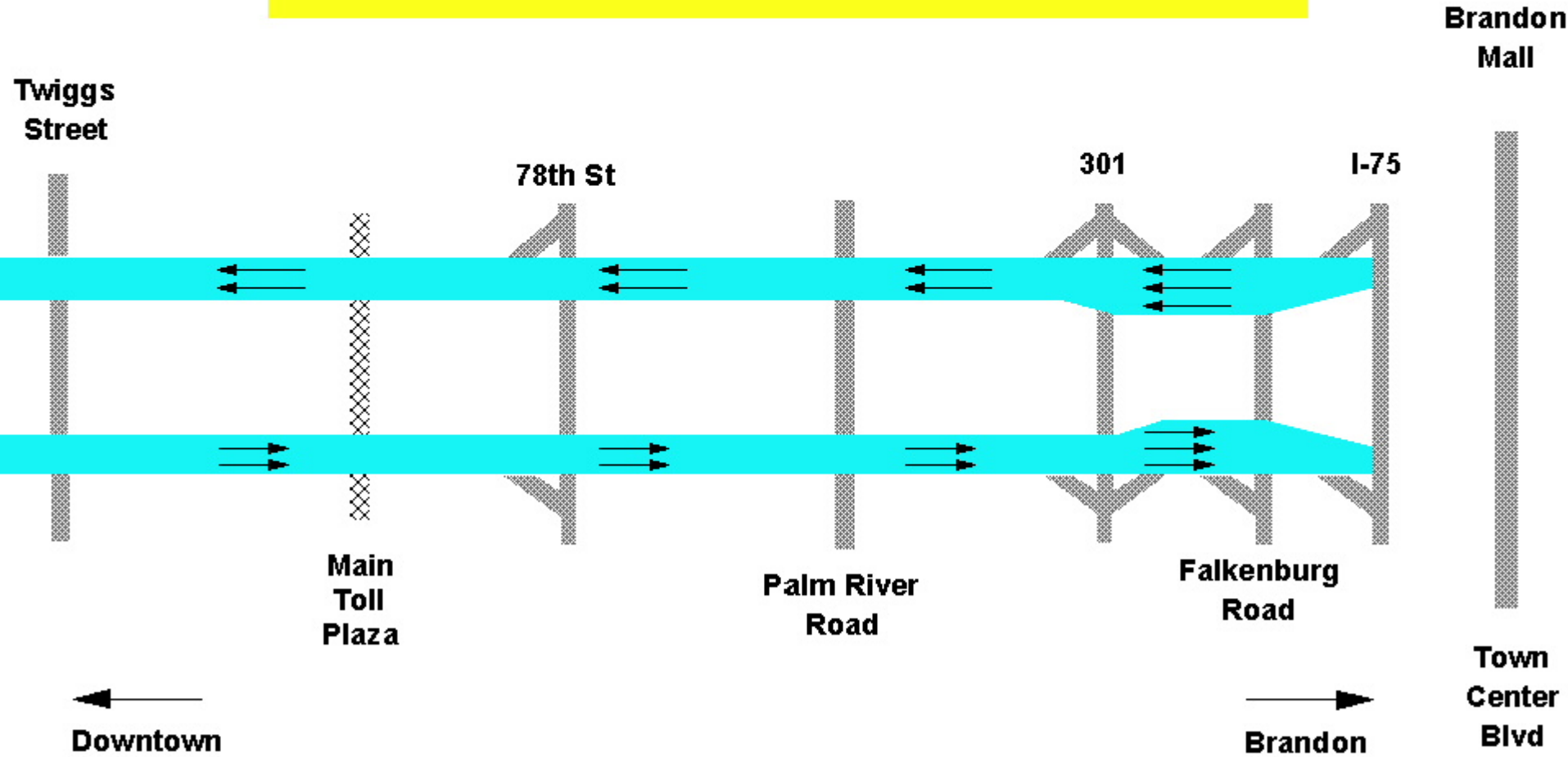


Intelligent Transportation System

Reversible Express Lane
Operations

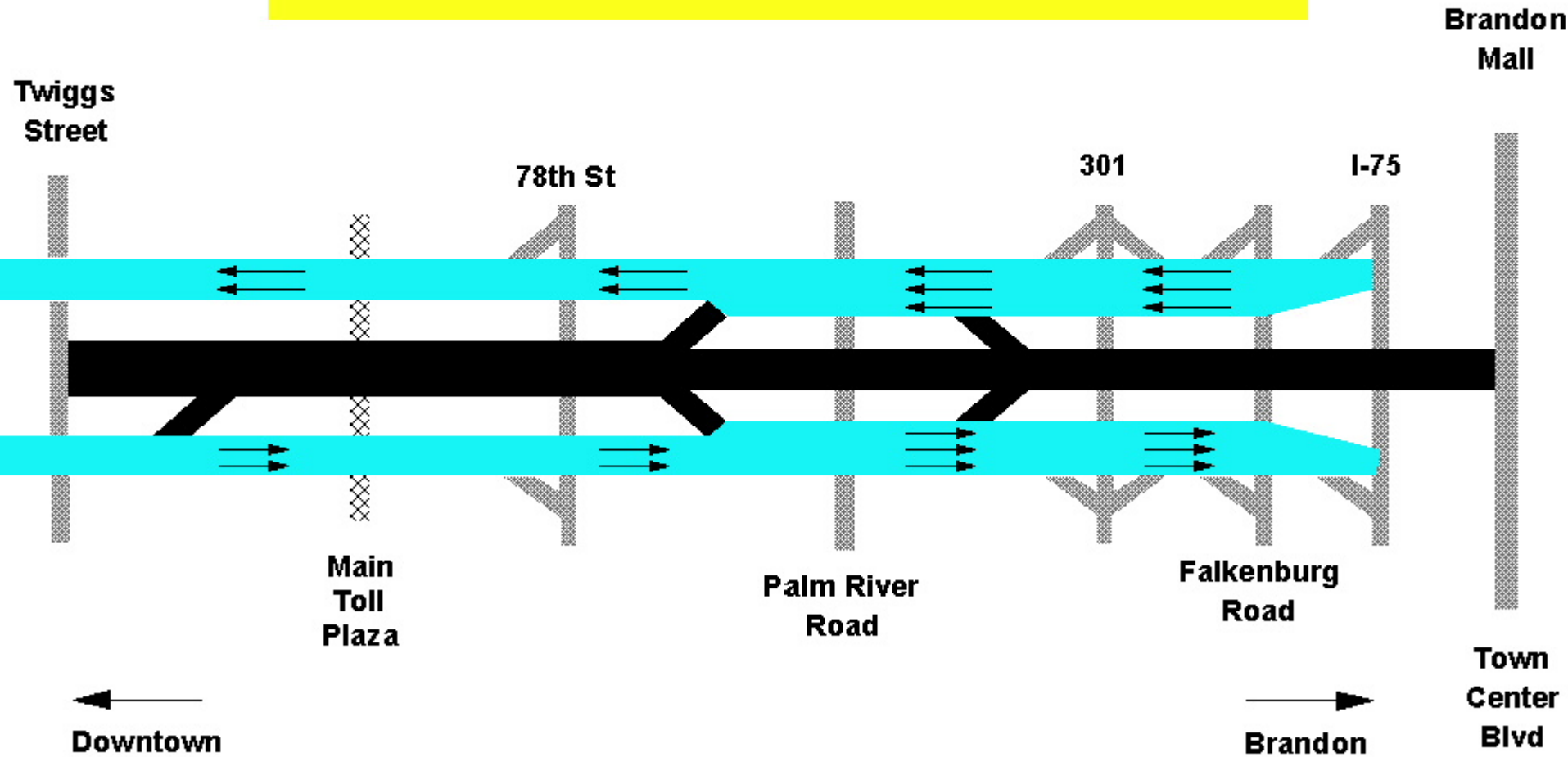


Existing General Use Lanes





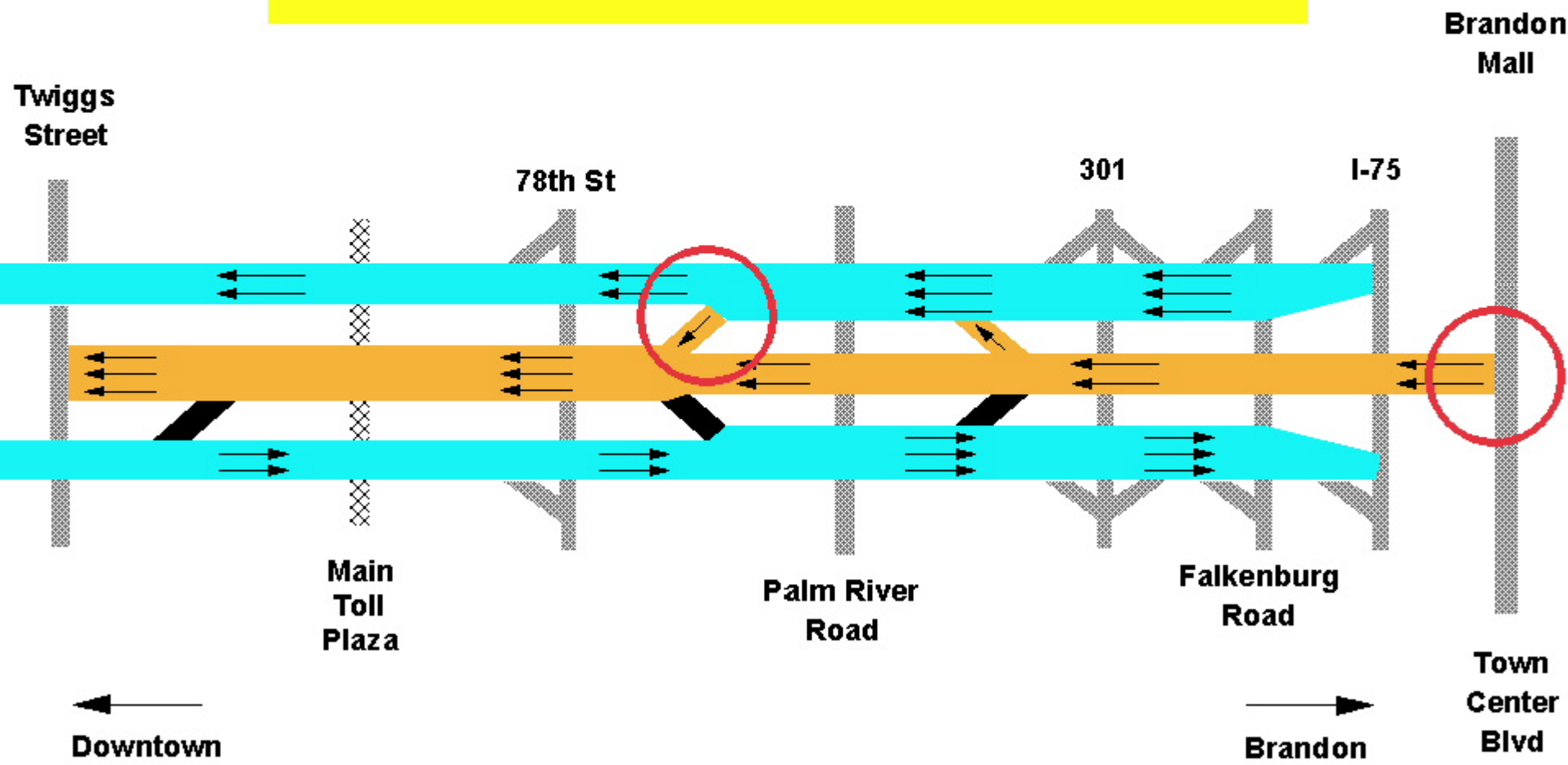
Reversible Express Lanes





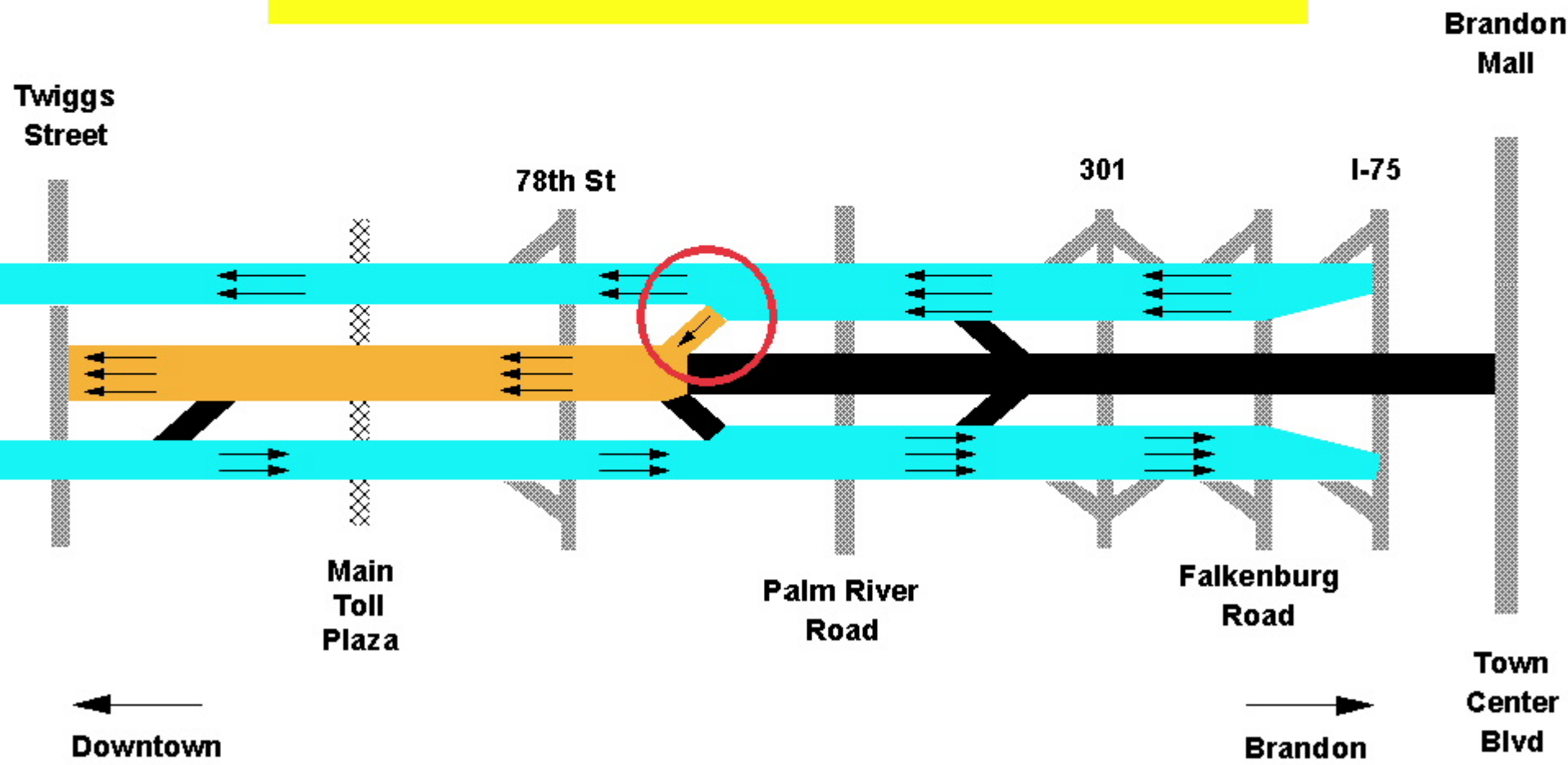
AM OPERATION

Open WB Ramps 6:00 - 10:00 AM



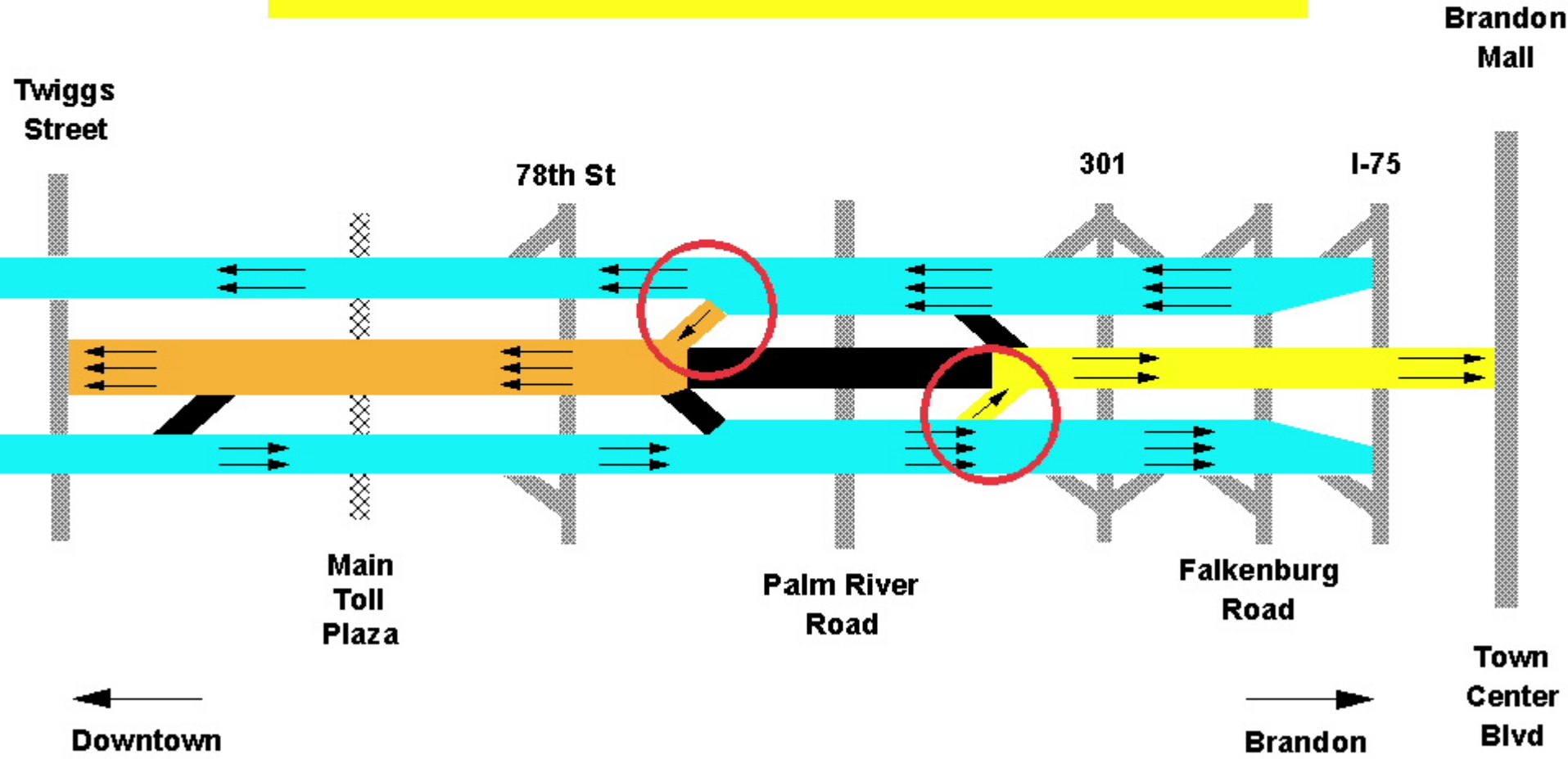


Close Brandon Entry for Direction Change 10:00 - 10:30 AM



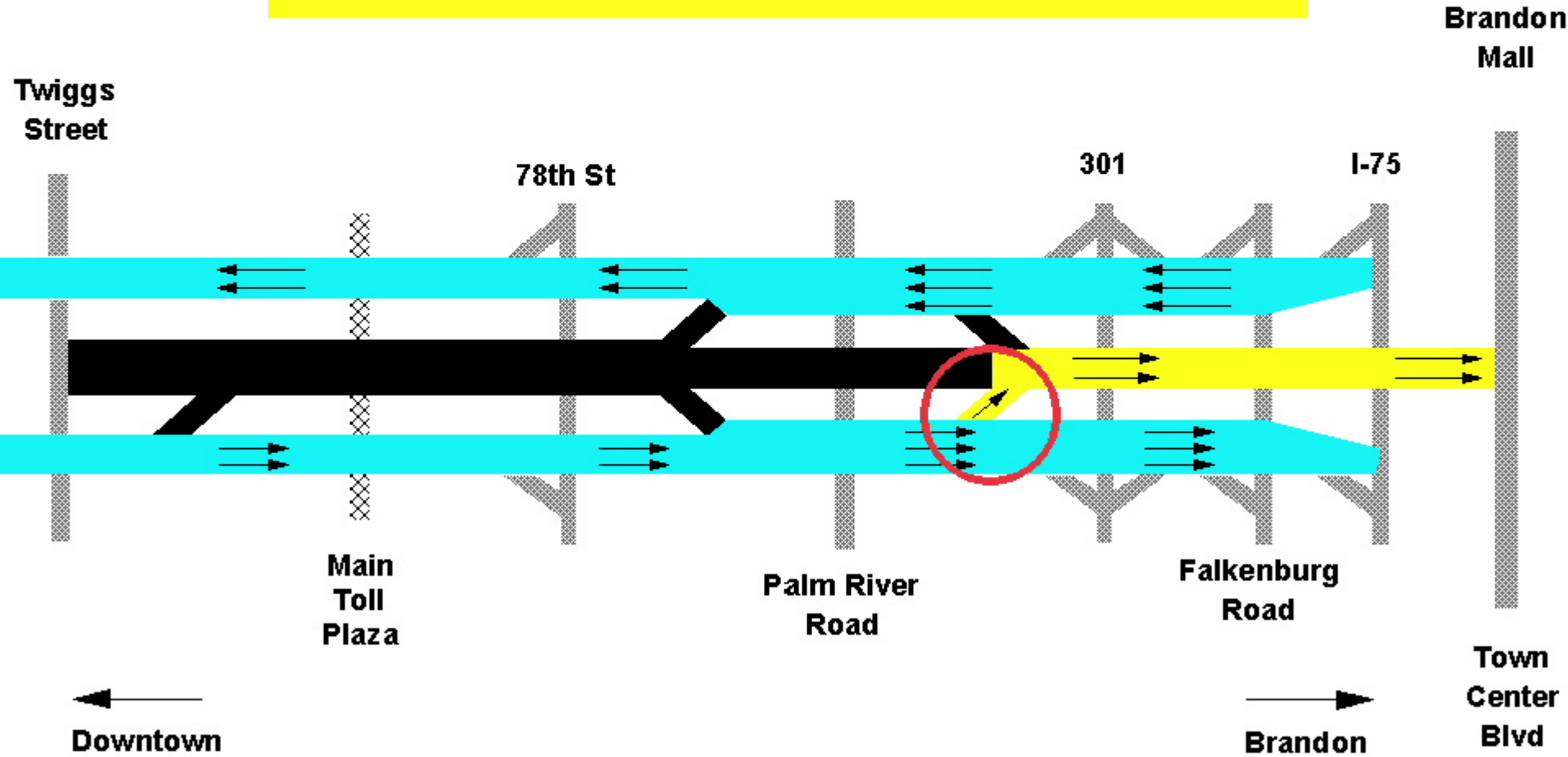


Open Brandon Eastbound Ramp 10:30 AM



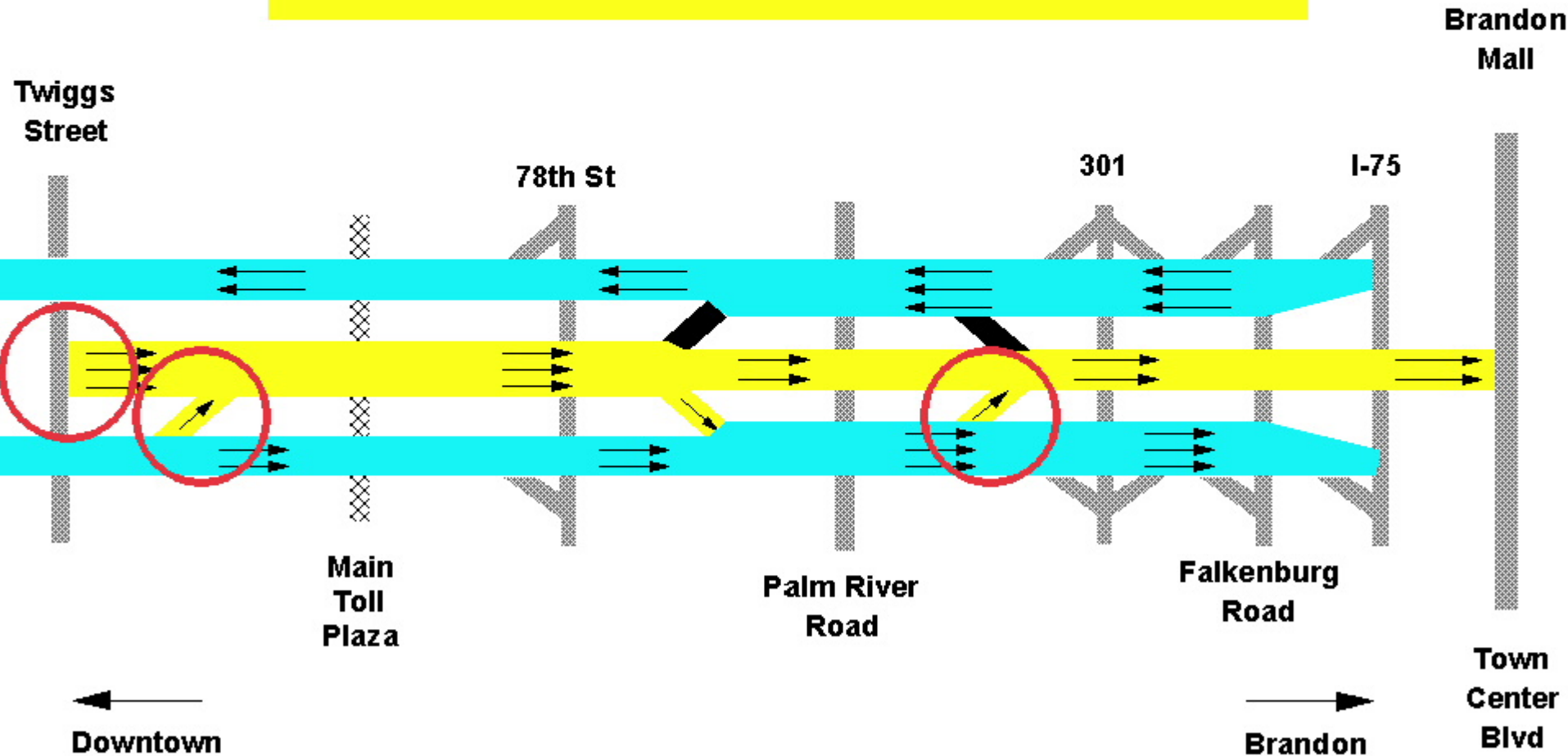


Close Downtown for Direction Change 2:30 PM - 3:00 PM



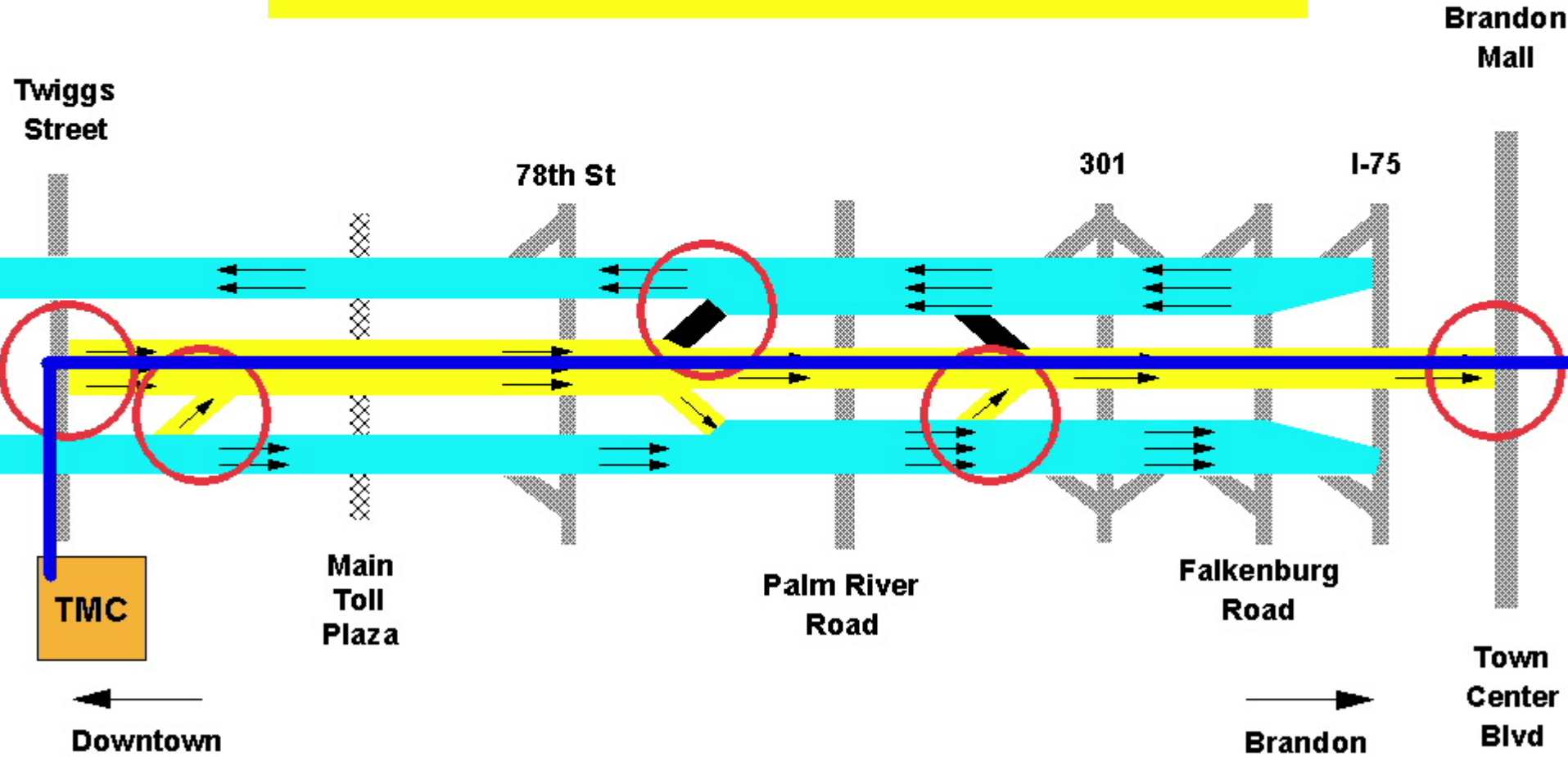


Open Downtown to Brandon 3:00 PM





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

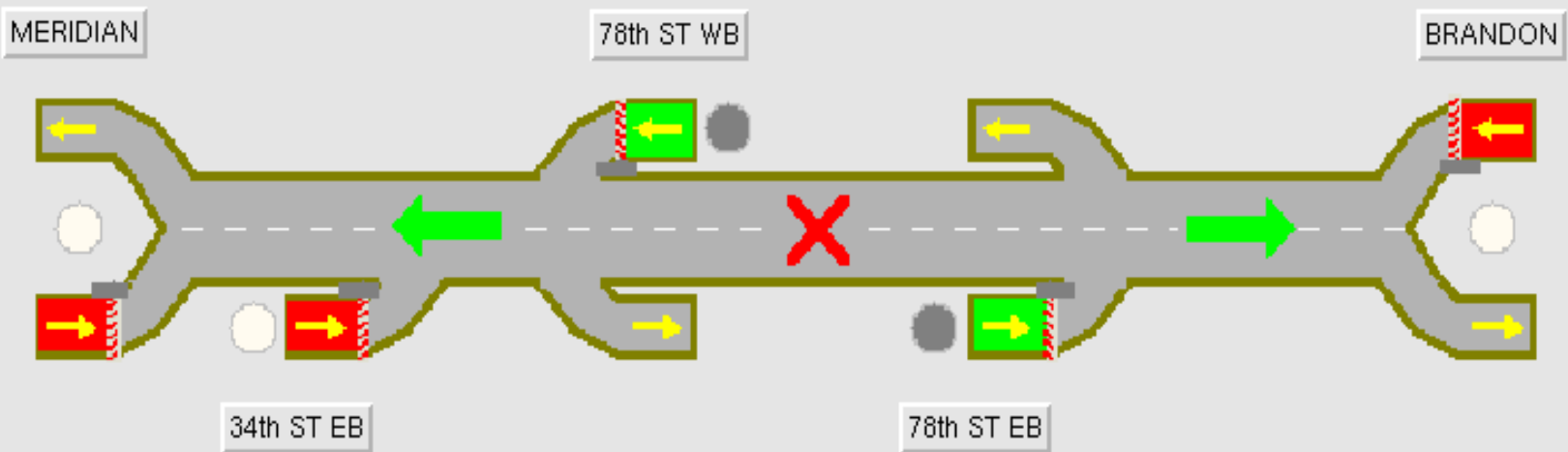
Safe Reversal Time

7:00

Current Supervisor

RCOLLINS

TAMPA-HILLSBOROUGH REVERSIBLE LANES



BRANDON WB GATE SET

INTERLOCK STATUS

INACTIVE

REMOTE / LOCAL SWITCH STATUS

LOCAL AUTO

REMOTE LOCAL MANUAL

REMOTE

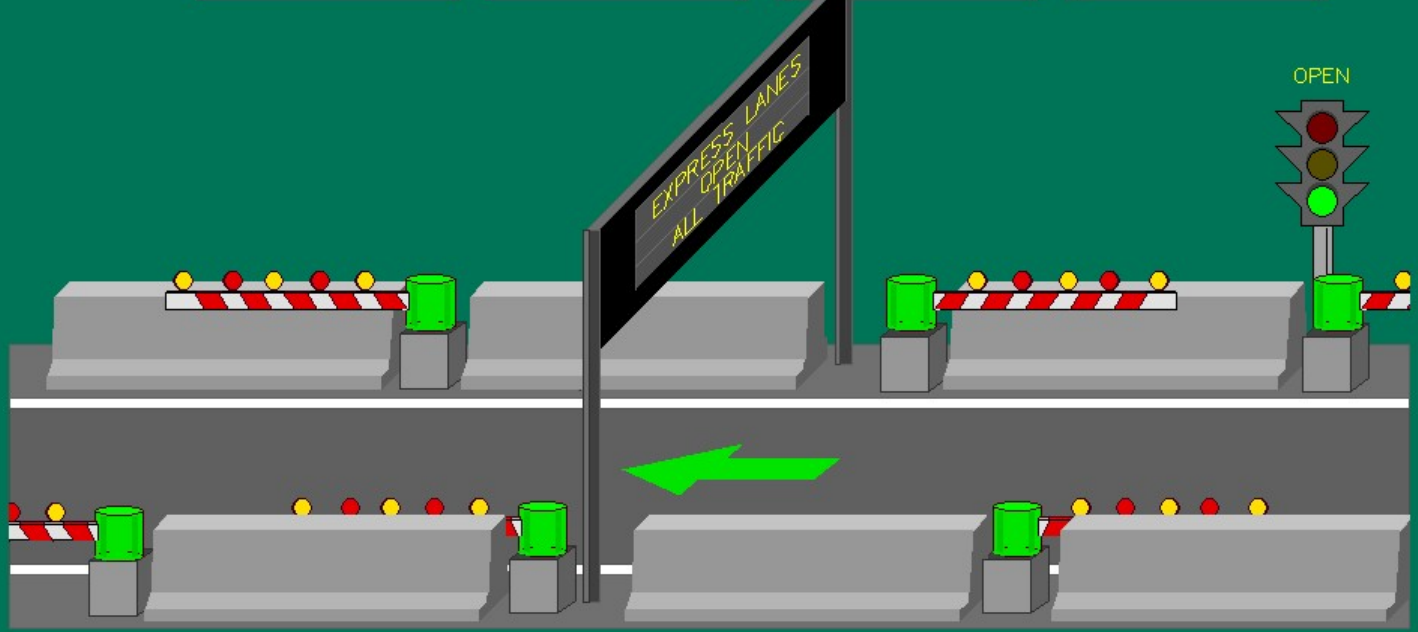
INTERLOCK SWITCH

ENABLE DISABLE

ENABLED

VMS STATUS

OPEN



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

VMS COM STATUS NORMAL

-
- SYS F5
-
- CCTV
-
- VMS
-
- TDC
-
- MESSAGE
-
- IRM
-
- GATE
-
- RWIS
-
- HAR
-
- HELP
-
- COMM
-
- ALARM
- VIEW

BRANDON WB GATE SET

INTERLOCK STATUS

INACTIVE

REMOTE/LOCAL SWITCH STATUS

LOCAL AUTO

REMOTE LOCAL MANUAL

REMOTE

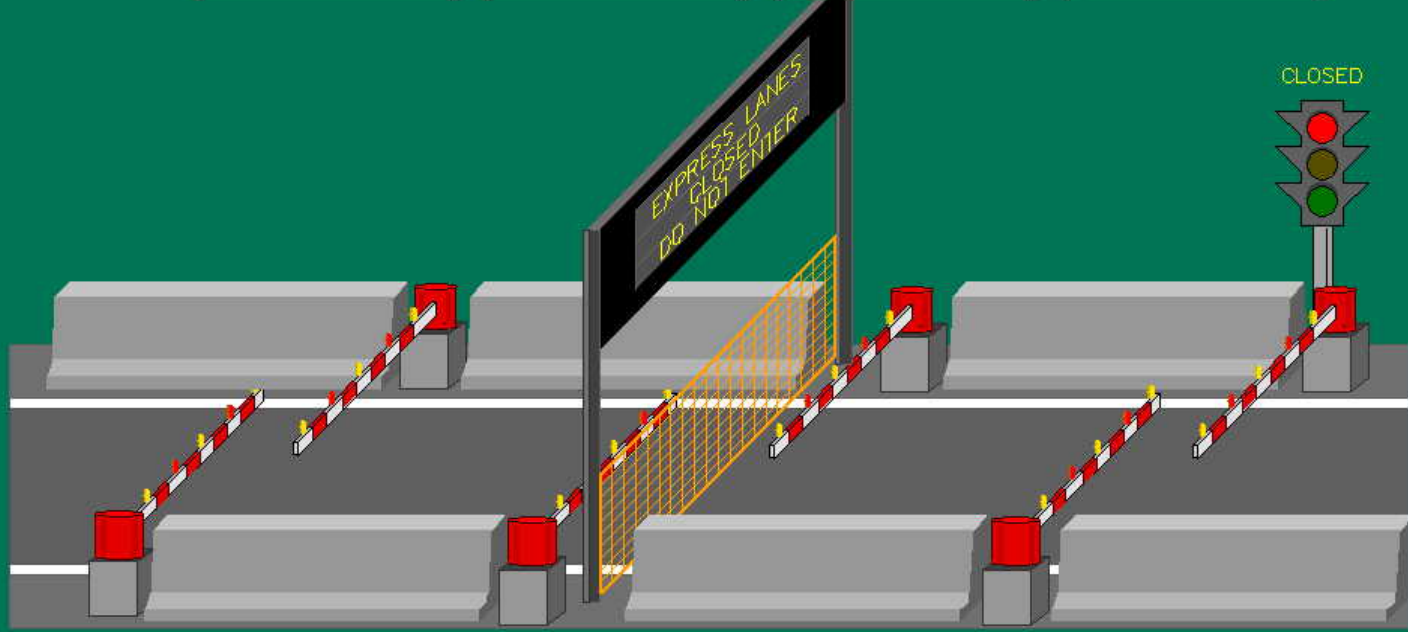
INTERLOCK SWITCH

ENABLE DISABLE

ENABLED

VMS STATUS

CLOSED



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

VMS COM STATUS

-
- SYS F5
-
- CCTV
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