Agenda

• Overview
• Schedule
• Corridor Screening Process
• Parameters
• Potential Strategies
• Current Activities
• Next Steps
Overview – MLIP

- Previous Atlanta Regional Managed Lanes System Plan (MLSP) Goals:
  - Protect mobility
  - Maximize person/vehicle throughput
  - Minimize environmental impacts
  - Provide a financially feasible system
  - Design and maintain a flexible infrastructure for varying lane management
Overview – MLIP

- Update MLSP as part of Managed Lanes Implementation Plan (MLIP) to:
  - Build upon previous MLSP goals
  - Reflect current funding constraints
  - Identify feasible locations for managed lane projects
  - Redefine and reprioritize projects from the previous plan based on current and future needs
  - Prioritize list of managed lane projects and accompanying financing strategies (P3 and traditional funding sources)

- Incorporate preliminary recommendations into RTP and TIP update, as appropriate during 2013
Overview – OPS

• Identify bottleneck areas
• Identify and evaluate potential low-cost improvements
• Document a prioritized list of operational projects
Study Area

- All limited access facilities in metro Atlanta
  - Interchanges
  - Up to 5 selected arterials within the interchange area of influence
<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>D</td>
<td>J</td>
</tr>
<tr>
<td>Coordination and Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of Alternative Strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of Potential Improvements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Feasibility Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Preliminary) Recommendations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Corridor Screening Process

- Recurring vs. nonrecurring congestion locations
- Physical limitations in median and/or shoulder
- Estimated benefit
- New capacity (i.e. shoulder lanes or reversible lanes during the peaks) evaluated as part of MLIP
- Operational improvements evaluated as part of OPS

Step 1: Initial screening based on distance of congestion

Step 2: Evaluate constructability – can it be priced?

Step 3: Estimate maximum travel time savings

Priced Managed Lane Projects

Bottleneck Operational Improvements
Planning Assumptions

• MLIP
  – All new capacity will likely be tolled
  – Remove HOV2+ to HOT3+ conversions from Atlanta MPO’s Transportation Improvement Program (TIP)
  – Eliminate assumptions of long-term concession agreements

• OPS
  – Can be implemented within 6 months to 5 years
  – Low cost
Potential Strategies

- Added Corridor Capacity
- Improved Design Geometrics
- Intelligent Transportation Systems (ITS)
- Freight
- Demand Management & Policy Considerations
Potential Strategies

• Added Corridor Capacity
  – Bottleneck Mitigation
  – Managed Lanes
  – Reversible Lanes (e.g. moveable barriers)
  – Drivable / Hard Shoulder Running
Potential Strategies

• Roadway Geometrics
  – Roundabouts
  – Diverging Diamonds Interchanges
  – Loop Ramps
  – Ramp Configuration
  – Channelization
  – Innovative Intersections
  – Minimum Intersection / Interchange & Ramp Spacing
  – Improvements to Median
  – Crash Investigation Sites
Potential Strategies

- Intelligent Transportation Systems (ITS)
  - Traveler Information Systems
  - Quick Response Incident Clearance
  - Roadside & Motorist Assistance
  - ITS Support Infrastructure
  - CCTV Cameras / Traffic Flow Monitoring
  - Signal Operation & Management
  - Variable Speed Limits
  - Queue Warning
  - Dynamic Merge Control
  - Ramp Metering / Flow Control
Potential Strategies

• Freight
  – Commercial Vehicle Geometric Accommodations
  – Truck Lane Restrictions

• Demand Management & Policy Considerations
  – Demand Management Strategies
  – Variable / Dynamic Pricing
  – Variable / Dynamic Ramp Closures
  – Vehicle Eligibility / Occupancy
Non-Traditional Options

• Shoulder Lanes
• Moveable Barriers
• Variable Speed Limits
Shoulder Lanes – Considerations

- Shoulder depth
- Shoulder width
- Bridge spans and pillar locations
- Entrance / exit ramp locations and volumes
- Additional signage
- Refuge sites (incidents and emergency access)
- Segment length
Shoulder Lanes – Case Studies

• Washington State - US 2
  – 1.5 miles during PM only
• Minneapolis
  – 3.0 miles during AM & PM
  – Use left shoulder
  – Region wide bus shoulders
• UK M42 Highway
  – 10 miles
  – Shoulders used in conjunction with variable speed limits
• Netherlands
  – Use left and right shoulder
Shoulder Lanes – Lessons Learned

- Capital costs vary dramatically based on existing infrastructure
- Develop overall active traffic management (ATM) system concept
- Pre-determine enforcement roles/processes, incident response, training, public outreach and education
- Regularly spaced video cameras to check for obstacles
- Regularly spaced emergency refuge areas with proper signing
Moveable Barriers – Considerations

- Directional split of traffic and number of lanes
- Median and/or shoulder widths
- Borrow inside lane or shoulder for reverse direction and/or widen to the median
- Bridge spans and pillar locations
- Additional signage
- Capital and Operating & Maintenance costs
- Logistics of reversible lanes
- Segment length
- Estimated benefit (travel time savings)
Moveable Barriers – Case Studies

- Honolulu H-1 Freeway
  - 12 mile HOV system during AM only
- Dallas Thornton Freeway/I-30
  - 5.2 mile managed lane during AM & PM
  - SOVs can use during incidents
- Colorado I-70
  - 13.5 mile EB Sundays

Source: Barrier Systems
Moveable Barriers – Lessons Learned

• Enforcement (if operated as a managed lane)
• Public education
• Dependable contractor
• Spare parts inventory
• Aggressive preventative maintenance
• Adequate staffing for enforcement, traffic incident management, and maintenance
• Consider multiple access points
Variable Speed Limits – Considerations

• Availability of ITS infrastructure
• Overhead signs vs. shoulder and median signs
• Enforcement
• Regulatory vs. advisory
• Coordination with existing signs
Variable Speed Limits – Case Studies

• Washington State
  • I-5 & I-90
• Minneapolis
  • Smart Lanes initiative
• UK M42 Highway
  • 10 mile
  • Variable speed limits used in conjunction with shoulder lanes
• Netherlands
  • In operation since 1981
Variable Speed Limits – Lessons Learned

• Provides congestion relief if speeds are adjusted prior to delays occurring
• Capital costs vary dramatically (signage, technology, emergency refuge areas)
• Develop overall active traffic management (ATM) system
• Pre-determine enforcement roles and processes, incident response, personnel training, public outreach and driver education plan
Current Activities

• Initial windshield survey to identify existing roadway characteristics
  – Shoulder width and pavement type
  – Horizontal clearances
  – Current lane widths
  – Median type and widths
• Analyzing directional splits and traffic volumes
Directional Traffic Split – AM

Source: ARC Plan2040 2010 network
Directional Traffic Split – PM

Source: ARC Plan2040 2010 network
Next Steps

• Complete windshield survey and directional split analysis
• Post-process speed and volume data
• Determine needs (identify bottleneck areas)
• Complete corridor screening process
• Evaluate projects
• Recommend list of projects
• Develop financial plan for managed lane projects
• Coordinate with ARC throughout the process
Kyle Mote, GDOT Project Manager
(404) 631-1987
kmote@dot.ga.gov