Integrated Corridor Freight Planning (ICFP)
I-75 South from Atlanta to Macon

Georgia Planning Association (GPA)
Fall Conference

October 10, 2013
Presentation Agenda

- Study Overview
  - Purpose and Goals
  - I-75 Corridor Conditions
- Integrated Corridor Freight Planning (ICFP) Process
  - Background
  - Methodology
  - Implementation
  - Alternative Applications
- Questions / Group Discussion
Study Overview

Purpose and Goals
Why Study the I-75 South Corridor?

- **Statewide Strategic Transportation Plan (2010-2030), April 2010**
- **IT3**

- **Broad Investment Categories**
  - People Mobility in Metro Atlanta and Rest of State
  - Freight Transport

- **Partnerships with MPOs and Locals**
  - Demand Management
  - Regional and Local Transit Planning
  - Considerations for State Investments
  - Last-mile Connectivity for People and Freight
  - Coordination of Transportation Investments with Development Patterns
Statewide Freight and Logistics Plan
February 2012

Highway Needs Identified
- Increase I-75 Capacity
- Reconstruct I-75/I-16 Interchange

Rail Needs Identified
- Rail-freight Deficiencies from Atlanta to Florida

Airport / Port Related Needs Identified
- Last-mile Transportation Projects
Expected Study Results

• Conceptual Improvements and Projects
• Specific Interchange Area Recommendations (i.e. Access Management; Land Use; Operational)
• Identify Multimodal Connectivity Improvements
• Action Plan with Specific Implementation Steps Identified
• Review and Compilation of Adopted Land Use Plans and Comprehensive Plans
Why Study the I-75 South Corridor?

**RAIL**
2006 Total Freight Flow Band (Annual)

**TRUCK**
2006 Freight Volume Band (Daily)

Source: GDOT Statewide Travel Demand Model
Approximate Study Area

- SR 155 in Henry County
- Sardis Church Road in Bibb County
Coordination with Planning Partners

- **MPOs**
  - Atlanta Regional Commission (ARC)
  - Macon Area Transportation Study (MATS)
- **Regional Commissions**
  - ARC
  - Three Rivers
  - Middle Georgia
- **GDOT District 3**
- **Counties and Associated Cities**
  - Henry
  - Spalding
  - Butts
  - Lamar
  - Monroe
  - Bibb
Steering Committee / Stakeholder Identified Study Goals

Goals Not in Priority Order

**Goals: Quality of Life**
- Enhance / Maintain Quality of Life
- Enhance Natural, Historic, and Community Resources
- Maintain Community Character
- Improve Intergovernmental Coordination
- Enhance Facility Function

**Goals: Performance-Based**
- Mobility for People and Goods
- Connectivity / Accessibility to Regional Activity Centers
- Safety
- Enhance Multimodal Transportation Options
- Support Economic Sustainability
- Expand Role as Major Logistics Hub

Source: I-75 South Corridor Study Steering Committee and Stakeholders
Study Overview
I-75 Corridor Conditions
Demographics: Population and Employment

**Population: 2010 to 2040**
- Projected to Grow by 49%
- Majority of Growth Concentrated in Spalding, Henry, Clayton

**Employment: 2010 to 2040**
- Projected to Grow by 60% from 2010 to 2040
- Significant Portion in Spalding, Henry, Clayton

<table>
<thead>
<tr>
<th>Counties</th>
<th>2010</th>
<th>2040</th>
<th>Projected Growth</th>
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<tbody>
<tr>
<td></td>
<td>Population</td>
<td>Employment</td>
<td>Population</td>
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<tr>
<td>Clayton, Henry &amp; Central Spalding</td>
<td>535,326</td>
<td>179,148</td>
<td>853,808</td>
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<tr>
<td></td>
<td>59%</td>
<td>69%</td>
<td>59%</td>
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<tr>
<td>Remainder of Spalding, Butts, Lamar &amp; Monroe</td>
<td>102,340</td>
<td>28,327</td>
<td>165,027</td>
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<tr>
<td></td>
<td>61%</td>
<td>56%</td>
<td>61%</td>
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<tr>
<td>Bibb &amp; Jones</td>
<td>168,657</td>
<td>107,070</td>
<td>184,037</td>
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<td></td>
<td>9%</td>
<td>46%</td>
<td>9%</td>
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<tr>
<td>Total</td>
<td>806,323</td>
<td>314,545</td>
<td>460,722</td>
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<tr>
<td></td>
<td>49%</td>
<td>60%</td>
<td>49%</td>
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</table>

Sources: Atlanta Regional Commission, Macon Area Transportation Study, and Georgia Department of Transportation Statewide Travel Demand Models
Projected High Growth Areas: 2010-2040

Population

Employment
Land Use

- **Existing Land Use Mapping**
  - Simplified Land Use Palette
  - 8 Land Use Categories
    - Single Family Residential
    - Multi-Family Residential
    - Public-Institutional
    - Commercial
    - Industrial
    - Park-Recreation-Conservation
    - Agriculture-Forestry-Open Space
    - Transportation-Communication-Utilities

- **Future Land Use Mapping**
  - Same 8 Land Use Categories
  - Additional Mixed Use Category

**LAND USE DATA SOURCES**
- ARC LandPro
- Three Rivers Regional Commission
- Middle Georgia Regional Commission
Land Use: Northern and Central Segments

Existing

Future

Sources: ARC LandPro data, Three Rivers RC data, Middle Georgia RC data, Study Team Analysis
Land Use: Southern Segment

Existing

Future

Sources: ARC LandPro data, Three Rivers RC data, Middle Georgia RC data, Study Team Analysis
Passenger Car Bandwidth Ranges (autos/day)

- 2,000 – 5,000
- 5,001 – 15,000
- 15,001 – 20,000
- 20,001 – 45,000

Truck Bandwidth Ranges (trucks/day)

- 250 – 750
- 751 – 2,000
- 2,001 – 3,500
- 3,501 – 7,000

Source: ARC, MATS, and GDOT Statewide Model
Summary of Transportation Issues / Needs

- **Roadway Capacity**
  - Locations Within Henry County
  - Locations Within Macon/Bibb County
  - Large Number of Through Truck Movements
  - Locations Along Parallel Corridors
  - Interchange Capacity Deficiencies

- **Operational**
  - I-16/I-75 Interchange
  - Existing Operational Deficiencies in Other Macon Area Interchanges
  - Locations Along Parallel Corridors
  - Interchange Capacity Deficiencies
  - Truck Parking
Summary of Transportation Issues / Needs

• **Rail**
  • Through Freight Shipments May Increase by 30% by 2040
  • Increased Congestion Due to Recent and Anticipated Port-related Growth
  • Bottleneck Between Atlanta and Macon
  • Approved Environmental Assessment for Passenger Rail

• **Transit**
  • Limited Transit Through / Within Corridor
    • Express Service in North Corridor (Atlanta region)
    • Local Service in South Corridor (Macon)
    • Limited Private-Sector Vanpool Services
Integrated Corridor Freight Planning (ICFP)  
*Background*
Corridor Mobility

I-75 South Major Corridor Transportation Modes

Auto
Truck Freight
Rail Freight
Transit

Land Use

Existing and Future
ICFP – Unique Aspects

• Assess and optimize overall transportation system performance by *simultaneously* planning improvements for *integrated multimodal systems*.

• Unlike conventional planning where improvements are identified *independently* by mode and then compete for limited available funding.
Integrated Corridor Freight Planning (ICFP)

Methodology
Integrated Corridor Freight Planning (ICFP)

- Identify Freight Hotspots
- Identify Existing/Future Deficiencies
- Assess Truck Freight Routing
- Develop Recommendations
Potential Freight Hotspots
## Potential Freight Hotspots

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Description</th>
<th>Existing Industrial Acres</th>
<th>Future Industrial Acres</th>
<th>Change</th>
<th>Growth Rate</th>
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<tbody>
<tr>
<td>1</td>
<td>Hartsfield-Jackson International Airport Area</td>
<td>3,336</td>
<td>3,441</td>
<td>105</td>
<td>3%</td>
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<td>2</td>
<td>Ft. Gillem Area</td>
<td>765</td>
<td>2,543</td>
<td>1,778</td>
<td>232%</td>
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<td>3</td>
<td>Stockbridge Industrial Area</td>
<td>866</td>
<td>1,807</td>
<td>941</td>
<td>109%</td>
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<tr>
<td>4</td>
<td>Hampton and Lovejoy Area</td>
<td>97</td>
<td>1,899</td>
<td>1,802</td>
<td>1,854%</td>
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<td>5</td>
<td>McDonough Industrial Area</td>
<td>1,912</td>
<td>4,776</td>
<td>2,863</td>
<td>150%</td>
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<td>6</td>
<td>Griffin Industrial Area</td>
<td>360</td>
<td>1,679</td>
<td>1,319</td>
<td>366%</td>
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<td>7</td>
<td>Spalding County I-75 Area</td>
<td>0</td>
<td>787</td>
<td>787</td>
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<tr>
<td>8</td>
<td>Butts/Spalding County Line</td>
<td>336</td>
<td>921</td>
<td>586</td>
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<td>9</td>
<td>Exit 201 – SR 36 and I-75 Area</td>
<td>277</td>
<td>814</td>
<td>537</td>
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<td>10</td>
<td>Butts County Greenfield Site</td>
<td>0</td>
<td>795</td>
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<tr>
<td>11</td>
<td>Monroe County Greenfield Site</td>
<td>0</td>
<td>337</td>
<td>337</td>
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<td>12</td>
<td>Forsyth SR 83 Site</td>
<td>0</td>
<td>160</td>
<td>160</td>
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<td>13</td>
<td>Planned Rumble Road Industrial Park</td>
<td>0</td>
<td>318</td>
<td>318</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Exit 5 – SR 74 and I-475 Area</td>
<td>151</td>
<td>468</td>
<td>317</td>
<td>210%</td>
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<tr>
<td>15</td>
<td>Downtown Macon Industrial District</td>
<td>2,432</td>
<td>2,452</td>
<td>20</td>
<td>0.8%</td>
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<tr>
<td>16</td>
<td>Ocmulgee East Industrial Park Area</td>
<td>1,510</td>
<td>2,915</td>
<td>1,405</td>
<td>93%</td>
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<tr>
<td>17</td>
<td>Planned GA Regional Industrial Park</td>
<td>0</td>
<td>736</td>
<td>736</td>
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<tr>
<td>18</td>
<td>Exit 153 – Sardis Church Rd and I-75 Area</td>
<td>0</td>
<td>435</td>
<td>435</td>
<td>--</td>
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<tr>
<td>19</td>
<td>Middle GA Regional Airport Industrial Area</td>
<td>1,199</td>
<td>5,594</td>
<td>4,395</td>
<td>366%</td>
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</table>

Sources: ARC, Three Rivers RC, Middle Georgia RC.
Potential Freight Hotspots
Potential Freight Hotspots

- Determined Areas of Future Industrial Land Use
- Calculated Buildable Land Areas / Warehouse Sizes
- Estimated Potential Daily Truck Trips Based upon Institute of Transportation Engineers (ITE) Trip Generation Methodologies
Potential Freight Hotspots

McDonough-Locust Grove Area

Spalding County-Butts County Area

Sources: Albion Regional Commission, Bureau of Transportation Statistics, U.S. Census Bureau, United States Geological Society.
Potential Freight Hotspots
ICFP Analysis Methodology

- **Traffic / Capacity**
  - 2040 Horizon Year
  - No Build Scenario

- **Comprehensive Assessment**
  - Trucks
  - Autos

- **Solutions Other than New Interchanges**

- **Consistency with Existing Plans**
I-75 Interchanges at SR 155 and Bill Gardner projected to operate at poor LOS and will experience increasing truck volumes by 2040.

Could improved access help alleviate congestion at existing interchanges?
I-75 Interchanges at SR 116 and SR 36 projected to operate at satisfactory LOS by 2040

Existing access will likely be satisfactory based upon local land use plans.
• I-75 Interchanges at Rumble Road projected to operate at poor LOS and will experience increasing truck volumes by 2040

• Could improved access help alleviate congestion at existing interchanges?
Macon Area
Integrated Corridor Freight Planning (ICFP)

- I-75 Interchanges at numerous locations within downtown Macon projected to operate at poor LOS and will experience increasing truck volumes by 2040.

- Could improved access help alleviate congestion at existing interchanges?
I-75 Interchanges within South Bibb projected to operate at satisfactory LOS, with exception of Hartley Bridge Road, and will experience increasing truck volumes by 2040.

Could improved access help alleviate congestion at existing interchanges?

- Could improved access help alleviate congestion at existing interchanges?
Analysis Components

- Major Facility Improvements
- Localized Improvements

Recommendations
Analysis Components

Major Facility Improvements
• Managed Highway Lanes
• General Purpose Highway Lanes
• Capacity Additions to Parallel Facilities
• Freight Mode Shift
• Passenger Rail

Localized Improvements
• Interchange Improvements
• Ramp Intersections
• Truck Freight Accommodations
• Transit Enhancements
• Access Management
Sample “Major Facility” Projects

- **2040 Existing + Committed (Funded) Projects and Additional Projects Analyzed Inside and/or Outside the I-75 Right-of-Way**
  - Additional Capacity to Parallel Facilities
    - US 41
    - US 23 / SR 42
  - Construct Frontage Road Sections
    - Jodeco Road to SR 155 (Henry County)
    - SR 16 to Colwell Road (Butts County)
  - Potential Freight Mode Shift: Truck To Rail
    - NS “S” Line
    - NS “H” Line
  - Construct Passenger Rail
## Potential Shift from Truck to Rail?

<table>
<thead>
<tr>
<th>Cities Intersected</th>
<th>Norfolk Southern &quot;H&quot; Line</th>
<th>Norfolk Southern &quot;S&quot; Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>McDonough and Jackson</td>
<td>One (1)</td>
<td>One (1)</td>
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<tr>
<td>Existing No. of Tracks</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Double Stack Vertical Clearance</td>
<td>18 - 20</td>
<td>Six (6)</td>
</tr>
<tr>
<td>Trains / Day</td>
<td>10 - 15 miles</td>
<td>10 - 15 miles</td>
</tr>
<tr>
<td>Siding Spacing</td>
<td>Construct double track</td>
<td>Establish Double-Stack Vertical Clearance</td>
</tr>
<tr>
<td>Potential Alternative to Increase Capacity</td>
<td>Six (6) to 10 double-stack trains / day</td>
<td>--</td>
</tr>
<tr>
<td>Existing Available Capacity</td>
<td>40 trains / day</td>
<td>14 trains / day</td>
</tr>
<tr>
<td>Additional Capacity with Alternative Implemented</td>
<td>8,800 trucks</td>
<td>6,160 trucks</td>
</tr>
</tbody>
</table>

### Conversions:
- 110 car train handles 440 containers
- There is one (1) container per truck
- 110 car train can remove 440 trucks from the highway

**Source:** Norfolk Southern
Potential Shift from Truck to Rail?

“S” Line: Double-Stack Vertical Clearance Needed to Increase Capacity
- Today: 6 trains / day
- Potential: 14 trains / day
- Equivalent: 6,160 trucks / day

“H” Line: Double Track Needed to Increase Capacity
- Today: 18-20 trains / day
- Potential: 40 trains / day
- Equivalent: 8,800 trucks / day

Source: Norfolk Southern
Integrated Corridor Freight Planning (ICFP)

Implementation
Implementation

• ICFP Developed Through Collaborative Planning Effort
  • Local, Regional and State Partners
  • Goals, Analysis, Findings and Forthcoming Recommendations

• Implementation Ideas?
  • Local Jurisdictions
    • Comprehensive Planning / Land Use
    • Integration - Local Transportation and Development Initiatives

• Corridor/Regional Planning Council
  • Develop Through a Multi-jurisdictional Effort
  • Include all Local, Regional and State Planning Partners
  • Periodically Review Land Use and Development Consistency Across Jurisdictions
Integrated Corridor Freight Planning (ICFP)

Alternative Applications
Alternative Applications

- **Varying Geographies**
  - Statewide
  - Regional
  - Inter/Intra County
  - Corridor
  - Facility

- **Other Modes?**
  - Auto to Transit
  - Bike/Ped to Transit
I-75 South Corridor
Group Discussion

www.dot.ga.gov/I75South