Metro-Atlanta Managed Lanes System Plan

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Georgia Department of Transportation

AGENDA

- Status of Metro-Atlanta Managed Lanes System Plan
- Decisions
- Next Steps

Overview of Toll Roads & Managed Lanes

Toll Roads

- *All* lanes tolled
- Toll purpose is to help finance the road (in addition to traditional funds)
- Toll is typically fixed (not managed/fluctuating based on traffic demands)

Overview of Toll Roads and Managed Lanes

Managed Lanes

- Adjacent to existing General Purpose (GP) lanes
- Toll purpose is to regulate demand/travel speeds
- Secondary toll benefit, assist with construction/operating costs
  - Toll revenues will not cover construction costs, *unless* convert existing lanes (minimal costs)
- Provides reliable travel options in peak periods

Managed Lane System Plan Purpose

SOV lanes can no longer address the traffic growth and demands placed on our system

Managed Lanes will more efficiently operate the system, offering reliable trip times & provide travel options

Ensure various related activities are coordinated (system-wide approach):

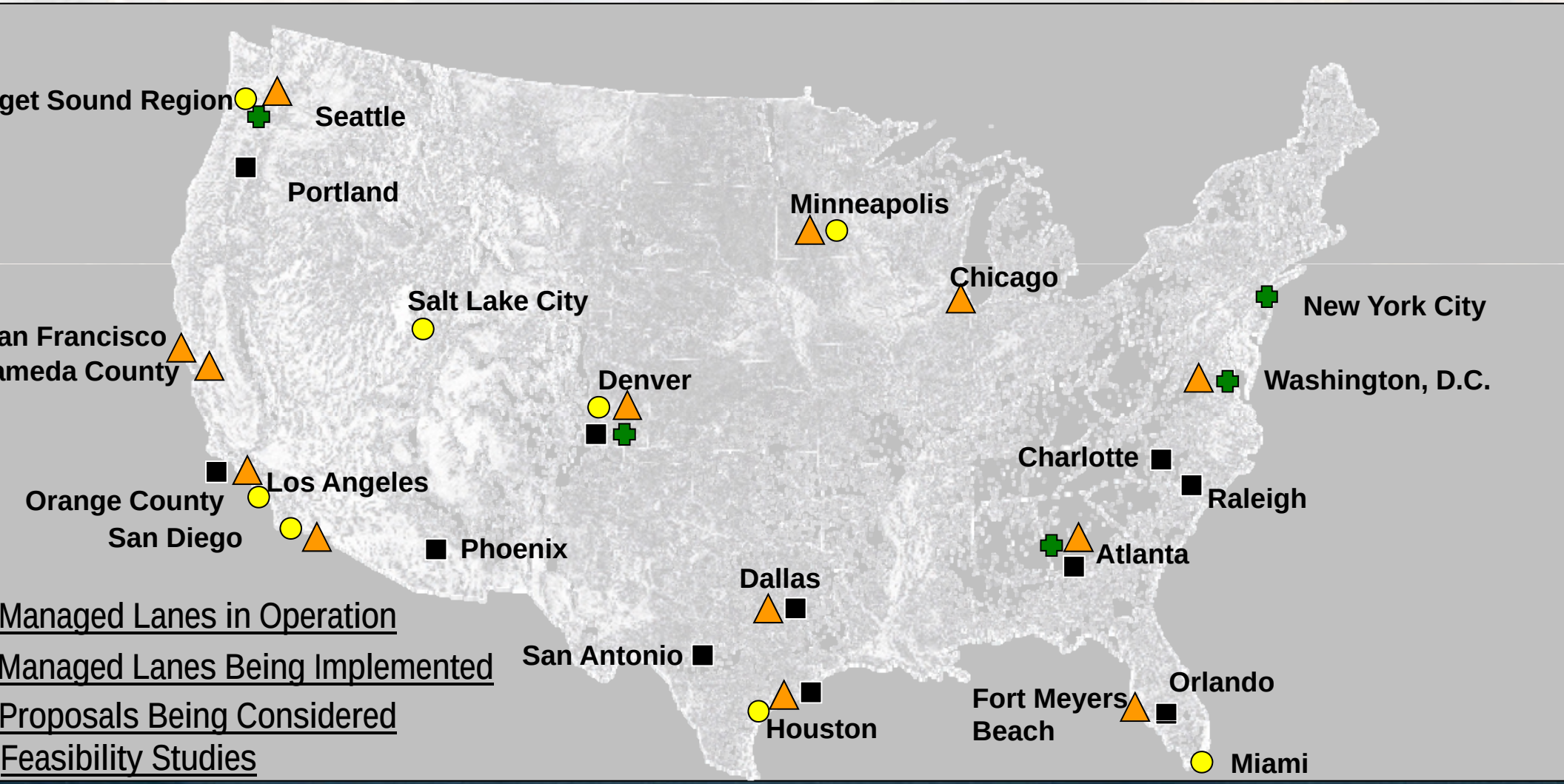
- HOV Projects under design
- Various typical sections under consideration
- PPP Projects under development/consideration
  - I-75 NW Corridor
  - SR 400
  - I-20 East
  - I-285 West

Managed Lane System Plan Purpose

Coordinating with all transportation planning partners

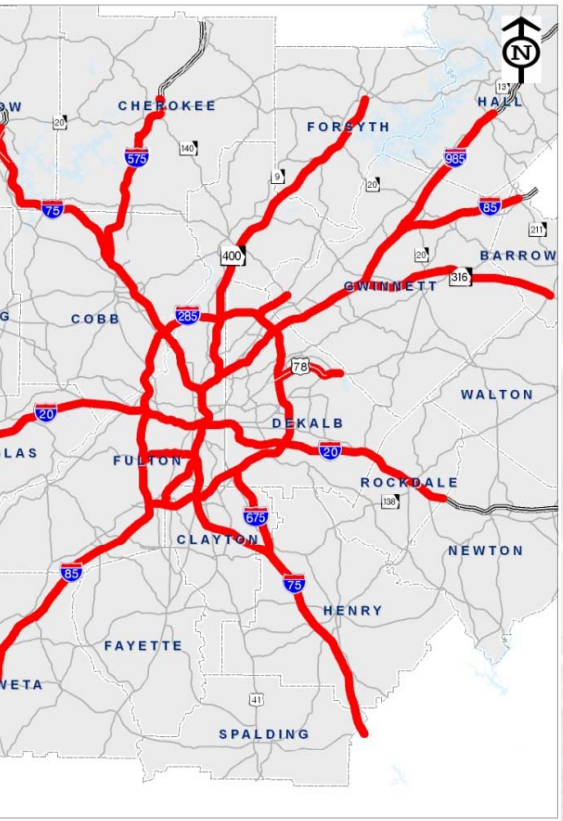
- External:
  - ARC
  - SRTA
  - GRTA
  - Transit Planning Board
  - Chamber of Commerce
  - FHWA
  - Governor's Office (invited)
- Internal:
  - Innovative Finance
  - Innovative Project Delive
  - Urban Design
  - Traffic Operations
  - Policy Analysis Bureau

US Managed Lane Activity



GDOT's Managed Lane System Plan (*Criteria & Results*)

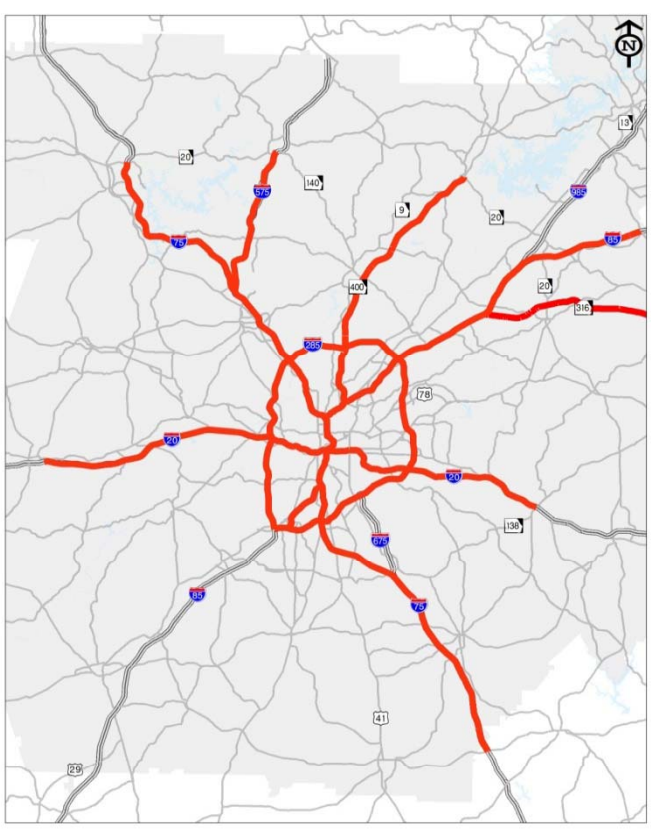
GDOT - HOV System Plan (2002)



Screened Criteria

- Functional Classification
- Presence of Existing Managed Lanes
- Trip Lengths: > 10 mi.
- % of vehicles with 2+ occupants
- **Total Vehicles**
- Total Trucks
- Total HOVs
- **Volume to Capacity (V/C) Ratio**
- Duration of Congestion (# of Hours)
- Travel Time Index
- % Persons residing within 5 mi. (2005)
- % Persons residing within 5 mi. (2030)
- % Jobs located within 5 mi. (2005)
- % Jobs located within 5 mi. (2030)
- EJ populations located along corridor
- Interchanges per mile
- Number of System Connections
- Number of Freight Connections
- Presence of Existing Express Bus
- Presence of Planned **Express Bus/BRT**
- Presence of Existing Park & Ride Lots
- Presence of Planned **Park & Ride Lots**
- Candidate for Truck Only Lanes
- Design Activity Already Underway
- PPI Proposed on Corridor

Initial Corridor-Level Screening Results



Menu of Managed Lanes Treatment

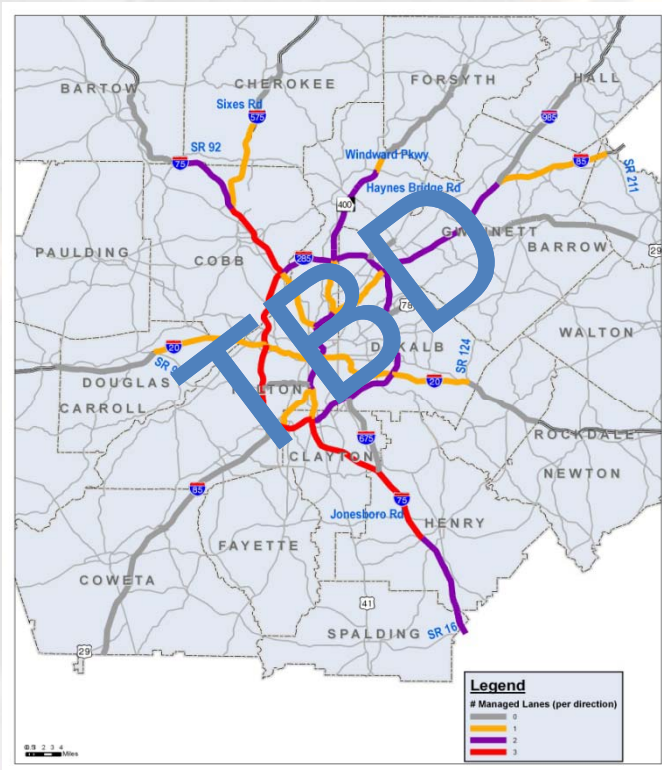
Corridor-Level Screening Results

Options under consideration

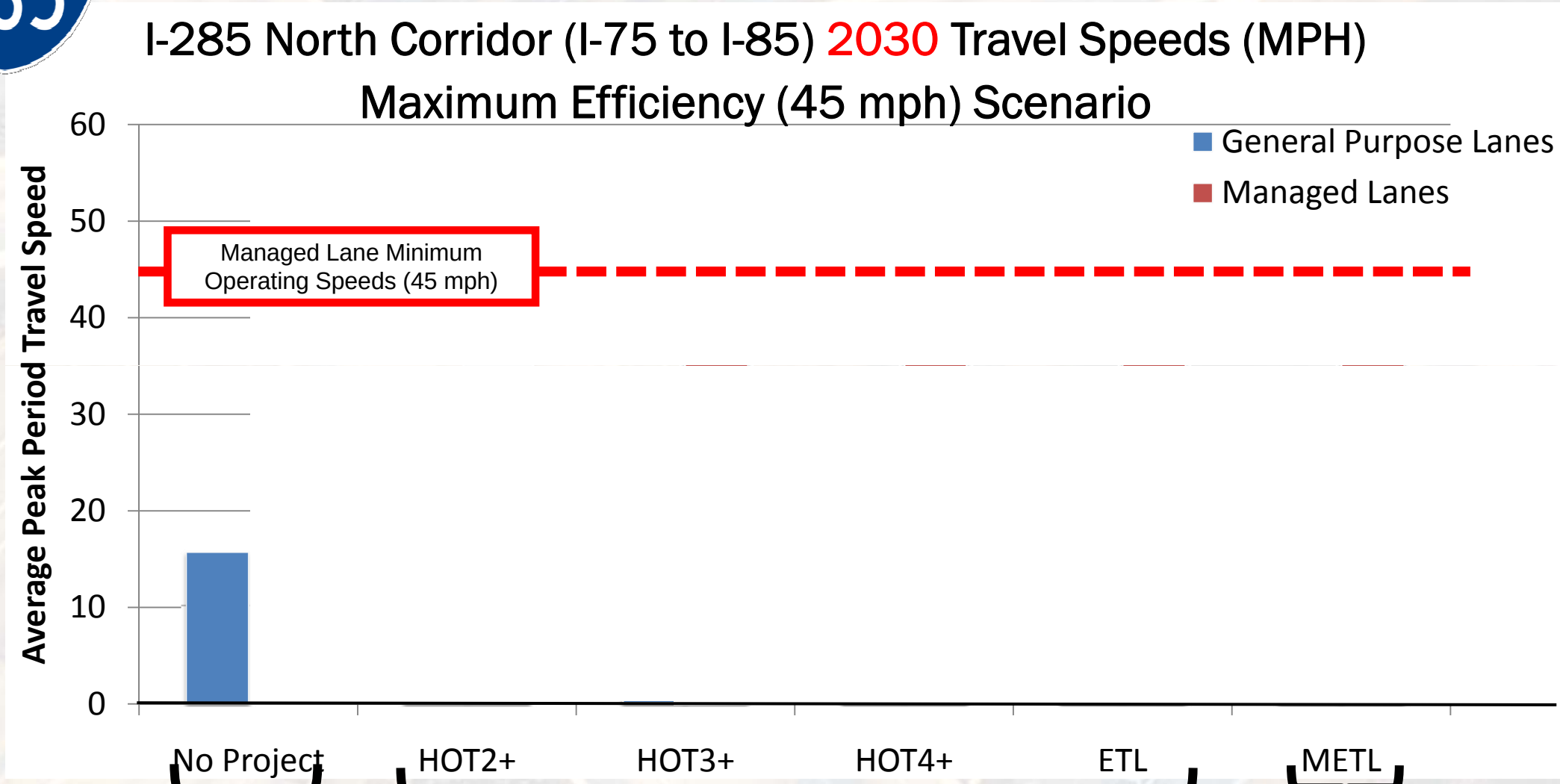
- Lane Operations
  - –Reversible Lanes
  - –Bi-directional Lanes (2 way travel)
- Number of Lanes
  - –1 lane in each direction
  - – 2 lanes in each direction
- Facility Location
  - –Elevated
  - –At-grade
  - –Inside median
  - –Outside median

*Ensure system-wide interface between corridors

System-wide Implementation Strategy



SAMPLE CORRIDOR



Key Decisions

1. Occupancy (HOV/HOT/ETL)
2. Maximum Revenue vs. Maximum Efficiency
3. Who is allowed access:
   - Cars + Transit + Light Duty Trucks
   - Cars + Transit + *All* Trucks
4. Convert Existing General Purpose (GP) Lane to Managed Lane

Decision #1 – Occupancy

HOV 2+ Over used, unreliable trip times (for cars and transit)

- *As congested as General Purpose lanes in future*
- *Diminished carpooling advantage*

HOV 3+ Under used, reliable trip times

- *Fewer vehicles, "empty lane syndrome"*

HOT 3+ Optimal use, reliable trip times

- *Continues to reward carpooling*
- *Produces greatest reduction in vehicle hours of delay*
- *Allows all customers to use all travel lanes*

Decision #1 – Occupancy
April 16, 2009 GDOT Board Resolution on HOT 3+

GDOT Board passes resolution allowing HOT 3+ on "initial implementation of a network of congestion-priced toll lanes i the Metropolitan Atlanta region" *(I-85 corridor, north of I-285*

"the Board desires to have the *entire system* operate as consistently as possible…"

Vehicles with preferential use of HOT lanes:

- Over the road buses
- Motorcycles
- Alternative Fueled Vehicles
- On-call emergency vehicles
- Passenger vehicles with 3 or mo persons

RECOMMENDATION: HOT 3+ SCENARIO

Decision #2
Maximum Revenue or Maximum Efficiency?

Maximum *Revenue*: Charge whatever the market will bear, in order to generate most revenue

Maximum *Efficiency*: Managed Lanes "value priced" to maintain a minimum 45 mph travel speed

Decision #2
Maximum Revenue or Maximum Efficiency?

Decision #2
Maximum Revenue or Maximum Efficiency?

Pros of Maximum Efficiency Strategy:

- Manages the entire system more efficiently
- Benefits to more users (greatest reduction in delay)
- Consistent with goals and objectives (increases throughput of people/cars)
- **Flexibility for financing (could increase revenues if revenues are off, for PPP)**
- Anticipate less public resistance in comparison to maximum revenue

Decision #2
Maximum Revenue or Maximum Efficiency?

Cons of Maximum Efficiency Strategy:

- Slightly less revenue

Maximum Efficiency Observations & Key Points:

- System-wide, toll revenues decline only 8% (HOT 3+) between maximum revenue and maximum efficiency
- Consistent with Plan's goal (maximizing the movement of people/vehicles)
- Anticipate greater public acceptance

RECOMMENDATION: MAXIMUM EFFICIENCY (45 MPH)

Decision #3
Who is allowed to access lanes?

Eligibility options:

- Cars + Transit + Light Duty Trucks *(2 axles)*
- Cars + Transit + ***All*** Trucks

Positives of allowing heavy duty trucks in managed lanes:

- Addresses some of truck traffic growth
- Provides mobility options for trucks
- Slightly greater revenue potential

Decision #3 *(cont'd)*

Who is allowed to access lanes?

Negatives of allowing heavy duty trucks in managed lanes:

- Truck trips only experience minimal overall time savings (saves 5% o 12 hour trip), insignificant for long haul trip.
- Trucks in managed lanes will likely result in a 3 lane managed lane (instead of 2 managed lanes in each direction), increasing costs
- Trucks increase long-term roadway maintenance requirements and costs
- Likely to introduce more trucks onto arterials at peak-periods
- Potential operational issues associated with trucks using GP left lanes to access/exit managed lanes

Heavy duty trucks only comprise approximately 6% of the peak-period traffic on Metro Atlanta Interstates

RECOMMENDATION: ACCOMMODATE CARS + TRANSIT + LIGHT DUTY TRUCKS

Decision #4
Convert Existing GP Lane to a Managed Lane?

- Ideally, provide 2 Managed Lanes in each direction, as warranted
- *However*, unable to construct additional lanes in some locations (cost and/or impacts)
  - Example: Downtown Connector has severe right-of-way constraints

Decision #4 *(cont'd)*
Convert Existing GP Lane to a Managed Lane?

Most cost-effective option in order to provide 2 Managed Lanes (in each direction) could include pursuit of "conversion" scenarios, such as:

- **Convert** an existing GP or HOV Lane (if available) *and* **construct** 1 new ML; *or*
- **Convert** existing HOV lane *and* **convert** existing GP lane (i.e. Downtown Connector)

Decision #4 *(cont'd)*
Convert Existing GP to a Managed Lane?

Depending on the conversion scenario, system-wide, converting GP to ML may result in:

- Construction cost reduction of approximately 10%-50%, depending on conversion scenario
- Projected toll revenues could increase by 10%-30%
- Operational impacts vary by corridor

Decision #4 *(cont'd)*

Convert Existing GP to a Managed Lane?

General Purpose Lane Conversion Observations:

- Public resistance anticipated
- Requires reversal of June 2005 GDOT Board Policy o tolling existing general purpose lanes *(if using PPP)*
- Georgia allowed to toll existing lanes on Interstate (granted under Value Pricing Pilot Program)

TOPIC UNDER CONSIDERATION:

IS CONVERSION OF GP LANES AN OPTION?

Next Steps

Resolve decisions:

- *Occupancy (HOT 2+/**HOT 3+**/HOT 4+/ETL)?*
- ***Maximum Efficiency (45 mph)** or Maximum Revenue?*
- *Access to Managed Lanes (**Cars + Transit + Light Duty Trucks** + Heavy Duty Trucks)?*
- *Convert existing General Purpose Lanes to Managed Lanes?*

Finalize study

Questions?