Georgia’s Transportation Challenges & Opportunities: Reducing Congestion & Delay

Presented to Georgia State University

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The Challenge of Congestion and Delay: Transportation in Georgia

- **Challenges...** Gas taxes in GA lowest in US
- 18.4 Cents per gallon Federal, 7.5 Cents per gallon Federal, plus 4% sales tax levy on gas
- Gas tax not indexed to inflation
- Last increase in gas tax was 1979
- Road costs are up an estimated 100% & ROW costs are up 200% (since 1979)
- Real buying power of gas tax declining > 50%
- “1950’s...Constitution” limits tax \( \rightarrow \) roads/bridges
- No state gas tax funds for transit or pedestrians

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- **Challenges**: Most subdivision traffic → to one outlet
- Subdivisions without mandatory sidewalks
- Schools built without sidewalks & many outside of neighborhoods
- Sidewalk deficit huge; connectivity difficult
- More local funding options needed
- Only 30/700 cities/counties → impact fees
- Few local funding sources except SPLOST
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- **Challenges**... Land use & transportation hard to link with multiple governments
- Many zoning ordinances exacerbate “sprawl”
- Sub-division codes not up-to-date
- Developers often don’t consider bicycle & pedestrian infrastructure
- Developers should encourage connectivity & grid street patterns within projects
- Cul-de-sacs discourage transit & walking
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- **Challenges**...“**Rush hours**” have lengthened from 3-4 to 6-8 hours in last 20 years
- “**Truck trips**” are rising with increases in income, trade & consumerism
- “**Just in time delivery**” is leading to more trucks on road
- **Port activity**, distribution & logistics increasing faster than manufacturing
- **Result** is more and more trucks on the road
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- Georgia DOT has a $1 B dollar annual transportation program
- The ARC “aspirations plan” for 2030 the region identified $74 B in needed projects and $53 B in anticipated revenues (**short-fall**)
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- Freight is fastest growing segment of transportation

- Interstate truck traffic growing at 2X rate of auto traffic in areas

- Georgia Ports 4th largest container port
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Congestion is of two types:

- **“Recurring”** congestion from population & auto trip chaining growth = 50% of delay

- **“Non-recurring”** congestion = 50% delay
  - *Weather, special events, accidents & work zone schedules are the primary elements of non-recurring delay*
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- In Georgia, congestion & delay costs $2 Billion annually
- In Atlanta, $1.75 Billion
- “One minute of lane closure results in 7 minutes of delay”
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Plans & Programs to address congestion:

- Downtown Connector Study
- Interstate System Plan
- I-285 Interchange Operations Study
- Atlanta Radial Interstate Study
- Statewide Transportation Plan
- “Fast Forward” program
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Interstate System Plan

Goal
To protect and maintain the Interstate System to fully serve the needs of Georgia now and in the future

- Evaluate conditions and operations
- Identify needs
- Determine improvements
- Recommend list of projects
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Needs Assessment: Interstate System Plan

- Four categories of deficiencies
  - Congestion – Volume to Capacity ratio (V/C)
  - Safety – fatality and crash rates
  - System preservation – bridge Structural Deficiency and pavement Equivalent Single Axel Loads (ESAL)
  - Connectivity – access to the interstate system

- Secondary impacts – air quality or economic impacts

- Four snapshots
  - Existing (2001)
  - Future no-build (2035)
  - Future updated TPRO/CWP (2035)
  - Future TPRO/CWP +/- recommended program (2035)
The Interstate System Plan identified an additional $2 B in interstate needs beyond projects currently identified in GDOT’s long range program (2030)
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Interstate System Plan Project –
Downtown Connector Congestion Mitigation and Operational Improvements Study

Downtown Connector Congestion Mitigation and Operational Improvements Study Purpose:

To identify and evaluate potential operational improvements to relieve traffic congestion on Atlanta Downtown Connector (I-75/I-85) during the AM, Midday, and PM peak hours and provide a plan for implementation of recommended improvements.
Early Implementation Plan
I-75/85 Southbound – North Area

- Ramp Lane/Striping Modification - Add second lane after freeway exit for storage on North Avenue off-ramp
- Signal Timing Adjustments - North Avenue (afternoon & PM peak)
- Ramp Lane/Striping Modification - Add third lane after freeway exit for storage and right turn capacity on Williams Street off-ramp
- Signal Timing Adjustments - Williams Street (regularly occurring events and special events)
Early Implementation Plan
I-75/85 Southbound - Middle Area

- Ramp Closure – Williams Street NB to I-75/85 SB via Spring Street on-ramp
- Ramp Metering – Spring Street SB on-ramp
- Intersection Improvement – Extend divider along Courtland Street between freeway off-ramp and through street flow to Baker Street
- Signage Modification – Shift sign assembly to right at Courtland Street exit gore
Early Implementation Plan
I-75/85 Southbound - South Area

- Ramp Lane/Striping Modification – Extend Ellis Street on-ramp acceleration lane
- Ramp Metering – Freedom Parkway SB on-ramp
- Ramp Conversion to HOV only - Edgewood Avenue
Ramp meters reduce the congestion caused when "platoons" of vehicles all try to enter the freeway in a big line. Instead of flowing into the right lane together, vehicles are stopped on the ramp, and then released one at a time.
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- "Fast Forward" program to address problem of congestion...provide solutions
- $15 B over 6 years
- Bonds for key interstate improvements
- Signals & ramp metering
- Ramp metering of downtown connector
- HERO & NaviGAtor Coverage
- HOV priorities on key interstates/highways
  - I-75, I-20, I-85, SR 400 & SR 316
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- "Fast Forward" program to address problem of congestion...solutions
- Signal coordination & synchronization
- HOV priorities allow Bus Rapid Transit
  - I-75, I-85, SR 316, I-20 W
  - BRT can operate in HOV lanes; flexible
  - Add lanes on I-75 for HOV, BRT; stations
  - Rubber tire capacity more versatile
  - Fixed rail too expensive, inflexible
"Fast Forward" program to address problem of congestion...solutions

GA 400 priorities
- Add lanes in median; possible BRT capacity; stations
- Possible shoulder widening
- Tolls for capacity improvements considered
Design activities underway on the I-20 West, I-75 North, I-85 North and SR 316 corridors.
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Consultant Selection is Complete.

Negotiations begun on 4 HOV Contracts.

I-75 North fm Akers Mill to I-575

I-85 North fm SR 316 to Hamilton Mill Rd.

SR 316 fm I-85- SR 20

I-20 fm I-285 to Evans Mill Rd.

I-20 West fm SR 280 to SR 5/Bill Arp Rd.

I-75 fm SR 54 north to Aviation Blvd.

SR 400 fm I-285 to McFarland Rd.
Ramp Meters being installed at entrance ramps to I-75/85 South from Spring Street, Freedom Pkwy, Ellis Street and Edgewood Ave.

Design work to begin November 15, 2004

Ramp meters currently being installed in downtown Atlanta. Anticipated to be operational by early 2005
Current/Future HERO and NaviGAtor Coverage

- **Current Peak HERO and NaviGAtor Coverage**
- **Current Peak HERO Routes w/future NaviGAtor Coverage**
- **Future HERO and NaviGAtor Coverage**
- **Future NaviGAtor**

ATMS Projects along I-285 and SR 400 on Schedule to be Let in March 2005

- SR 400 fm I-85 to north of I-285
- I-285 fm I-20W in Fulton to I-75 in Cobb
- I-285 fm I-75 in Clayton to I-20 in DeKalb
Signal Timing Manager Proposals for the Metro Atlanta Signal Upgrades were received September 2004. Anticipate contracting manager by early 2005.

Synchronized Signal Timing Implemented along segments of
• SR 316
• Hudson Bridge Rd. &
• Cascade Rd.

Work to begin on Scott Blvd. soon.
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- High Occupancy Vehicle (HOV) Lanes
- Bus Rapid Transit (BRT)
- High Occupancy Toll (HOT) lanes
- Signals and Ramp meters will better manage flow of traffic
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- GDOT & regional planning organizations preparing bicycle & pedestrian plans
- GDOT can add bike lanes when adding road capacity if route is in bike plan
- GDOT’s Pedestrian Guide is
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- GDOT manages $20 M Transportation Enhancement (TE) program; bi-annual
- Multi use trails, bicycle, pedestrian & enhancement
- > 100 recipients
- Popular program for streetscapes
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- Raised medians on congested roads reduce accidents by 55%
- More uniform traffic flow & pedestrian refuge result
- Studies show business impacts mitigated by improved flow
- Access management improves levels of service
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Strategies to lessen “recurring” congestion

- Expand ramp metering
- Optimize and synchronize traffic signal timing
- Accelerate High Occupancy Vehicle (HOV) lanes delivery
- Accelerate statewide interstate capacity improvements
- Fund transit start ups on heavily congested corridors
- Utilize “bus rapid transit” (BRT) as flexible transit alternative
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- Small town platting & land uses before zoning were “traditional neighborhoods”
- Return to “traditional” neighborhood plats & development options
- **Smart Growth** is not new, but needed now
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- **What can I do... Support Funding Options**
- **Governor’s Task Force** preliminary findings...
  - State Infrastructure Bank (SIB)
  - Index gas tax to inflation
  - Point of collection for gas tax to terminal
  - Local Option Transport Taxes...local gas taxes
  - Public/private partnerships for construction & operation of toll facilities
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- **What can I do...** Encourage **Smart Growth**
- Encourage “Grid Street” patterns & connectivity in subdivisions & mixed use developments
- Provide sidewalks & multi use trails
- Frontage roads to provide access to commercial parcels...more than one access point
- Encourage access management
- **Support more local funding options**