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MEETING MINUTES

MLIP & OPS	January 24, 2013, 10 am
Project Name	Date/Time of Meeting
Stakeholder Committee Meeting #1	GDOT
Purpose of Meeting	Location
Toby Carr (GDOT Planning)	Janine Miller (GRTA)
Cindy VanDyke (GDOT Planning)	Rob Goodwin (GRTA)
Matthew Fowler (GDOT Planning)	Carlos Campoo (SRTA)
Kyle Mote (GDOT Planning)	Mary Sallach (SRTA)
Ulysses Mitchell (GDOT Planning)	Anne Marie Day (FHWA)
Julia Billings (GDOT Planning)	Jane Hayse (ARC)
Darryl VanMeter (GDOT IPD)	Dahshi Marshall (ARC)
Marlo Clowers (GDOT IPD)	Don Williams (MARTA)
Charner Register (GDOT IPD)	Keli Kemp (HNTB)
Mark Demidovich (GDOT Traffic Ops)	Jennifer King (HNTB)
Mike Lobdell (GDOT District 7)	Garth Lynch (HNTB)
Edens Davis (Governor's Office)	Andrew Smith (HNTB)
Matt Ogle (OPB)	Keith Strickland (HNTB)

Attendees

INTRODUCTION:

Kyle Mote began the meeting with an overview of the MLIP and OPS studies. He provided background on the purpose of the studies, the coordinated process, intended outcomes and the general timeframe for activities. He then turned the presentation over to Keli Kemp, HNTB, who provided detail on steps each project will follow to get to a prioritized list of projects. She discussed potential strategies that will be evaluated for each candidate corridor and described the case studies being performed to inform the process.

During the presentation, several key questions and comments were raised, as follows:









- 1. Janine Miller indicated the importance of connecting employment centers as one of the key project prioritization criteria. She noted that it follows the Governor's strategic goals and should be appropriately considered in project definition and prioritization.
- 2. Janine Miller asked if projects would exclusively fall into one study or the other. Keli noted that, while segments/bottlenecks will initially be defined as either an operational or managed lanes improvement opportunity, if later analyses indicate that it would be better mitigated through the other type of improvement, that it would change categories. The process will be iterative and will determine the best improvement strategy for each problem area. Furthermore, a corridor may include both operational and managed lane strategies.
- 3. Janine Miller had a question regarding the removal of all HOV2+ to HOT3+ conversion projects that were recommended as part of the previous Managed Lanes System Plan. Matthew Fowler noted that these projects would be removed from the TIP project list.
- 4. Jane Hayse noted that there needed to be close coordination with ARC on technical analyses being performed as it relates to the LRTP update.
- 5. Jane Hayse asked how variable speeds along I-285 will be incorporated into the study. Keli noted that the study team was aware of this project and that any recommendation for this corridor would consider that project as in place. Variable speed limit strategies may be considered along other corridors in the region.
- 6. Dahshi Marshall asked if the study would include an assessment of toll revenues, bonding, Public Private Partnerships (P3) and other financing mechanisms. Matthew Fowler stated that all of these tools would be assessed in the financing portion of this study.

ADDITIONAL STAKEHOLDER INPUT:

Following the presentation, attendees were asked to provide input on two questions. The following input was received:

In addition to system-to-system interchanges, what bottlenecks do you see in the region that should be considered? In particular, are you aware of any ramps that back up on to the mainline?

- 1. I-85 South at Old National Highway
- 2. I-285 at exits 15 and 16
- 3. Look at the previous bottleneck studies that have been performed recently by ARC

In addition to the strategies discussed, are there other strategies that you think might be successful?

- 1. Queue jumpers for Express Buses
- 2. Double lane ramp meters
- 3. Variable speeds in managed lanes
- 4. Signal pre-emption for buses on ramp meters
- 5. Dynamic diversion on arterials
- 6. Arterial improvements to enhance flow









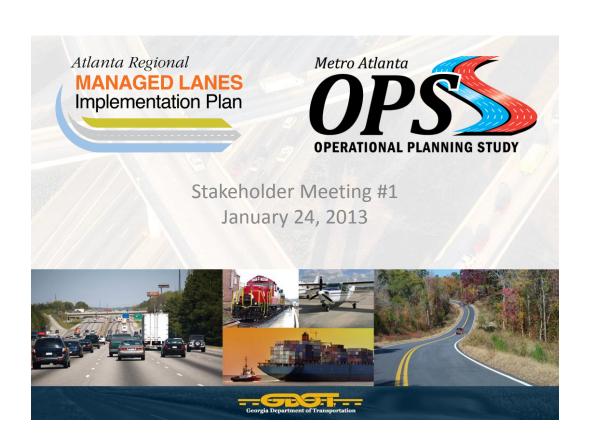
- 7. Local lanes (for short trips) and express/through lanes (for longer distances)
- 8. Forward thinking ITS improvements (infrastructure to meet the needs of future technologies such as Smart Cars)
- 9. TDM strategies
- 10. Smart phone applications

ACTION ITEMS:

The following action items resulted from the meeting:

- 1. Kyle Mote to schedule meeting with Mike Lobdell and Paul Denard.
- 2. Kyle Mote to send sign-in sheet to Charner Register.
- 3. Keli to send Kyle a list of relevant studies that have completed since the last MLSP to send out to the stakeholder committee to see if any other studies should be reviewed.







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

system





Overview - MLIP

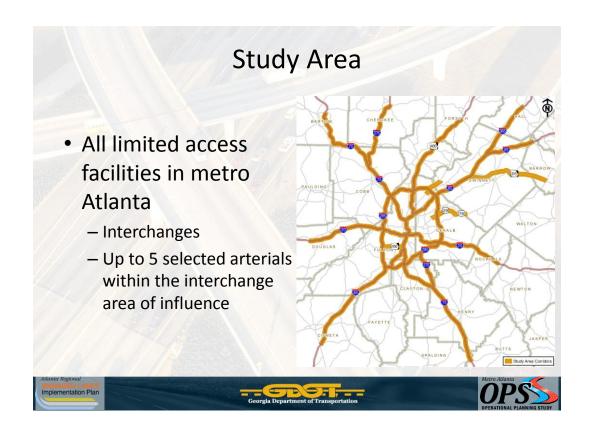
- Update MLSP as part of Managed Lanes Implementation Plan (MLIP) to:
 - Build upon previous MLSP goals
 - Reflect current funding constraints
 - Identify feasible locations for managed lane projects
 - Redefine and reprioritize projects from the previous plan based on current and future needs
 - Prioritize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

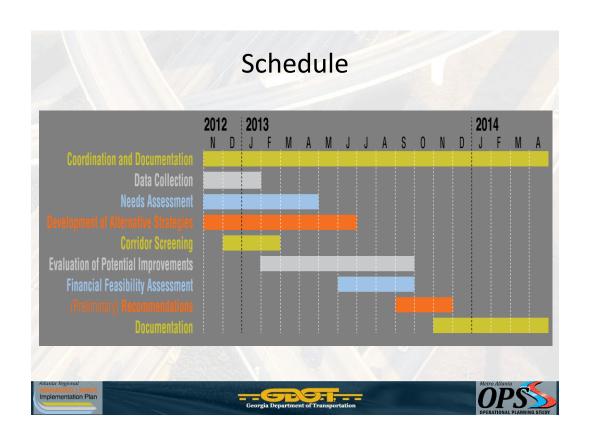


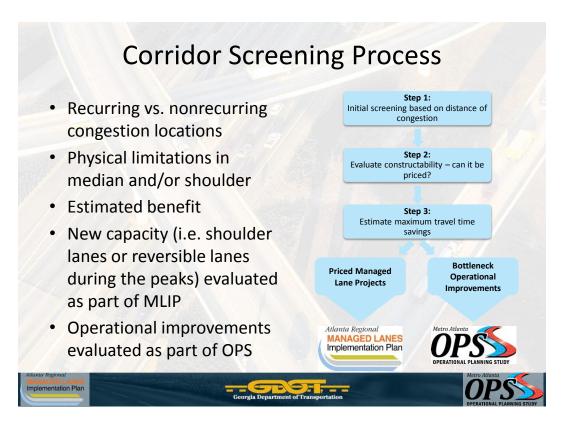




Overview – OPS • Identify bottleneck areas • Identify and evaluate potential low-cost improvements • Document a prioritized list of operational projects







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

MANAGED LANES Implementation Plan





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

MANAGED LANES Implementation Plan





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







Sign in Washington

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











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



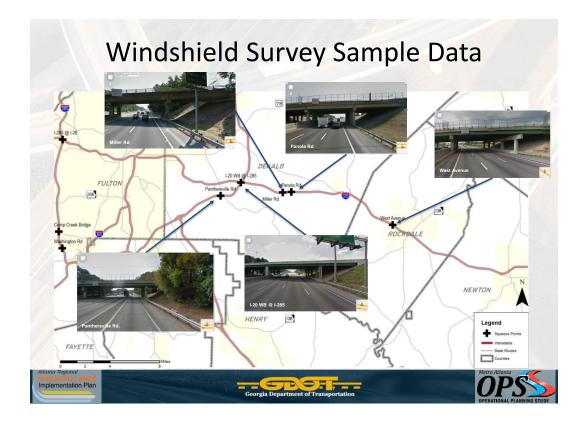


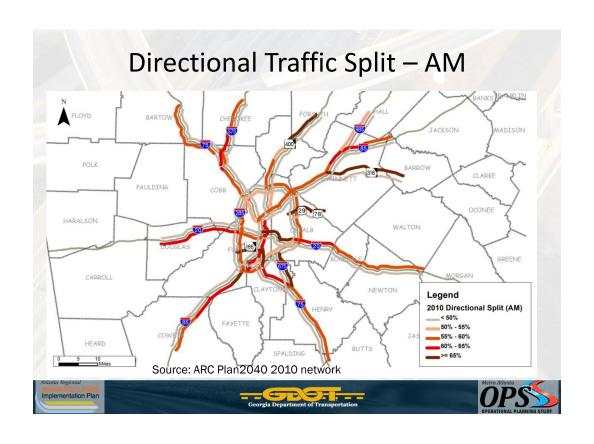


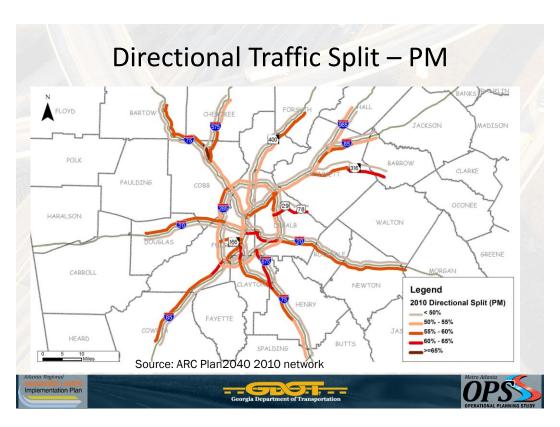
Current Activities

- 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









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













MLIP & OPS March 25, 2013, 10 am

Project Name Date/Time of Meeting

Stakeholder Committee Meeting #2 GDOT

Purpose of Meeting

Russell McMurry (GDOT Chief Engineer) Rob

Toby Carr (GDOT Planning)
Cindy VanDyke (GDOT Planning)

Matthew Fowler (GDOT Planning)

Kyle Mote (GDOT Planning)

Ulysses Mitchell (GDOT Planning)

Loren Bartlett (GDOT IPD)

Charner Rodgers Register (GDOT IPD)

Meg Pirkle (GDOT Traffic Ops)
Paul DeNard (GDOT Traffic Ops)

Mike Lobdell (GDOT District 7)

Matt Ogle (OPB)

Rob Goodwin (GRTA)

Location

Annie Gillespie (SRTA)

Chris Tomlinson (SRTA)

Anne Marie Day (FHWA)

Latoya Jones (FHWA)

Steve Luxenberg (FHWA)

Dahshi Marshall (ARC)

Don Williams (MARTA)

Keli Kemp (HNTB)

Jennifer King (HNTB)

Garth Lynch (HNTB)

Andrew Smith (HNTB)

Keith Strickland (HNTB)

Attendees

INTRODUCTION:

Kyle Mote began the meeting by welcoming attendees and discussing the purpose of the meeting. He then turned the presentation over to Keli Kemp, HNTB, who provided an overview of the MLIP and OPS studies. She discussed the identified congestion and bottleneck locations and the screening process used to identify which locations would be addressed within each of the studies (i.e. managed lanes as part of the MLIP and/or operational strategies as part of the OPS). She then briefly reviewed the types of operational strategies being evaluated system-wide for the OPS, as well as types of operational strategies to be evaluated at specific locations. Keli also reviewed the corridor screening process for determining which managed lane strategies (i.e., new capacity, shoulder usage, and/or reversible movable barriers) will be evaluated along each corridor. Keli then provided instructions for the next portion of the meeting - the breakout groups.

Attendees were then separated into 3 breakout groups or stations, in which they reviewed selected operational strategies for evaluation. The stations were based on geographic area of the improvements and were defined as "northern corridors," "southern corridors" and "inside the perimeter corridors." Each group spent 10-15 minutes at each station and then rotated to the next station in order to discuss highlighted strategies in all three geographic areas. A map of the types of operational strategies to be evaluated by location for each geographic area was also briefly described. The following describes the highlighted improvements reviewed for each group and the comments received.







STATION 1: INSIDE THE PERIMETER

Strategy A: Downtown Connector @ Williams St.

Location: Downtown Connector @ Williams St. (SB Off-Ramp, NB/SB On-Ramp)

Cause of Congestion: Weave of SB exiting traffic approaching the intersection of Ivan Allen Jr. Blvd.

Potential Operational Strategies for Evaluation:

- Prohibit left turn at Ivan Allen Jr. Blvd. SB approach (left turns will occur at W Peachtree Pl.); and/or
- 2) Provide SB right turn arrow at Ivan Allen Jr. Blvd.

Comments:

- Consider using both lanes to serve right turns from Ivan Allen Jr. Blvd. WB to NB Williams St., as some vehicles use the current WB thru lane to make their right turns on NB Williams St.
- Static time of day signage may not work (people do not obey).
- Can West Peachtree Place accommodate the additional traffic?
- Can we enforce time of day signage for left turns?
- Are GRTA buses turning left onto Ivan Allen Jr. Blvd.? How will removing the William St. SB left turn affect bus operations/routing.

Strategy B: Downtown Connector NB from I-20 to International Blvd.

Location: Downtown Connector NB from I-20 to International Blvd.

Cause of Congestion: I-20 merging traffic and traffic weaving between MLK Jr. Dr. and Edgewood Ave.

Potential Operational Strategies for Evaluation:

- Close NB exit ramp at Edgewood Ave. to passenger vehicles (transit and emergency vehicles allowed); and/or
- 2) Drop thru lane (dynamically) on Downtown Connector NB south of I-20 to provide I-20 users merging onto Downtown Connector a thru lane (bring all 3 I-20 lanes on to NB Downtown Connector).

Comments:

- MLK Jr. Dr. NB on-ramp is needed in the AM.
- Look into the use of Edgewood Ave; this serves Georgia State University, Edgewood, etc.
- Manage Ellis, Edgewood, MLK ramps by time of day.
- I-20 issue is getting to the ramp; once on the ramp, it moves fine.
- HOV on I-20 to HOV on Downtown Connector there in currently no direct connection.

Additional Comments:

- I-85 and North Druid Hills Rd. ramp channelize the frontage road to prevent left turns at North Druid Hills Rd.
- Similar to US 78 & Orion Dr, the southern terminal of PIB has issues due to the signal.







- I-75 and West Paces Ferry SB Off-Ramp ramps back up, lots of traffic related to schools within the area. Potential solution could be shuttle buses.
- I-75 SB between Northside and Brookwood interchange lots of weaves.

STATION 2: NORTHERN CORRIDORS

Strategy A: GA 400 from McFarland Rd. to Peachtree Pkwy.

Location: GA 400 from north of McFarland Rd. to Peachtree Pkwy.

<u>Cause of Congestion:</u> Two NB general purpose (GP) lanes drop and merge south of McFarland Rd. (Exit 12) on GA 400. Recently completed GDOT project extended one NB GP lane approximately ³/₄-mile north of the McFarland Rd. Interchange (i.e. now goes from 4 to 3 lanes south of McFarland Rd. and then drops to 2 lanes north of McFarland Rd.).

<u>Potential Operational Strategies for Evaluation:</u>

1) Hard shoulder running on GA 400 from north of McFarland Rd. to Peachtree Pkwy.

Comments:

- Potential for merge problems with terminus of shoulder lanes.
- Some merge issues with existing SB lane.
- Sign/treat/emphasize shoulder lane as an auxiliary lane not a through lane.
- NB shoulder is not wide enough on bridge; evaluate revising limits of project to begin shoulder usage north of the bridge versus widening bridge if needed.

Strategy B: US 78 WB @ I-285 NB

Location: US 78 WB @ I-285 NB

Cause of Congestion: Signing/ Weaving/ Last Minute Decision Making

Potential Operational Strategies for Evaluation:

- 1) Re-signing for Lawrenceville exit (decision off-ramp only and eliminate exit only);
- 2) Add new pavement in the gore area to extend two-lane ramp; and/or
- 3) Restripe two lanes from US 78 to I-285 so vehicles merge before I-285.

Comments:

- Are people "cheating" or confused by US 29 exit? The answer is both.
- Some avoid I-285 NB by taking US 29 exit and "cheating" over at the last minute.
- Signage would help.GDOT Traffic Operations has looked at 2 options here:
 - Make SB I-285 a SB/NB option; provide 2 NB lanes; this may delay SB I-285 movement.
 - Provide 2 lanes to I-285 exit and extend 2 lanes back on US 78 WB; leave Cooledge/Brockett WB entrance ramp lanes as is.
- Use dynamic signing VDOT sometimes opens shoulders on weekends.









- Measure the length of the queue.
- Difficult move from Brockett WB entrance ramp; ramp meter may be cycling too fast.

Additional Comments:

- WB I-285 between Roswell Road and GA 400 weave issues
- I-285 NB to I-75 NB weave issues

STATION 3: SOUTHERN CORRIDORS

Strategy A: I-285 @ Camp Creek Pkwy.

Location: I-285 @ Camp Creek Pkwy.

Cause of Congestion: High volumes on Camp Creek Pkwy.

Potential Operational Strategies for Evaluation:

1) Reconfigure intersection based on diverging diamond interchange (DDI) and continuous flow intersection (CFI) concepts.

Comments:

- Interchange design needs to be intuitive for unfamiliar users; therefore, do not violate driver expectancy (the CFI-type left turns on both approaches on Camp Creek prior to the interchange may be the most problematic movements).
- Geometrics need to be truck friendly since this interchange carries a high percentage of trucks.
- Consideration needs to be given to the one-lane sections to allow stalled vehicles to be bypassed to prevent total grid lock.
- Provide measures to shield headlights of on-coming vehicles that are on the opposite side of the road.
- Can the bridge accommodate the reversed lanes without being widened?
- The shopping center on the west side of I-285 has poor traffic flow and may be partially responsible for problems at the interchange.
- The current traffic signal timing is weighted heavily to the ramps, especially the NB to WB left turn, to prevent traffic from backing up onto I-285.
- Should impacts to access of adjacent properties be considered in the overall project costs?
- Consider a median U-turn concept for this interchange in addition to the others.
- The geometric layout needs to consider and prevent potential wrong-way maneuvers.







Strategy B: I-285/I-20 East System-to-System Interchange

Location: I-285/I-20 East

Cause of Congestion: Various turning radii leading to difficulty for trucks navigating ramps

Potential Operational Strategies for Evaluation:

1) Improve ramp geometrics to accommodate trucks; and/or

2) Consider upgrade to existing automated truck rollover warning sign.

Comments:

None

Once all three groups had participated at each station, each group facilitator reported back a summary of the discussion to all the meeting participants. Keli then summarized the next steps for both studies. The next stakeholder meeting is anticipated for this summer and will present some of the impacts of the alternative analysis. The final stakeholder meeting is expected to take place in the Fall of 2013 and will provide preliminary recommendations.







Stakeholder Committee Meeting #2 March 25, 2013



Agenda

- Opening Presentation
 - Overview of Studies
 - Status Update
 - Existing Needs
 - Corridor Screening Process
 - MLIP Projects for Evaluation
 - OPS Projects for Evaluation
- Break-out Groups
- Recap of Break-out Group Discussions
- Closing Presentation

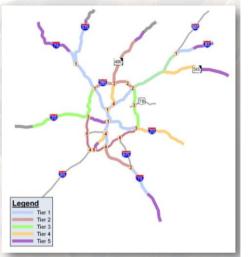






Overview - MLIP

- 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 <u>Implementation</u> 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 2013-2014

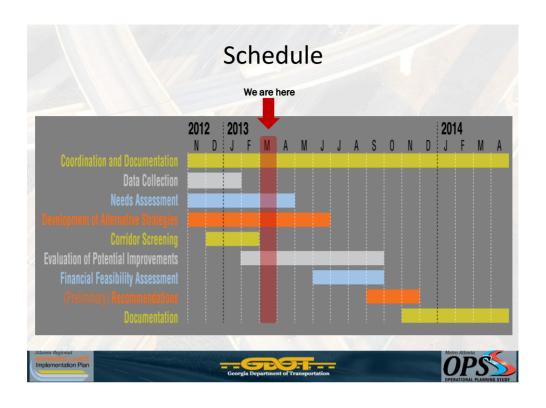






Overview — OPS • Identify bottleneck areas • Identify and evaluate potential low-cost improvements • Document a prioritized list of operational projects





Status Update

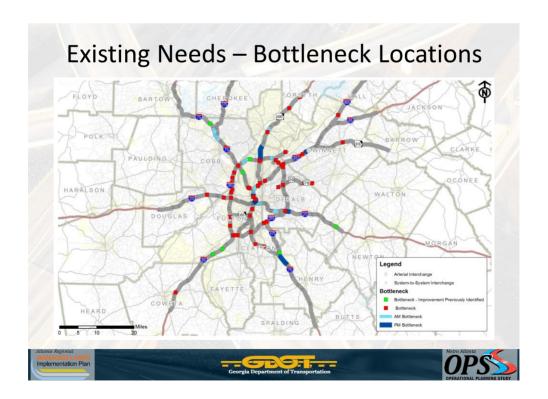
- Completed:
 - Completed initial windshield survey and directional split analysis
 - Post-processed speed and volume data
 - Determined capacity and bottleneck needs
 - Completed corridor screening process
 - Developed managed lane candidate strategies for evaluation
- Current Activities:
 - Developing operational strategies for evaluation



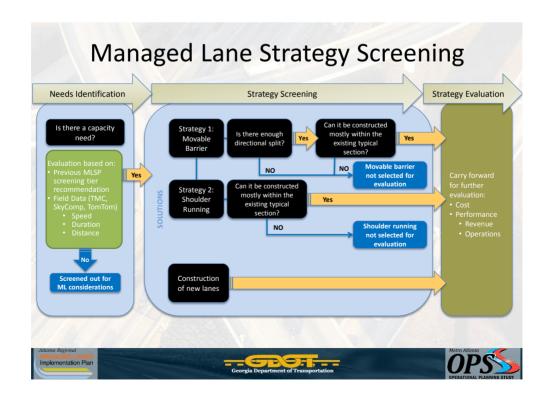
Existing Needs - Causes of Bottlenecks

- · High volumes
- Weaving
- · Lane drops/additions
- · Last minute decision making
- Lack of storage space at ramp terminals and/or high turn volumes
- Tight turning radii and/or steep grade on ramps
- Frontage road access
- Limited access facility terminates at signalized intersection
- Suspected drainage issues

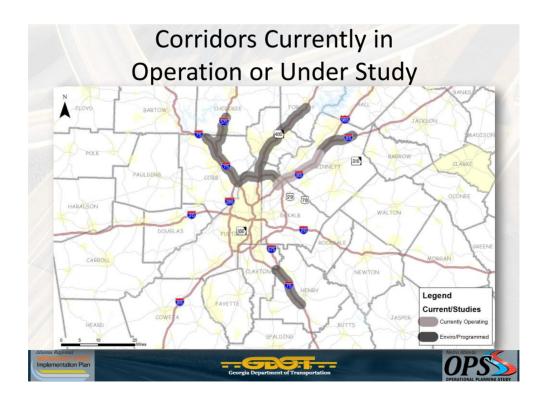


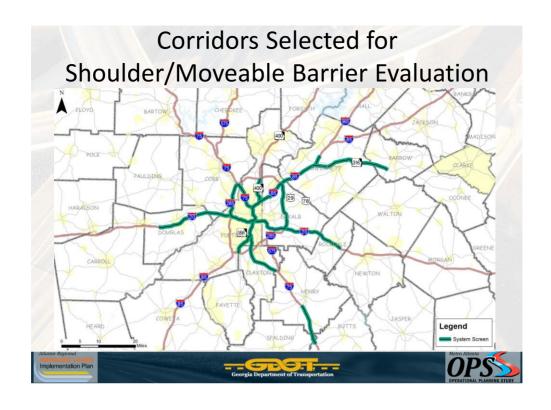


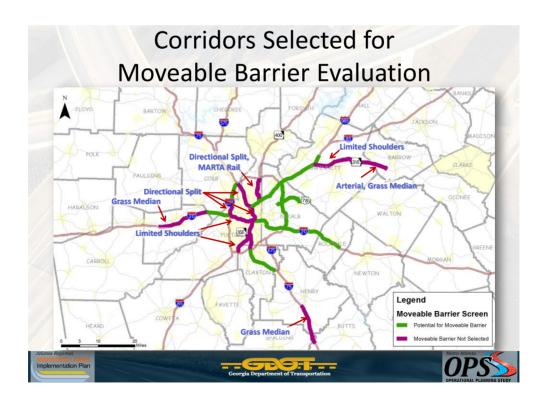
Corridor Screening Process Step 1: Recurring vs. nonrecurring Initial screening based on distance of congestion congestion locations · Physical limitations in Step 2: Evaluate constructability – can it be priced? median and/or shoulder Estimated benefit Step 3: Estimate maximum travel time New capacity (i.e. shoulder savings lanes or reversible lanes Bottleneck **Priced Managed** during the peaks) evaluated Operational Lane Projects Improvements as part of MLIP · Operational improvements Atlanta Regional evaluated as part of OPS Implementation Plan



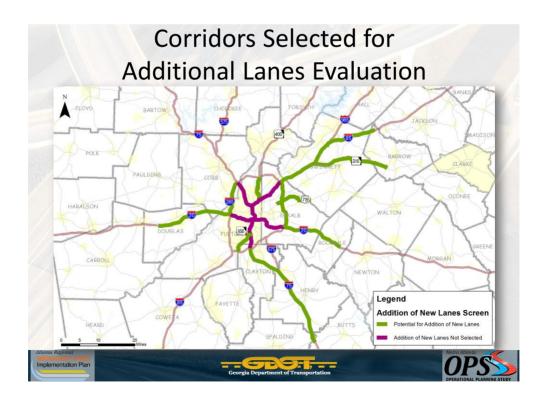












OPS Solutions

- System-wide solutions for consideration
- 75+ bottleneck locations indentified
- 12 types of location-specific solutions identified for evaluation
- Some locations include more than one solution for consideration







System-wide OPS Strategies for Evaluation

- 1) Expand ITS support infrastructure to include all limited access facilities
- Advanced queue warning signs at shoulder/moveable barrier locations
- Variable speed limits on limited access facilities with priority at shoulder/moveable barrier locations
- Dynamically change shoulder usage times based on congestion







System-wide OPS Strategies for Evaluation

- 5) Upgrade technology for CCTV cameras/traffic flow monitoring
- 6) Provide adequate crash investigation sites where shoulders are used
- 7) Modify ramp meters to permit 2 cars per green
- 8) Quick response incident clearance across the region
- 9) Expand number of HERO units if needed
- 10) Modify truck lane restrictions



Location-Specific OPS Strategies for Evaluation

- 1) Variable/dynamic ramp closures (closed to all vehicles v. closed to unauthorized vehicles)
- 2) Auxiliary lanes (new or using shoulders)
- 3) Collector/distributor roads
- 4) Modifications to frontage road access
- 5) Channelizations
- 6) Re-stripings







Location-Specific OPS Strategies for Evaluation

- 7) Interchange reconfigurations (Diverging Diamond Interchanges, etc.)
- 8) Turning prohibitions
- 9) Additional ramp meters
- 10) Modify existing ramp meter operations
- 11) Modify ramp geometrics, with a focus to better accommodate trucks
- 12) Automated truck rollover warning systems







Break-Out Group Instructions

- Purpose of Break-Out Group
 - Share some of the operational strategies being considered for evaluation
 - Obtain feedback on strategies and bottleneck locations
- Instructions
 - Start out at your assigned station
 - Rotate to the next station
 - After you have participated at all 3 stations, each facilitator will report back discussion highlights







Next Steps

- Complete development of operational strategies for evaluation
- Evaluate projects
- Next Stakeholder Committee Meeting (#3)
 - Share impacts of projects evaluated
 - Summer 2013
- Recommend preliminary list of projects







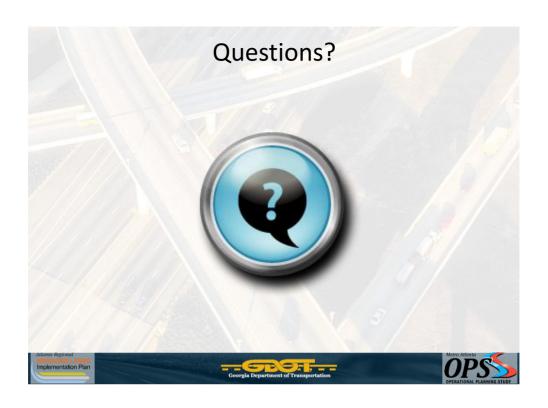
Next Steps (Cont'd)

- Final Stakeholder Committee Meeting (#4)
 - Share preliminary recommendations
 - Late 2013
- Develop financial plan for managed lane projects
- Coordinate with Atlanta MPO on PLAN 2040 update throughout the process













MLIP & OPS	September 9, 2013, 10 a.m.

Project Name Date/Time of Meeting

Stakeholder Committee Meeting #3 GDOT

Purpose of Meeting Location

Cindy VanDyke (GDOT Planning)

Matthew Fowler (GDOT Planning)

Kyle Mote (GDOT Planning)

Julia Billings (GDOT Planning)

Paul DeNard (GDOT Traffic Operations)

Kathy Zahul (GDOT District 7)

Robert Goodwin (GRTA)

Anne Marie Day (FHWA)

Steve Luxenberg (FHWA)

Tamara Christion (FHWA)

Alvin Gutierrez (FHWA)

Dahshi Marshall (ARC)

David Hayes (ARC)

Mike Lobdell (GDOT District 7)

Marlo Clowers (GDOT IPD)

Andrew Heath (GDOT Chief Engineer's Office)

David Hayes (ARC)

Mary Sallach (SRTA)

Bert Brantley (SRTA)

Keli Kemp (HNTB)

Garth Lynch (HNTB) Cara Hodgson (HNTB)

Attendees

INTRODUCTION:

Kyle Mote welcomed attendees to the meeting and explained that this 3rd Stakeholder Meeting will provide an update on the OPS and MLIP initiatives and ask for participants' feedback on the project prioritization structure currently under development. The presentation started with a high-level recap of the MLIP and OPS work that had been presented in the spring meeting. Kyle then led into a status update, beginning with OPS. He reviewed the objectives of the study, explained how the stakeholders' input had been incorporated into the study and reviewed the system-wide and location-specific operations strategies under consideration. He also provided examples of the interchange reconfiguration strategies being studied.

Kyle then reviewed how the national (MAP-21), state (Governor's Strategic Goals), and region/local (Plan2040 RTP, SSTP, and MLSP/MLIP) transportation goals had been incorporated into developing the OPS and MLIP project prioritization structures. The stakeholders then learned about the project prioritization goals for the OPS initiative. At that point, the participants were broken into two groups to participate in a weighting exercise. Kyle explained that their weighting of the themes would be incorporated into the overall project prioritization evaluation.

Each stakeholder was given 12 sticky dots to place on the 6 OPS themes they felt were most important as part of the prioritization review. Keli Kemp and Garth Lynch moderated the groups' discussions and answered questions.

Each group spent several minutes placing the dots on the boards. Garth and Keli reported back that "People Mobility" was a clear priority for both groups.

Kyle then brought the groups back together to review the MLIP strategies and corresponding project prioritization table. The stakeholders were then divided back into the two groups and given 10 sticky dots to







place on the 5 MLIP themes that they felt deserved the highest weighting. Keli and Garth once again led the group discussions. "People Mobility" once again rose to the top for both groups.

The following list outlines the comments received during the meeting:

OPS Project Prioritization Weighting Comments

- TDM is important to consider as part of the prioritization structure.
- Rather than using the terms vehicle through-put and vehicle delay we should use person through-put and person delay since that's what is being evaluated.
- It was asked if there any fatal flaws within the projects that we're running through the prioritization evaluation? Kyle and Keli explained that this had already been considered as part of the study and any projects with fatal flaws will not be advanced to the project prioritization process.
- While not a part of the project prioritization table, the group discussed that public support would play a factor in moving a project forward.
- The project team should be sure that they are considering the ARC's project prioritization framework as part of Plan2040 in evaluating projects, particularly the 13 activity centers that ARC has identified to ensure there is a synergy with the ARC. Kyle and Keli responded that the project prioritization structure incorporated relevant goals and measures from the ARC project prioritization framework for the RTP and TIP and the measure for determining job access to activity centers is indeed based on ARC's 13 activity centers.

MLIP PROJECT PRIORITIZATION WEIGHTING COMMENTS

- It was asked what the potential is for different policies in each corridor? It was explained that considering different policies for different corridors is not seen as an obstacle in the study and would be evaluated further as the study progresses towards recommendations.
- It is important to consider managed lane connectivity, as well as driver understanding and experience, with the managed lane treatments.
- Consider incorporating trip time reliability if possible into the metrics.

Keli and Garth summarized the group discussion topics for all the stakeholders. Kyle then talked about next steps for both studies. The next (and last) stakeholder meeting is planned for the winter. The project team will share preliminary recommendations for both the OPS and MLIP studies at this final stakeholder meeting for discussion and feedback.







Stakeholder Committee Meeting #3 September 9, 2013



Agenda

- OPS
 - Recap
 - Stakeholder Feedback
 - OPS Project Prioritization Structure
 - OPS Break-Out Session #1
- MLIP
 - Recap
 - Managed Lane Strategies
 - MLIP Project Prioritization Structure
 - MLIP Break-Out Session #2
- Next Steps













Objectives of OPS

- Identify bottleneck areas
- Identify and evaluate potential low-cost improvements that can be implemented within 6 months to 5 years
- Document a prioritized list of operational projects





Incorporating Your Feedback

- Thank you for partnering with us and providing valuable input that has contributed to refining these strategy evaluations
- Actions we've taken based on your feedback:
 - ✓ Placed emphasis on ramp meters / transit vehicle preemption in the strategy evaluation
 - ✓ Incorporated bottleneck locations based on recommendations from GRTA bus drivers, HERO unit operators, GDOT's Traffic Management Center, CIDs and Atlanta MPO staff





System-wide OPS Strategies for Consideration

- 1) Expand ITS support infrastructure to include all limited access facilities
- Advanced queue warning signs at shoulder / moveable barrier locations
- Variable speed limits on limited access facilities with priority at shoulder / moveable barrier locations
- Dynamically change shoulder usage times based on congestion





System-wide OPS Strategies for Consideration (Cont'd)

- 5) Upgrade technology for CCTV cameras / traffic flow monitoring
- 6) Provide adequate crash investigation sites where shoulders are used
- 7) Modify ramp meters to permit 2 cars per green
- 8) Quick response incident clearance across the region
- 9) Expand number of HERO units if needed
- 10) Modify truck lane restrictions





Types of Location-Specific Strategies for Consideration

- Variable / dynamic ramp closures (closed to all vehicles v. closed to unauthorized vehicles)
- 2) Auxiliary lanes (new or using shoulder)
- 3) Collector / distributor roads
- 4) Modifications to frontage road access
- 5) Channelization
- 6) Re-striping
- 7) Interchange reconfigurations (Diverging Diamond Interchanges, etc.)





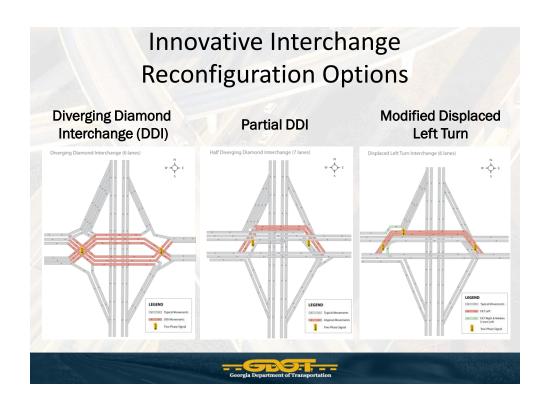
Types of Location-Specific Strategies for Consideration (Cont'd)

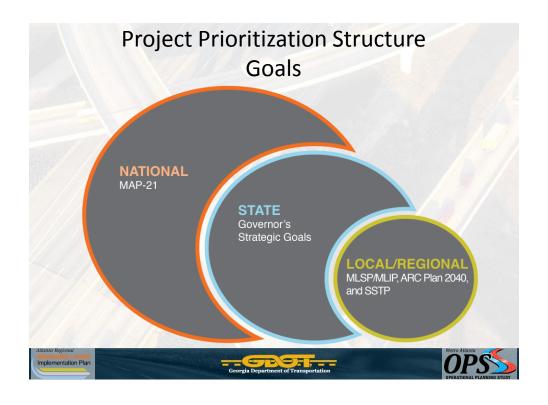
- 8) Turning prohibitions
- 9) Additional ramp meters
- 10) Modify existing ramp meter operations
- 11) Modify ramp geometrics, with a focus to better accommodate trucks
- 12) Automated truck rollover warning systems
- 13) Ramp meter bypass lanes for transit and vanpools















OPS Project Prioritization Structure								
		Transportation mobility	Financial feasibility	Safety	System connectivity & economic growth	System preservation & environmental sustainability	Project support and readiness	
				١			Å	
NATIONAL	MAP 21	Goals 3 & 4	-	Goal 1	Goals 3 & 5	Goal 6	Goal 7	
STATE	Governor's Strategic Goals	Goal 1	Goal 1	Goal 4	Goal 2	-	-	
LOCAL/REGIONAL	ARC Plan2040 RTP Goals	Goal 3	Assumed*	Goal 2	Goal 1	Goal 1	Assumed*	
LOCAL/R	SSTP**	Goals 1, 2, 3 & 4	-	Goal 7	Goals 3 & 8	-	-	
* Assumed or accounted for as part of the MPO TIP and RTP planning proce **Statewide Strategic Transportation Plan (SSTP) in the Atlanta regi								

٠,	Toject Phot	itization Structure
No.	Themes	Performance Measures
	Transportation mobility	Vehicle throughput
1		Changes in travel speeds or travel time savings
-		Reduction of vehicle delay
		Facilitation of transit options
2	Financial feasibility	Cost
2	Financial leasibility	Benefit/cost ratio
_	Cafab	Anticipated reduction of crashes
3 Safety	Salety	Anticipated reduction of incident response time
	Compositivitavond	Facilitation of current major freight movement
Connectivity and economic growth	Connectivity to current major employment centers	
	System preservation and	System preservation
5	environmental sustainability	Level of environmental impacts
6	Project support and readiness	Project readiness
		General constructability and schedule

Break-Out Group Instructions

- Purpose of Break-Out Group
 - Discuss and receive input on the project prioritization structure
 - Which themes and elements are most important to you in evaluating these strategies?
- Instructions
 - Two break-out sessions
 - Participants will stay at their tables for each session
 - Each facilitator will report back the group's discussion highlights







Objectives of MLIP

- Update MLSP as part of Managed Lanes Implementation Plan
- Evaluate new lanes, as well as lower cost priced managed lane solutions, such as shoulder lanes and movable barriers
- Incorporate preliminary recommendations, as appropriate and available, into RTP and TIP in the Fall of 2013; MLIP will wrap up in the Spring of 2014 with final recommendations





MLIP Status Update

System-Level Model Traffic & Revenue Analysis

- New lane
- Priced shoulder lane
- Moveable barrier lane

Initiated cost estimates (roadway and tolling)

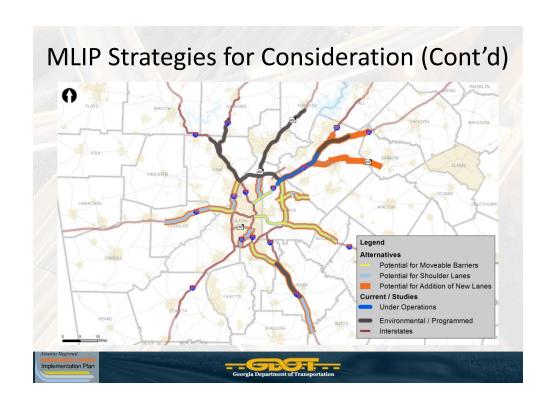
- Capital
- 0&M

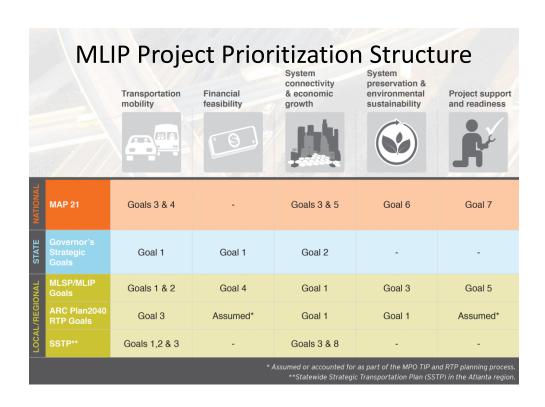


Existing Condition Existi









No.	Themes	Performance Measures
	Transportation mobility	Vehicle throughput and person throughput
1		Changes in travel speeds or travel time savings
_		Corridor reduction of vehicle delay
		Facilitation of transit options
		Revenue/mile
2	Financial feasibility	Cost/mile
		Project financing index (PFI)
	System connectivity and economic growth	Managed lane system connectivity
3		Connectivity to major employment centers
		Jobs accessed within 45 minutes of travel by car or transit
	System preservation and environmental sustainability	System preservation
4		Flexible lane management
		Level of environmental impacts
		Project readiness
5	Project support and readiness	General constructability and schedule
	readiness	Compatibility with regional plans



Next Steps

- Complete evaluation of MLIP and OPS projects based on refined project prioritization structure
- Conduct Final Stakeholder Committee Meeting (#4)
 - Share preliminary recommendations
 - Winter 2013/2014
- Develop financial plan for managed lane projects
- Complete documentation and corridor profiles
- Continue coordinating with ARC on PLAN2040 RTP Update throughout the process









www.dot.ga.gov\MLIP
www.dot.ga.gov\OPS

Kyle Mote
GDOT Office of Planning

(404) 631-1811 kmote@dot.ga.gov







MLIP & OPS	June 3, 2015, 1 pm
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Project Name Date/Time of Meeting

Stakeholder Committee Meeting #4 GDOT

Purpose of Meeting Location

Russell McMurry (GDOT Chief Engineer)

Kyle Mote (GDOT Planning)

Michael Roberson (GDOT HERO)

Julia Billings (GDOT Planning)

David Haynes (ARC)

Paul DeNard (GDOT Traffic Ops)

Mike Lobdell (GDOT District 7)

Kofi Wakousi (ARC)

Janide Sidefall (MARTA)

Marlo Clowers (GDOT)

Rob Goodwin (GRTA)

Kaycee Mertz (GDOT) Annie Gillespie (SRTA)

Joe Carpenter (GDOT) Bert Brantley (SRTA)

Todd Long (GDOT) Keli Kemp (HNTB)
Mark Demidovich (GDOT TMC) Garth Lynch (HNTB)

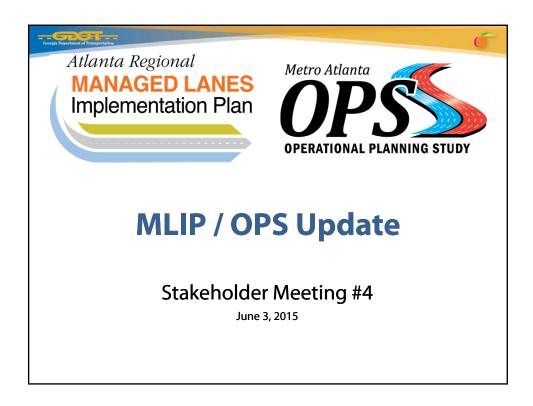
Attendees

INTRODUCTION:

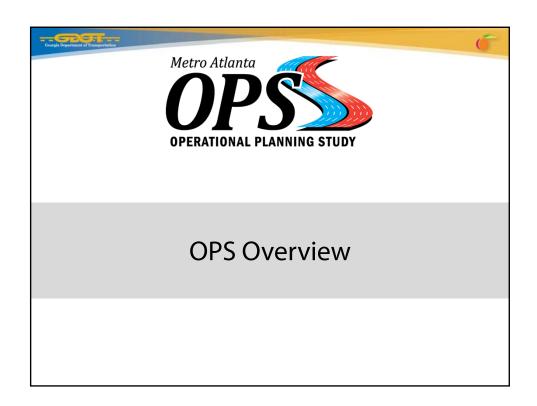
Kyle Mote began the meeting by welcoming attendees and discussing the purpose of the meeting. He then provided an overview of the MLIP and OPS studies. He discussed the identification, evaluation, and recommendations of the OPS study and the screening and prioritization process used to identify which locations would be addressed within the OPS study (i.e. managed lanes as part of the MLIP and/or operational strategies as part of the OPS).

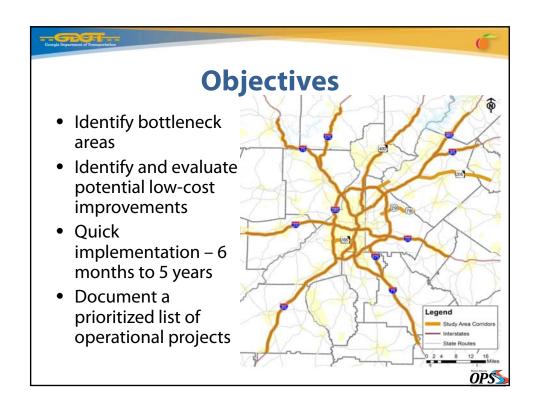
Kyle then reviewed the progress on the MLIP study. He identified corridors that are currently under operation or development in the region and outlined the goals and strategies of the MLIP study. He reviewed the corridor screening process for determining which managed lane strategies (i.e., new capacity, shoulder usage, and/or reversible movable barriers) were evaluated along each corridor. He also provided the structure used to evaluate and prioritize managed lane projects that included corridor performance (travel speed and delay), traffic and revenue projections, and project costs. Kyle then discussed the managed lane findings for several corridors and segments throughout the study area and outlined next steps as the project team completes the documentation for the study.

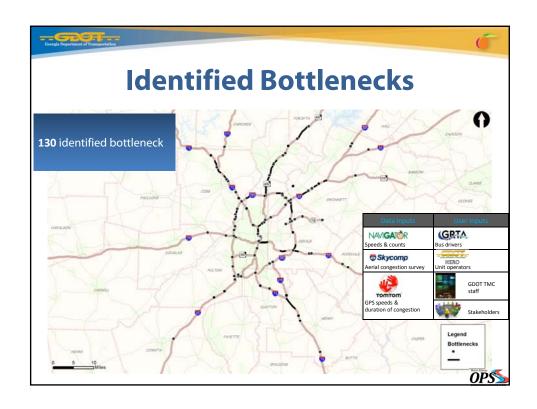


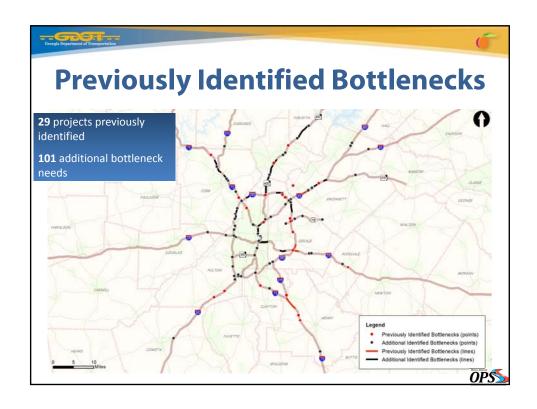






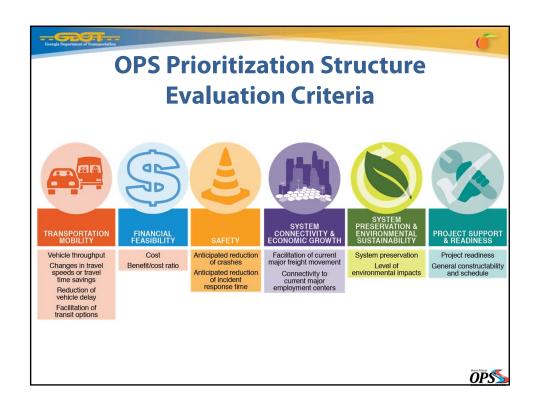


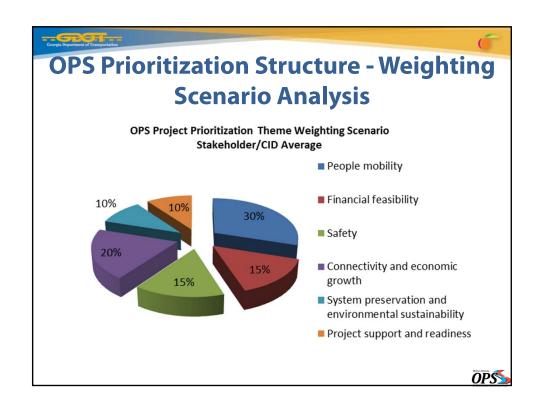


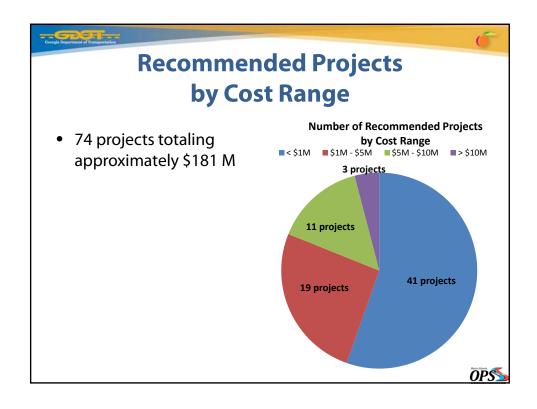




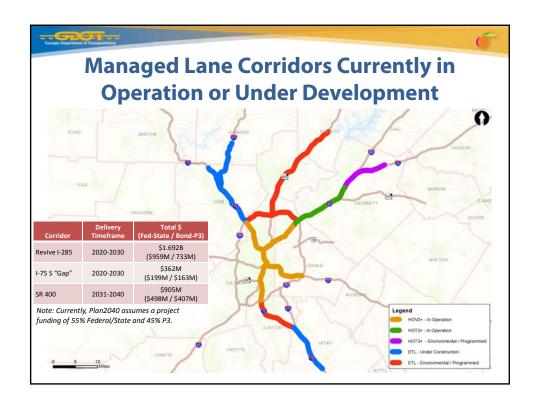


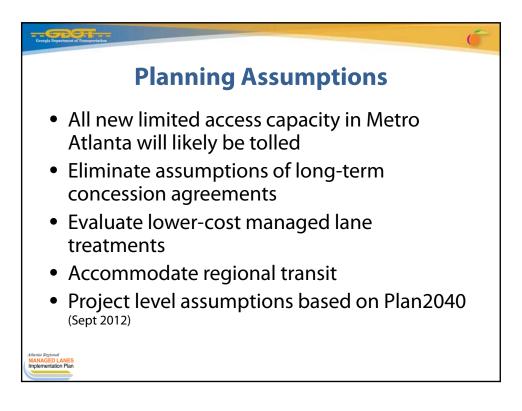














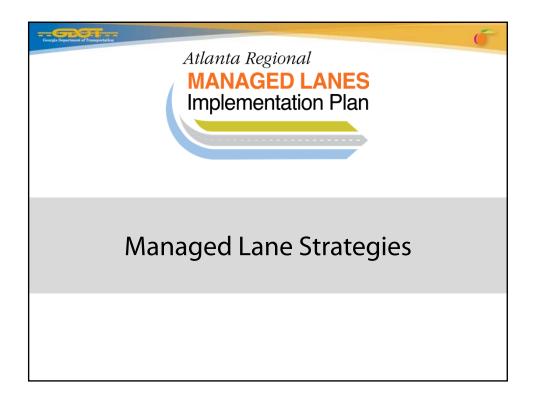
- Transit will be able to use inside (left) tolled lanes for free
- Park-and-ride lots considered in the development of access points
- GRTA bus drivers provided input on bottleneck locations and potential solutions for MLIP/OPS
- Ramp meter bypass lanes for transit recommended as part of OPS

MANAGED LANES Implementation Plan

Managed Lane <u>Implementation</u> Plan (MLIP)

- Updating MLSP as part of Managed Lanes <u>Implementation</u> Plan (MLIP) to:
 - Build upon previous MLSP goals
 - Reflected funding constraints
 - Identify feasible locations for managed lane projects
- Incorporate recommendations into RTP and TIP update, as appropriate

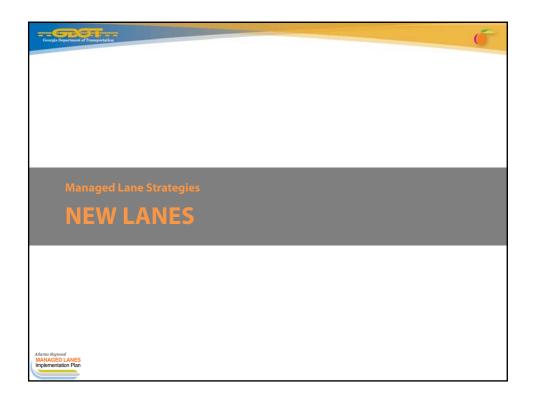
Atlanta Regional
MANAGED LANES
Implementation Plan



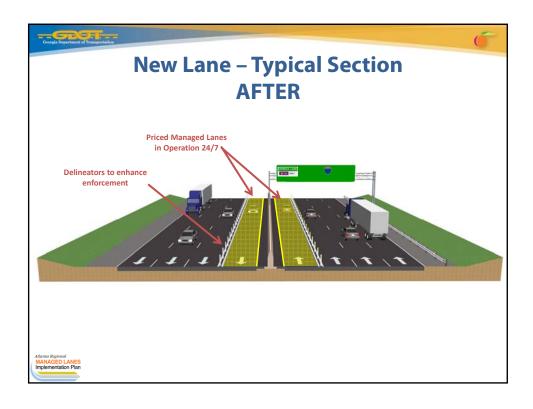
Managed Lane Strategies

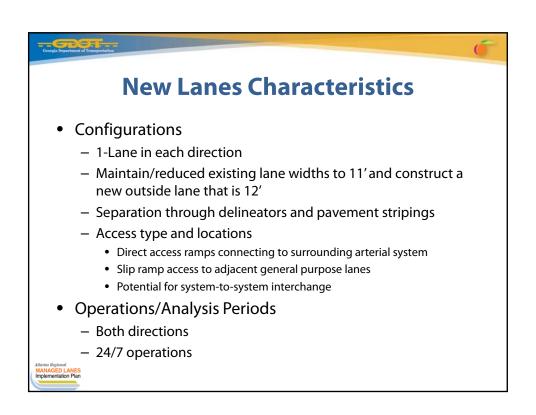
- Consider traditional priced managed lane solutions
 - New Lanes
- Consider non-traditional priced managed lane solutions
 - Dynamic Flex Lanes utilizing shoulders
 - Reversible Lanes using Moveable Barriers
- Intent is to not "reduce" current travel options for motorists

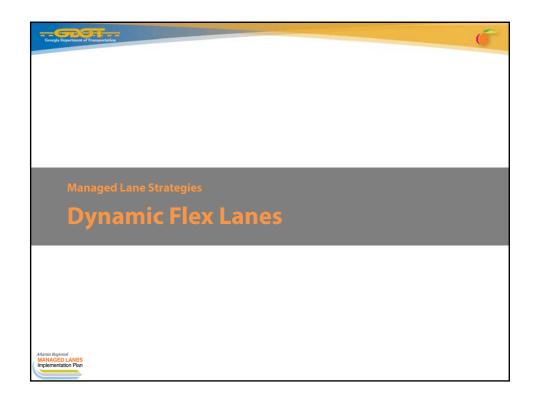
Atlanta Regional
MANAGED LANES
Implementation Plan



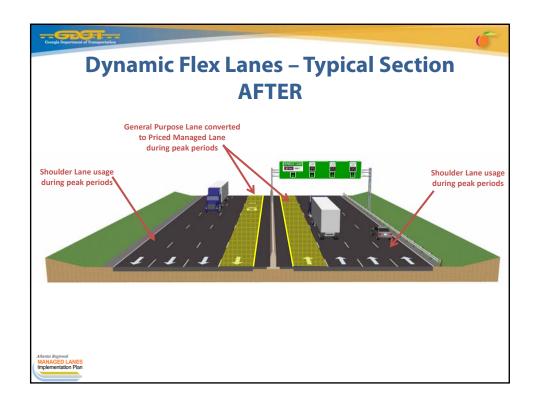


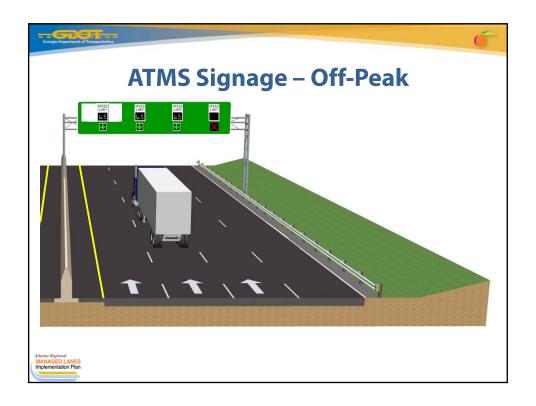








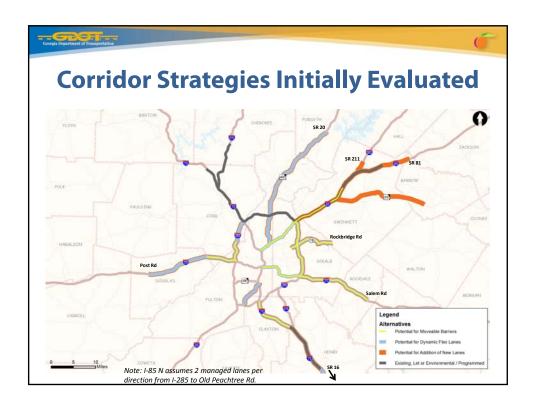




Dynamic Flex Lane Characteristics

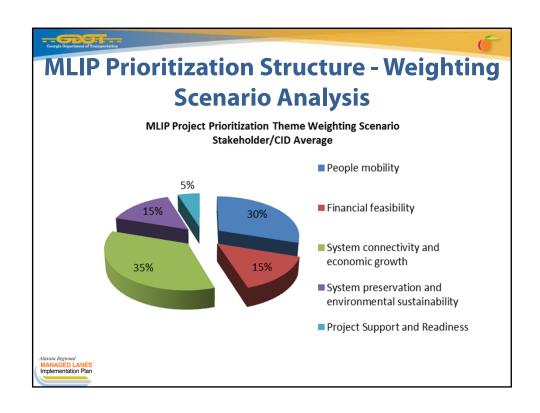
- Configurations
 - 1-Lane in each direction
 - Maintained existing lane widths and rebuilt outside shoulder to a new 12' lane (for use during peak periods only) and 2' outside shoulder
 - Separation through pavement stripings
 - Access type and locations
 - Slip ramp access to adjacent general purpose lanes spaced every 2-3 miles
- Operations/Analysis Periods
 - Both directions
 - Peak period operations

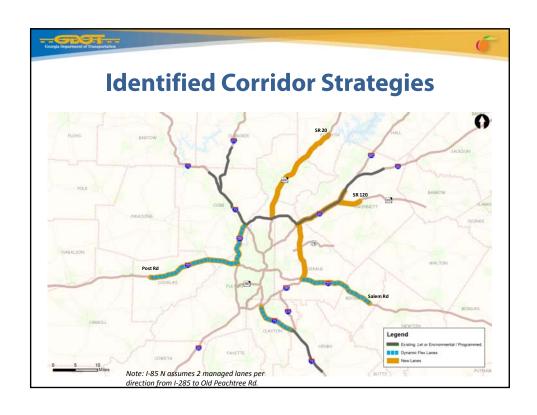
MANAGED LANES Implementation Plan



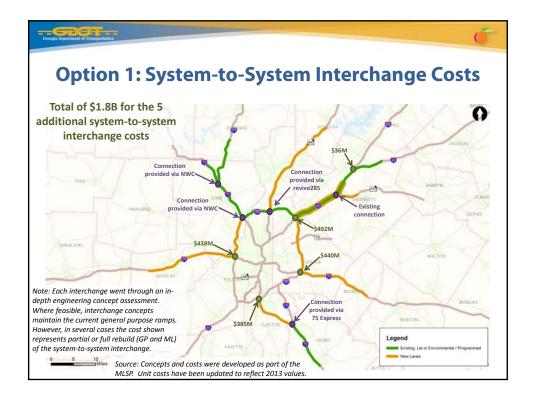


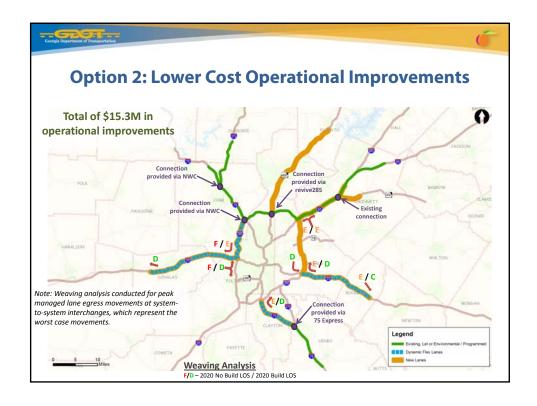


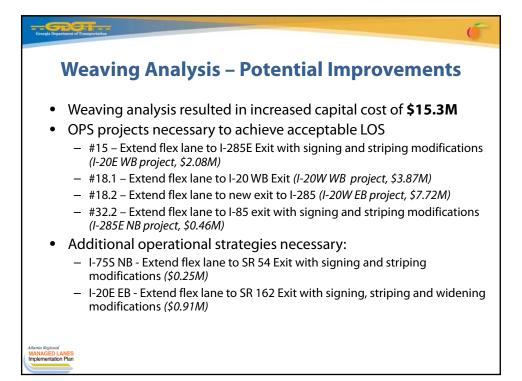


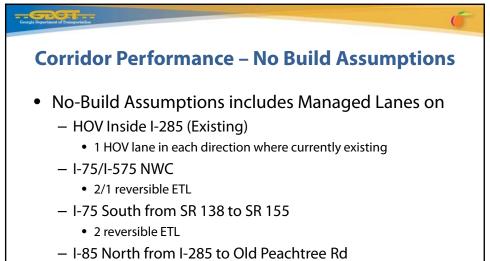












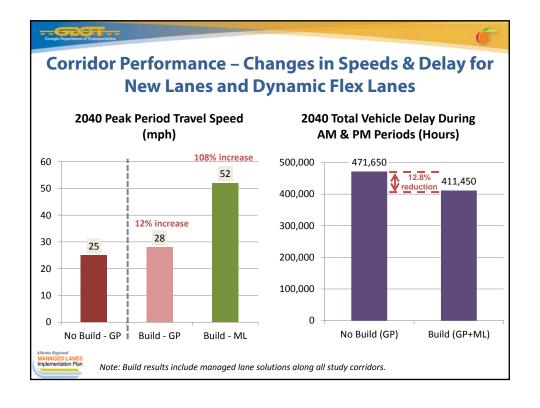
• 1 HOT3+ in each direction

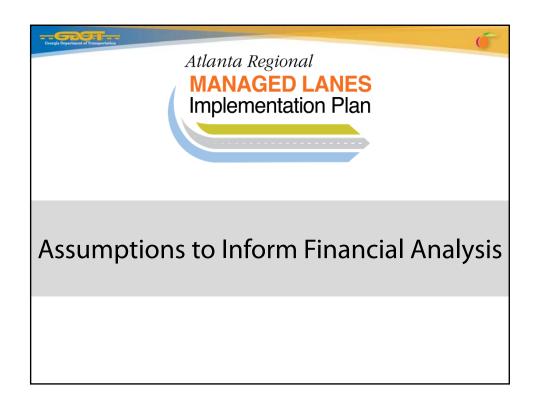
• 1 HO13+ III each direc

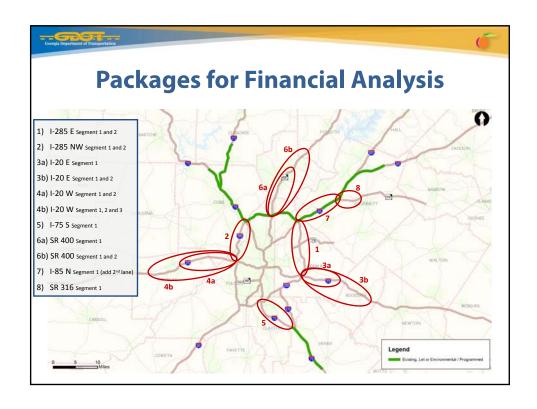
I-285 Top End

• 2 ETL in each direction

MANAGED LANES Implementation Plan





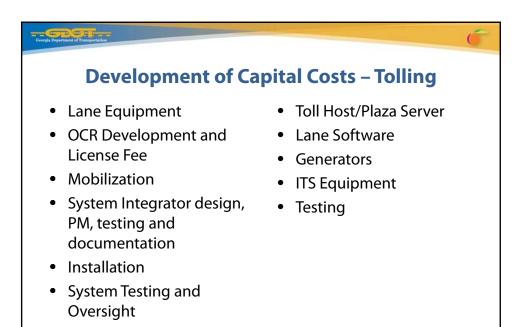


Development of Traffic and Revenue

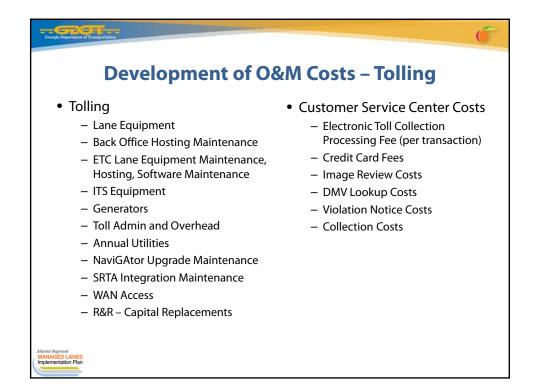
- Willingness-to-pay
 - GDOT's 2007/2010 stated preference survey
 - Mean value of time range \$7 \$15 per hour
- Policies
 - Set toll rates to maximize performance (maintain ~45 mph in managed lane)
 - Therefore, traffic remains fairly consistent in the managed lanes between 2020 and 2040 while the demand for the lane increases over time
 - ETL (except for I-85 N, which was assumed to remain HOT3+)
 - All transit was allowed for free; however, no changes were made to routes or headways
- Revenue Forecasts
 - 2020-2040 revenue interpolated using 2020 and 2040 model results
 - Beyond 2040, 50% revenue growth rate was assumed
 - Ramp-up factors
 - Year 1 (65%); Year 2 (80%); Year 3 (90%); Year 4 (95%)

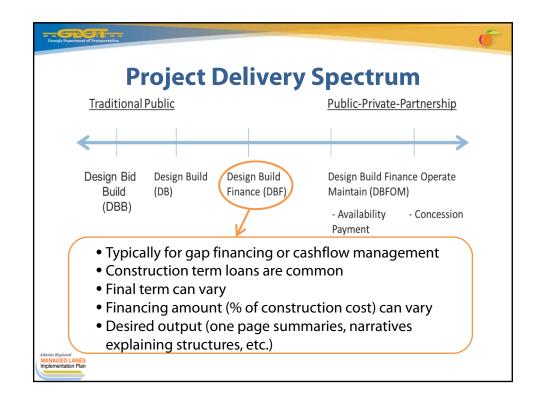


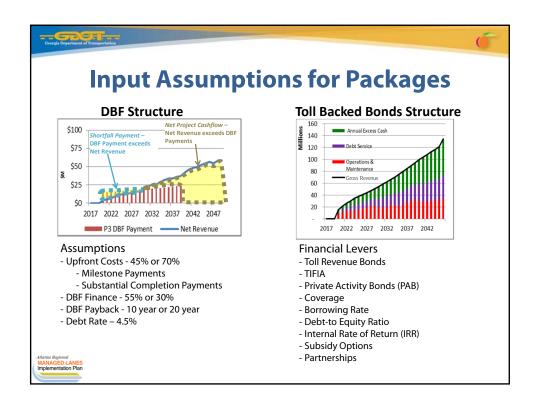
Development of Capital Costs - Roadway • Signing and Marking Items Roadway Items Structural Items Striping Grading Complete - New Bridge Clearing & Grubbing - Bridge Removal Overhead Signs PCC Widening - Bridge Widening Remove Overhead Signs Asphalt Widening - Retaining Walls Retrofit Overhead Signs Asphalt Mill/Overlay - Soundwalls Roadside Signs - Pavement Demo Drainage Items Changeable Warning Signs Concrete Barrier (Type 2) Remove Exist Solid Traffic - Drainage Structures Concrete Median Stripe - Drainage Pipe - Sidewalk - Remove Traffic Markings Paved Ditched/Flume Concrete Curb and Gutter Light Poles (Tolling Safety) - Rip Rap - ROW Light Poles (Large Mast) Traffic Items - ROW Take - Fiber Optic Line Signal Timing - Guard Rail Erosion Control (+ MS4) adjustments - New Intersection Signal • Traffic Control - Traffic Cameras

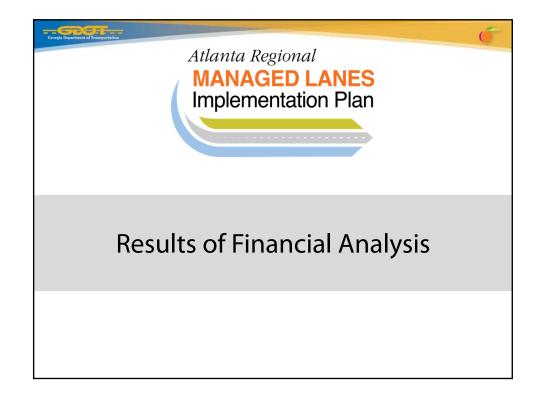


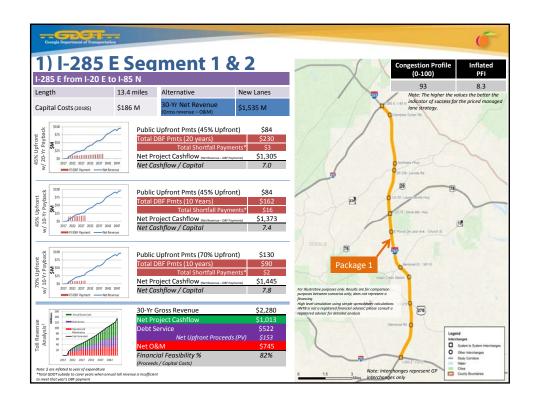


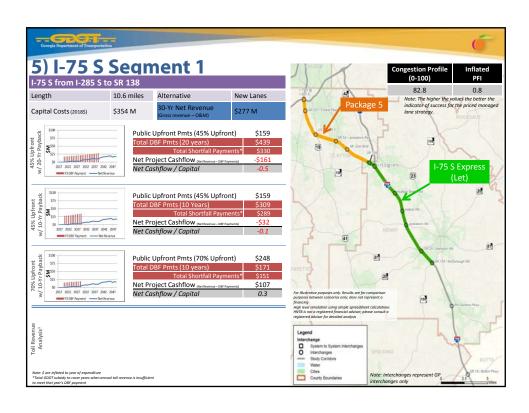




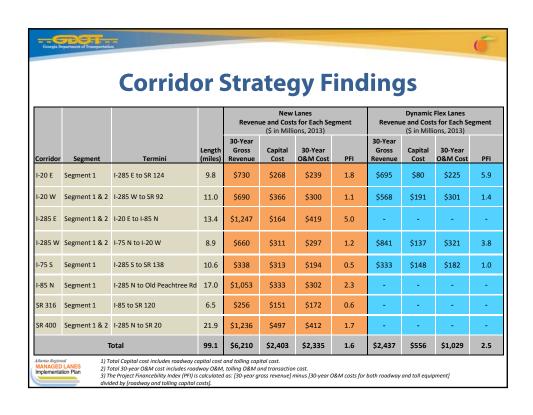




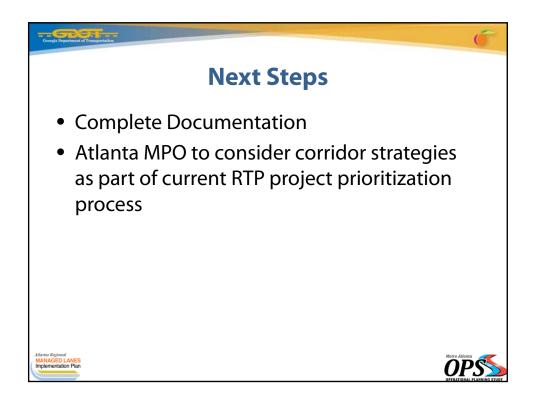


















MLIP & OPS	May 2, 2013, 1 pm
Project Name	Date/Time of Meeting
CID Meeting #1	GDOT
Purpose of Meeting	Location
Cindy VanDyke (GDOT Planning)	Gil Prado (Boulevard CID)
Matthew Fowler (GDOT Planning)	Jim Durrett (Buckhead CID)
Kyle Mote (GDOT Planning)	Brantley Day (Cumberland CID)
Julia Billings (GDOT Planning)	Malaika Rivers (Cumberland CID)
Katrina Lawrence (GDOT Planning)	Joe Allen (Gwinnett Place CID)
Keli Kemp (HNTB)	Chuck Warbington (Gwinnett Village CID)
Jennifer King (HNTB)	Gerald McDowell (Lilburn CID)
Garth Lynch (HNTB)	Dan Hourigan (Midtown Improvement District)
Andrew Smith (HNTB)	Larry Kaiser (Stone Mountain/Airport East and
Keith Strickland (HNTB)	West CIDs)
	Emory Morsberger (Stone Mountain CID)

Attendees

INTRODUCTION:

Kyle Mote began the meeting by welcoming attendees, discussing the purpose of the meeting and providing an explanation for the importance of the Community Improvement Districts' (CIDs') involvement in the Atlanta Regional Managed Lanes Implementation Plan (MLIP) and Atlanta Metro Operational Planning Study (OPS). He then discussed the vision and purpose of the coordinated studies. He discussed the screening process used to identify which bottleneck locations would be addressed within each of the studies (i.e. managed lanes as part of the MLIP and/or operational strategies as part of the OPS). Kyle then provided a more detailed overview of both the MLIP and OPS studies. He also provided examples of some of the operational strategies that the project team is currently evaluating.

To conclude his presentation, Kyle provided instructions for the next portion of the meeting - the breakout groups. Attendees were then separated into 3 breakout groups or stations, based on geographic area of their respective CID. Each group was asked to spend 15-20 minutes describing ongoing transportation projects, as well as areas that they see as bottlenecks. The following describes the comments received.





Station 1 (Inside I-285 and South CIDs):

Buckhead CID

- MetroTech is implementing a Video Capture system to analyze traffic flowing through the CID area
- Initiating plans to transform the SR 400/Lenox Road Interchange into a gateway bridge which will accommodate other modes of transportation (study underway to determine improvements)
- Piedmont Road is being reconfigured south of Peachtree Street to I-85 with 3 lanes southbound, 2 lanes northbound, and a center left turn
- Road diet is being implemented on Peachtree Road from Midtown to Shadowlawn Avenue
- Advocating for signing improvements at I-85/I-285 Interchange
- CID boundaries shown on the maps by the Project Team were obtained from the CID websites.
 Since there were some discrepancies in the CID boundaries, a request was made for the CIDs' to provide a current map showing the boundaries of their respective CID

Boulevard CID

- The Boulevard CID boundaries were not shown correctly (see request above)
- The Boulevard CID was very concerned about the current operation of the I-20/Fulton Industrial Boulevard interchange

Airport West CID (Proposed)

- The group organizing the future Airport West CID was very concerned about the current operation of the I-285/Camp Creek Parkway Interchange
- There has been a significant increase in truck traffic on Camp Creek Parkway with the development of the logistics properties on the south side of Camp Creek Parkway just west of I-285
- The future Airport West CID was in favor of the Project Team evaluating interchange reconfiguration options to improve traffic operations at the I-285/Camp Creek Parkway Interchange

Station 2 (Northeast CIDs):

Gwinnett Place CID

- No big projects except for the diverging diamond interchange (DDI) at I-85/Pleasant Hill Road
- Participants ask why bottlenecks were not shown at I-85 and Hamilton Mill; This is covered by the managed lane screening as this is more of a capacity issue
- A new interchange at I-85 and Gravel Springs Road is programmed
- There is back up during the AM peak period from I-285 to before SR 316





Gwinnett Village CID

- Jimmy Carter DDI and auxiliary lanes are currently under construction
- Studying continuous flow intersection (CFI) at Jimmy Carter Boulevard and Buford Highway
- The back up during the PM peak period is at Jimmy Carter Boulevard and then where the collector-distributor system from Old Peachtree joins back into the mainline
- Big bottleneck in Gwinnett Village is at Jimmy Carter Boulevard and Buford Highway
- Managed Lanes outreach should target where users are (not just along the project limits)

Lilburn CID

- Connection to US 29 is critical, especially connecting this with potential light rail
- US 29 is a huge opportunity as an alternate route for I-85
- Currently working on an access management study for US 29
- I-285 and US 78 is a major bottleneck; consider connections to the transit alternatives being considered through the I-85 Corridor Alternatives Analysis Study
- Indian Trail and Jimmy Carter Boulevard could serve as transit stations

Station 3 (North and Northwest CIDs)

Cumberland CID

- US 41/Cobb Parkway and I-285/I-75 Interchange; movement from US 41 N (and S) for US 41 to I-75N get mixed up in I-285 traffic (weaving from I-285 to I-75 N); difficult merge from SB I-75 to WB I-285; merges into I-285 traffic at 70 mph
- Spring Road EB to SB US 41 to I-285 backing up; not an active project yet as it needs money; US
 41 underneath I-285 could be a DDI (Cumberland CID interchange)
- Curious about I-285 at Paces Ferry; Triple left and then drops; Home Depot corporate campus located there (5,000+ people)
- Atlanta Road at I-285; redoing the entire interchange
- I-75 at Windy Hill Road; interchange reconstruction is a big priority (in concept); in the meantime, looking at entire corridor inside CID and the County; outside CID boundaries includes mostly interchange approaches east and west of I-75 (to Powers Ferry); assembled SPLOST funds
- CID to send GDOT a list of road projects
- Good access to CID except from I-75 South
- Cumberland Interchange (a.k.a. Kennedy Interchange) is an underutilized interchange as there is too much capacity (overbuilt); look at operations, signage, and driver education needs; if going to









head to Cumberland, drivers can get off at Kennedy Interchange and go north or south on US 41 to Cumberland Blvd., however, many drivers are still using I-285

Town Center CID

- I-575 at I-75 backs up
- I-75 at Chastain Road backs up (KSU office park)
- I-75 at Barrett Parkway backs up; current interchange reconfiguration project
- South Barrett reliever underway (in the planning phase)
- I-575 at Chastain Road would like to have an interchange reconfiguration

Perimeter CID

- The Perimeter CID was invited but unable to attend.
- Verify the Perimeter CID boundary

Other Notes:

Airport East and West CIDs

- Camp Creek Parkway Improvement Association Board (which formed the CID) Meeting next Thursday, May 9 at 2:30 pm
- Camp Creek Parkway Interchange is number one priority
- State Economic Development Authority, GDOT, and Hartsfield Airport is interested in using the airport from 8 pm to 6 am for air cargo usage
- Goal of CIDs and ARC is to achieve an "Aerotropolis" concept within the greater airport market area







Community Improvement District (CID) Meeting
Kyle Mote
May 2, 2013



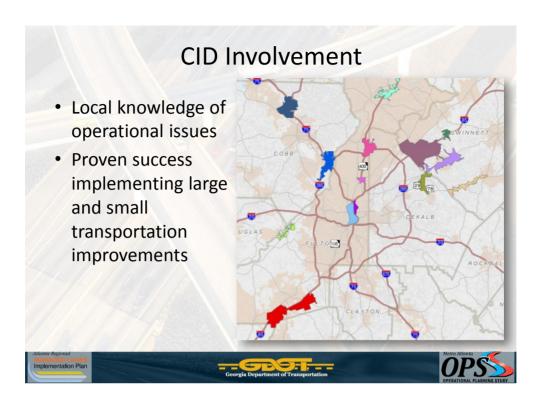
Agenda

- Purpose and Overview
- Corridor Screening Process
- Operational Overview
- Managed Lane Overview
- Breakout Group Discussions
- Recap of Input
- Next Steps









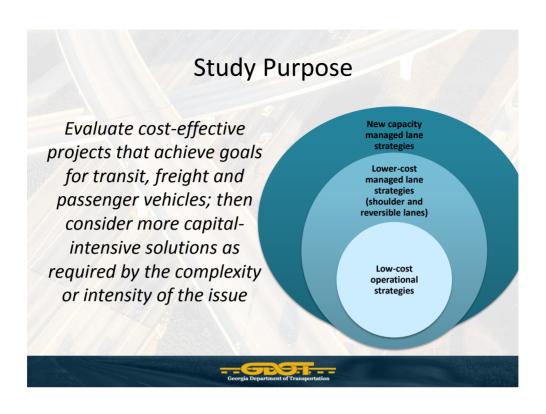
Vision for Transportation

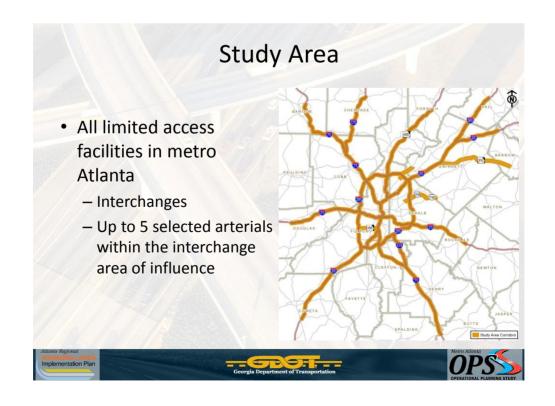
- GDOT's Statewide Strategic Transportation Plan (SSTP)
 points to the importance of improving people mobility
 (via auto and transit) by utilizing "dual purpose"
 investments (such as managed lanes)
- A Strategic Goal of the Governor's for the State is to "improve the movement of people and goods across and within the state"

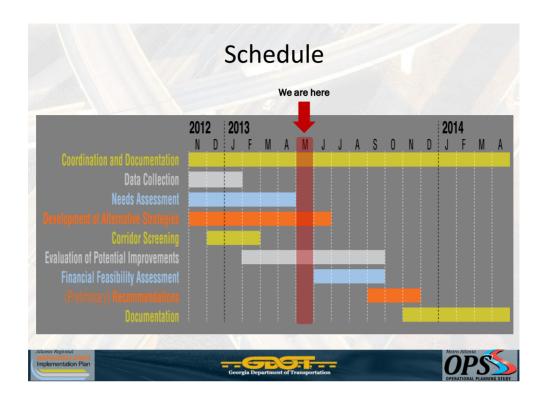












Status

- Completed:
 - Completed initial windshield survey and directional split analysis
 - Post-processed speed and volume data
 - Determined capacity and bottleneck needs
 - Completed corridor screening process
 - Developed managed lane candidate strategies for evaluation
- Current Activities:
 - Developing operational strategies for evaluation



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 - OPS

- Smaller scale operational improvements
- Focused on limited access highways in Metro Atlanta
- Can be implemented within 6 months to 5 years
- "Bang for your buck"/Return on your investment



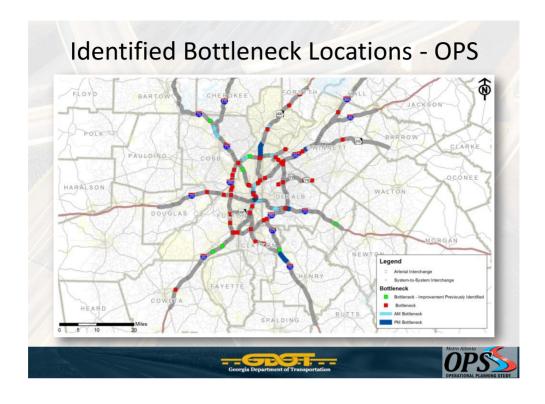


Overview - OPS

- Identify bottleneck areas along limited access highways
- Identify and evaluate potential low-cost improvements
- Document a prioritized list of operational projects
- Incorporate preliminary recommendations into RTP and TIP update, as appropriate during 2013-2014







Causes of Bottlenecks - OPS

- High volumes
- Weaving
- Lane drops/additions
- Last minute decision making
- Lack of storage space at ramp terminals and/or high turn volumes
- Tight turning radii and/or steep grade on ramps
- Frontage road access
- Limited access facility terminates at signalized intersection
- Suspected drainage issues





Potential Strategies - OPS

- Roadway Geometrics
- Intelligent Transportation Systems (ITS)
- Freight
- Demand Management & Policy Considerations





Potential Strategies - OPS

- 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 - OPS

- 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 - OPS

- Freight
 - Commercial Vehicle Geometric Accommodations
 - Truck Lane Restrictions
- Demand Management & Policy Considerations
 - Demand Management Strategies (i.e. reduction in single occupancy vehicle trips)
 - Variable / Dynamic Ramp Closures
 - Vehicle Eligibility / Occupancy







Planning Assumptions - MLIP

- Update to 2009 Managed Lane System Plan
- All new capacity will likely be tolled
- Remove HOV2+ to HOT3+ conversions from TIP
- Eliminate assumptions of long-term concession agreements





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 <u>Implementation</u> 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 2013-2014

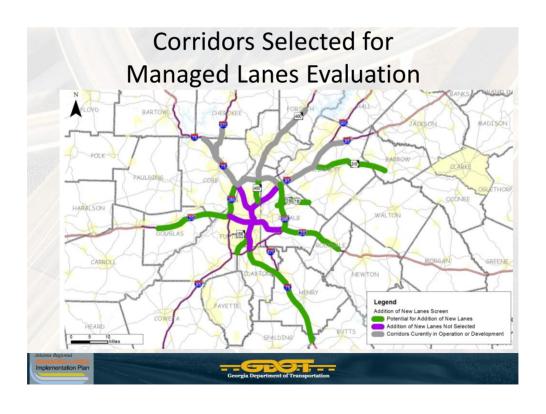


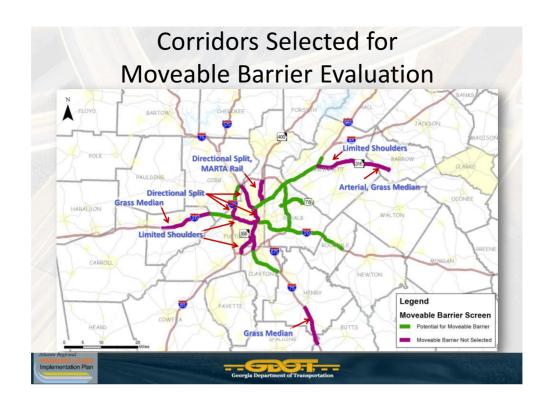






Potential Strategies - MLIP • Managed Lanes —New Capacity —Reversible Lanes (ex. moveable barriers) —Drivable / Hard Shoulder Running









Break-Out Group Instructions

- Purpose of Break-Out Group
 - Share an example of an operational strategy being considered for evaluation
 - Discuss bottleneck locations
 - Discuss any other transportation improvements identified by CID
- Instructions
 - Move to your assigned station (based on geography of CIDs)
 - Upon conclusion each facilitator will report back discussion highlights







Breakout Group Activities GROUP AGENCY Atlanta Downtown Improvement District Buckhead CID Midtown Improvement District **Boulevard CID** South Fulton CID Braselton Lifepath CID **Gwinnett Place CID** 2 Gwinnett Village CID Evermore CID Lilburn CID Stone Mountain CID **Cumberland CID** Town Center CID North Fulton CID **Perimeter CIDs**







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Kyle Mote, GDOT Project Manager

(404) 631-1987 kmote@dot.ga.gov













MLIP & OPS

September 16, 2013, 10 a.m.

Project Name

Date/Time of Meeting

Community Improvement District Meeting #2

GDOT

Purpose of Meeting

Location

Matthew Fowler (GDOT Planning) Kyle Mote (GDOT Planning)

Julia Billings (GDOT Planning)

Katrina Lawrence (GDOT Planning)

Keli Kemp (HNTB) Garth Lynch (HNTB) Cara Hodgson (HNTB) Joe Allen (Gwinnett Place CID) Jim Brooks (Evermore CID)

Dan Hourigan (Midtown Improvement District) Larry Kaiser (Stone Mountain and Airport West

CIDs)

Alyssa Sinclair (Gwinnett Village CID) Jeff Woodward (Cumberland CID)

Vinay Uchil (Cumberland CID)

Josh Rowan (Cumberland CID)

Brian McHugh (Buckhead CID)

Attendees

INTRODUCTION:

Kyle Mote welcomed attendees to the meeting and explained that this 2nd Community Improvement District (CID) meeting will provide an update on the OPS and MLIP studies and ask for participants' feedback on the project prioritization structure currently under development. The presentation started with a high-level recap of the MLIP and OPS work that had been presented in the May meeting. Kyle then led into a status update, beginning with OPS. He reviewed the objectives of the study, explained how the CIDs' input had been incorporated into the study and reviewed the system-wide and location-specific operations strategies under consideration. He also provided examples of the interchange reconfiguration strategies being studied.

Kyle then reviewed how the national (MAP-21), state (Governor's Strategic Goals), and region/local (Plan2040 RTP, SSTP, and MLSP/MLIP) goals had been incorporated into developing the OPS and MLIP project prioritization structures. The CID participants then learned about the project prioritization goals for the OPS initiative. At that point, the CID representatives were asked to participate in a weighting exercise and learned that their weighting would be incorporated into the overall project prioritization evaluation.

Each representative was given 12 sticky dots to place on the 6 OPS themes they felt were most important as part of the prioritization review. Keli Kemp moderated the group discussion. Kyle, Keli Kemp and Garth Lynch answered questions.

Each group spent several minutes placing dots on the boards. Keli reported back that "Connectivity/Economic Growth" was a clear priority for the group, followed closely behind by "People Mobility."

Kyle then resumed the presentation reviewing the MLIP strategies and corresponding project prioritization table. Following that overview, the CID representatives were given 10 sticky dots to place on the 5 MLIP themes that they felt deserved the highest weighting. Keli once again led the group discussions. Kyle, Keli and Garth answered questions. "Connectivity/Economic Growth" received the highest weighting during the MLIP Prioritization exercise.







The following list outlines the comments received during the meeting:

COMMENTS

- It was asked if and when the project list will be ready. Kyle explained that preliminary project recommendations will be presented at the next meeting following implementation of the project prioritization process discussed during this meeting.
- It was asked what roads are included in the study and if they are only state routes. Matthew
 Fowler explained that the project team is looking at limited access facilities, as well as roads
 feeding into state roads.
- Safety is very important and impacts reliability. If there is an accident on I-285 at GA 400, it really shuts things down. There needs to be better accident response times.
- It was asked what is the order of magnitude of the cost for the OPS strategies. Garth provided information on the range of cost estimates for the proposed OPS strategies which range as low as \$100,000 to as much as \$10m+. The Atlanta MPO Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) were also discussed.
- Road widening solutions were discussed. Kyle explained that this typically doesn't have public support.
- It was asked what was incorporated into defining the 45-minute threshold for access to employment centers? Is this the ARC's definition? Matthew explained that the 45-minute access to an employment center was a part of the Statewide Strategic Transportation Plan (SSTP). It was arrived at as part of the State's outreach to the business community. The business community said that this window was a critical consideration when deciding where to locate their facilities.

Kyle concluded the meeting by reviewing the next steps for both studies. The next and last CID meeting is planned for the winter. The project team will share preliminary recommendations for the OPS and MLIP studies during this last meeting.







Community Improvement District (CID)

Meeting #2

September 16, 2013



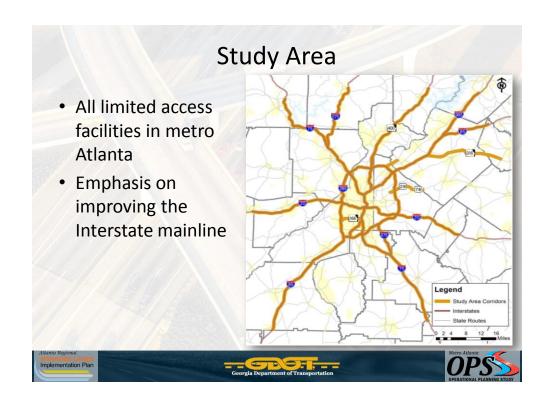
Agenda

- OPS
 - Recap
 - Participant Feedback
 - OPS Project Prioritization Structure
 - OPS Break-Out Session #1
- MLIP
 - Recap
 - Managed Lane Strategies
 - MLIP Project Prioritization Structure
 - MLIP Break-Out Session #2
- Next Steps and Q&A













Objectives of OPS

- Identify bottleneck areas
- Identify and evaluate potential low-cost improvements that can be implemented within 6 months to 5 years
- Document a prioritized list of operational projects





Incorporating Your Feedback

- Thank you for partnering with us and providing valuable input that has contributed to refining these strategy evaluations
- Actions we've taken based on your feedback:
 - ✓ Placed emphasis on ramp meters / transit vehicle preemption in the strategy evaluation
 - ✓ Incorporated bottleneck locations based on recommendations from GRTA bus drivers, HERO unit operators, GDOT's Traffic Management Center, CIDs and Atlanta MPO staff





System-wide OPS Strategies for Consideration

- 1) Expand ITS support infrastructure to include all limited access facilities
- Advanced queue warning signs at shoulder / moveable barrier locations
- Variable speed limits on limited access facilities with priority at shoulder / moveable barrier locations
- Dynamically change shoulder usage times based on congestion





System-wide OPS Strategies for Consideration

- 5) Upgrade technology for CCTV cameras / traffic flow monitoring
- 6) Provide adequate crash investigation sites where shoulders are used
- 7) Modify ramp meters to permit 2 cars per green
- 8) Quick response incident clearance across the region
- 9) Expand number of HERO units if needed
- 10) Modify truck lane restrictions





Types of *Location-Specific* Strategies for Consideration

- Variable / dynamic ramp closures (closed to all vehicles v. closed to unauthorized vehicles)
- 2) Auxiliary lanes (new or using shoulder)
- 3) Collector / distributor roads
- 4) Modifications to frontage road access
- 5) Channelization
- 6) Re-striping
- 7) Interchange reconfigurations (Diverging Diamond Interchanges, etc.)





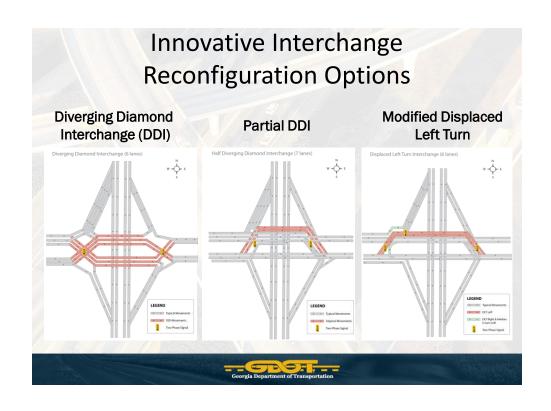
Types of *Location-Specific* Strategies for Consideration

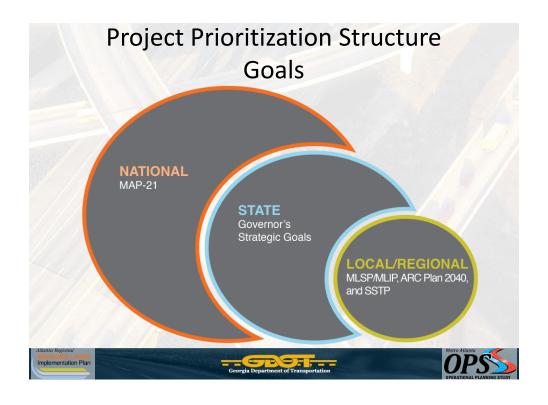
- 8) Turning prohibitions
- 9) Additional ramp meters
- 10) Modify existing ramp meter operations
- 11) Modify ramp geometrics, with a focus to better accommodate trucks
- 12) Automated truck rollover warning systems
- 13) Ramp meter bypass lanes for transit and vanpools















	OP	S Proje	ect Pri	oritiza	tion St	ructur	e
		Transportation mobility	Financial feasibility	Safety	System connectivity & economic growth	System preservation & environmental sustainability	Project support and readiness
				١			Å
NATIONAL	MAP 21	Goals 3 & 4	-	Goal 1	Goals 3 & 5	Goal 6	Goal 7
STATE	Governor's Strategic Goals	Goal 1	Goal 1	Goal 4	Goal 2	-	-
LOCAL/REGIONAL	ARC Plan2040 RTP Goals	Goal 3	Assumed*	Goal 2	Goal 1	Goal 1	Assumed*
LOCAL/R	SSTP**	Goals 1, 2, 3 & 4	-	Goal 7	Goals 3 & 8	-	-
						of the MPO TIP and R ortation Plan (SSTP) i	

		itization Structure	
No.	Themes	Performance Measures	
1	Transportation mobility	Vehicle throughput	
		Changes in travel speeds or travel time savings	
		Reduction of vehicle delay	
		Facilitation of transit options	
2	Financial feasibility	Cost	
-	· manoiar reasionicy	Benefit/cost ratio	
3	Safety	Anticipated reduction of crashes	
3	Salety	Anticipated reduction of incident response time	
4	Connectivity and	Facilitation of current major freight movement	
	economic growth	Connectivity to current major employment centers	
_	System preservation and	System preservation	
5	environmental sustainability	Level of environmental impacts	
6	David at a second and described	Project readiness	
	Project support and readiness	General constructability and schedule	

Group Discussion Instructions

- Purpose of Group Discussion
 - Discuss and receive input on the project prioritization structure
 - Which themes are most important to you in evaluating these strategies?
- Instructions
 - One group discussion
 - Participants will be asked to weight the prioritization themes by placing dots on each table







Objectives of MLIP

- Update MLSP as part of Managed Lanes Implementation Plan
- Evaluate new lanes, as well as lower cost priced managed lane solutions, such as shoulder lanes and movable barriers
- Incorporate preliminary recommendations, as appropriate and available, into RTP and TIP in the Fall of 2013; MLIP will wrap up in the Spring of 2014 with final recommendations





MLIP Status Update

System-Level Model Traffic & Revenue Analysis

- New lane
- Priced shoulder lane
- Moveable barrier lane

Initiated cost estimates (roadway and tolling)

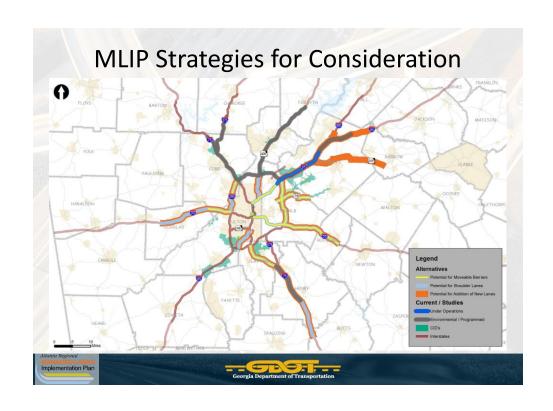
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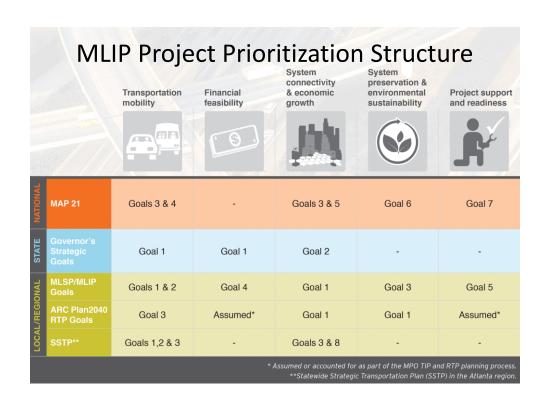


Existing Condition Existi









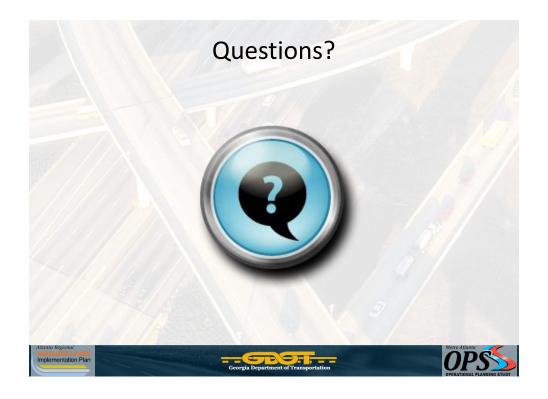
No.	Themes	Performance Measures
1	Transportation mobility	Vehicle throughput and person throughput
		Changes in travel speeds or travel time savings
		Corridor reduction of vehicle delay
		Facilitation of transit options
2	Financial feasibility	Revenue/mile
		Cost/mile
		Project financing index (PFI)
3	System connectivity and economic growth	Managed lane system connectivity
		Connectivity to major employment centers
		Jobs accessed within 45 minutes of travel by car or transit
4	System preservation and	System preservation
	environmental	Flexible lane management
	sustainability	Level of environmental impacts
	Project support and readiness	Project readiness
5		General constructability and schedule
	readiness	Compatibility with regional plans



Next Steps

- Complete evaluation of MLIP and OPS projects based on refined project prioritization structure
- Conduct Final CID Meeting (#3)
 - Share preliminary recommendations
 - Winter 2013/2014
- Develop financial plan for managed lane projects
- Complete documentation and corridor profiles
- Continue coordinating with ARC on PLAN2040 RTP Update throughout the process









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www.dot.ga.gov\OPS

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Technical Coordinating Committee Atlanta MPO

Kyle Mote GDOT Office of Planning June 21, 2013



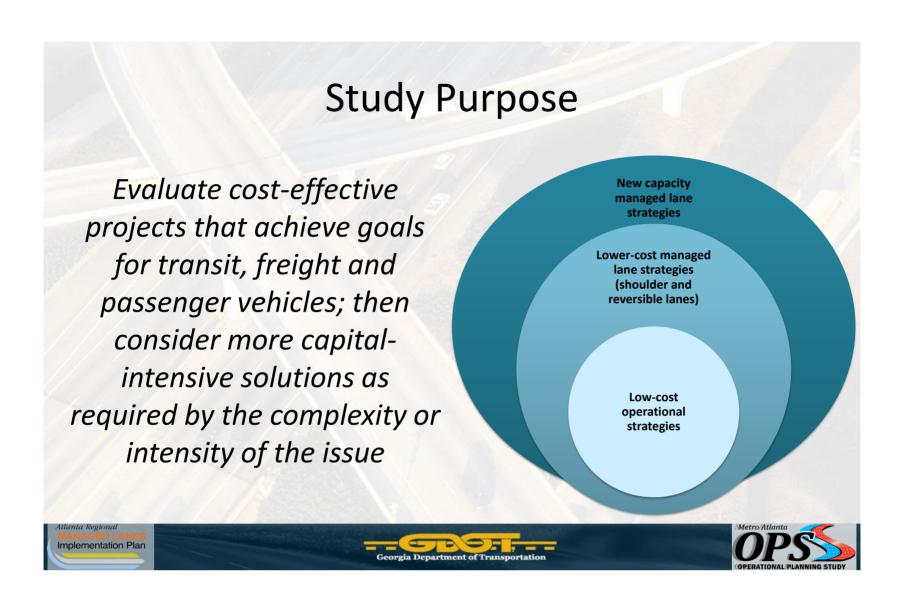
Vision for Transportation

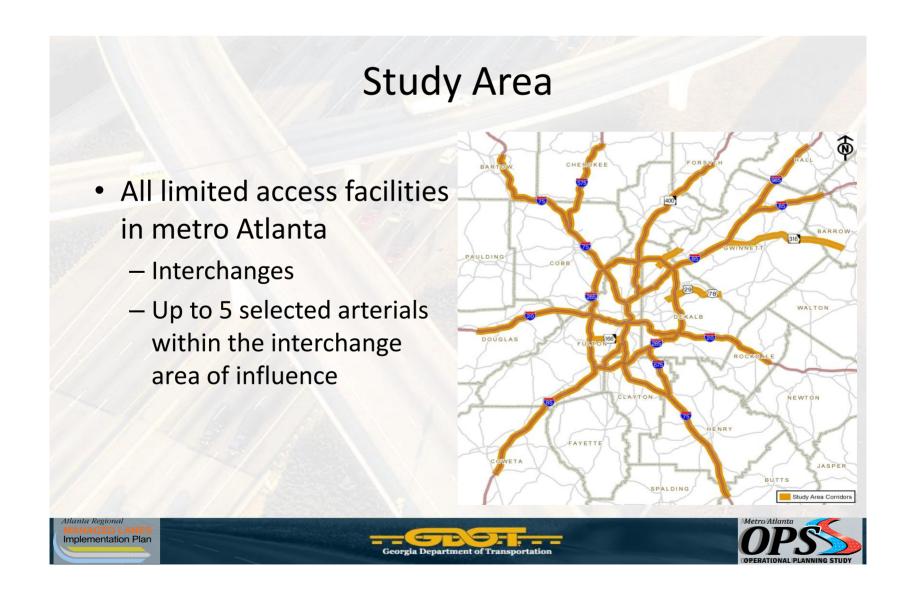
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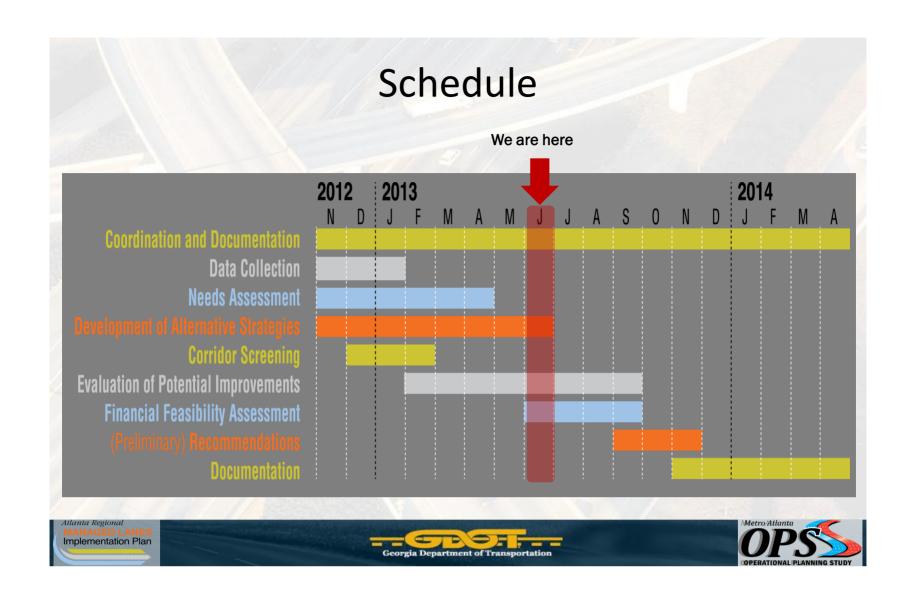








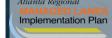






Planning Assumptions

- All limited access highway new capacity in Metro Atlanta will likely be tolled
- Remove HOV2+ to HOT3+ conversions from MPO TIP
- Eliminate assumptions of long-term concession agreements
- Evaluate lower-cost managed lane treatments

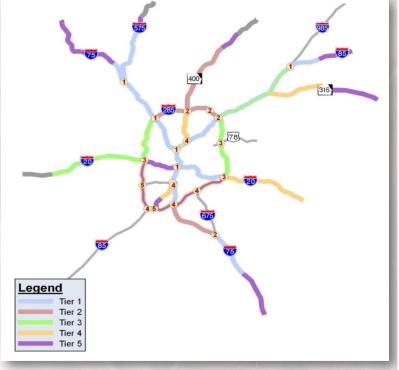






Overview - MLIP

- 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









Managed Lane Implementation Plan (MLIP) Overview

- Updating MLSP as part of Managed Lanes <u>Implementation</u> 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 recommendations into RTP and TIP update, as appropriate during 2013-2014



Innovations and Emerging Findings-MLIP

- Considering non-traditional Managed Lane solutions
 - Reversible lanes
 - Moveable barrier (new option)
 - Fixed barrier (existing option)
 - Shoulder lanes
 - Consider managing inside lane in peak periods and off-setting the removed general purpose capacity with travel on shoulder
 - Option: use reversible barrier and shoulder lanes in conjunction with each other
- Intent is to not "reduce" current travel options for motorists

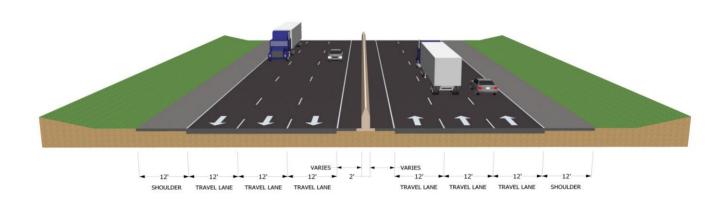






Shoulder Lanes – Typical Section BEFORE

Existing Condition



Source: Atlanta Regional Managed Lanes Implementation Plan, GDOT.

Atlanta Regional Managed Lanes Implementation Plan

Metro Atlanta

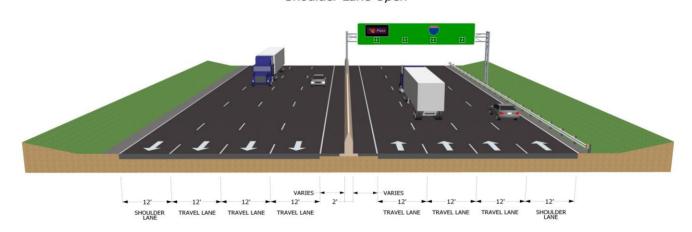
Metro Atlanta

OPS

Georgia Department of Transportation

Shoulder Lanes – Typical Section AFTER

Shoulder Lane Open



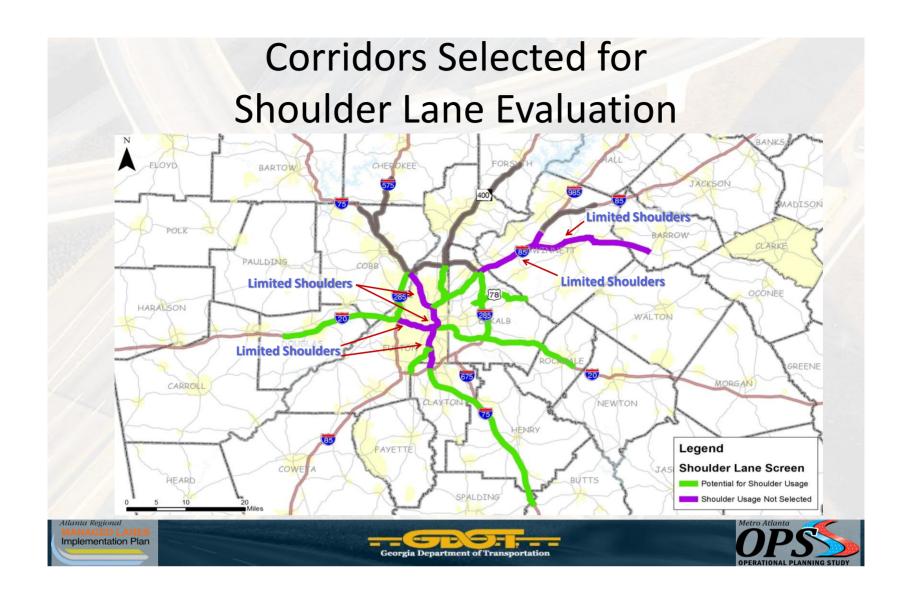
Source: Atlanta Regional Managed Lanes Implementation Plan, GDOT.

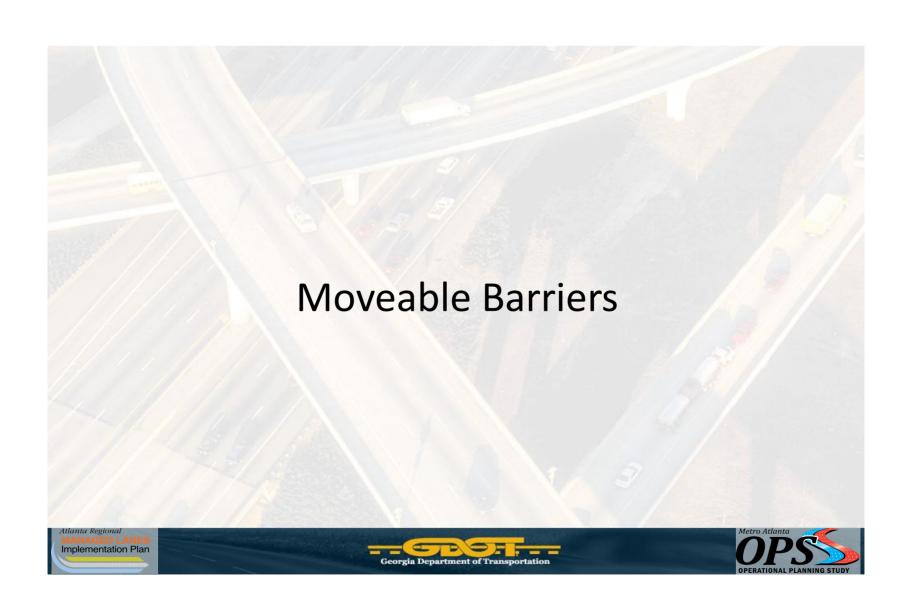
Atlanta Regional Managed Lanes Implementation Plan, GDOT.

Metro Atlanta Regional Managed Lanes Implementation Plan, GDOT.

Georgia Department of Transportation

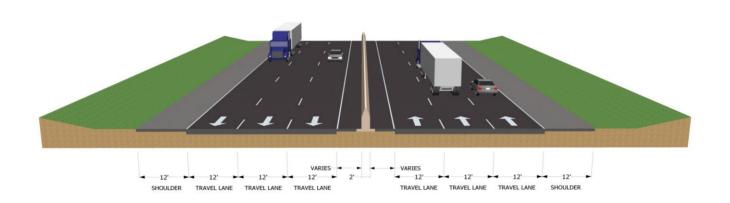
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Moveable Barriers - Typical Section BEFORE

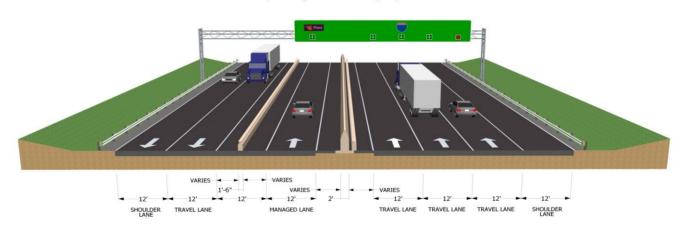
Existing Condition



Source: Atlanta Regional Managed Lanes Implementation Plan, GDOT. Atlanta Regional Managed Lanes Implementation Plan, GDOT. Metro Atlanta Regional Managed Lanes Implementation Plan, GDOT. Georgia Department of Transportation OPERATIONAL PLANNING STUDY

Moveable Barriers – Typical Section AFTER

Moveable Barrier (including shoulder usage) Departing Vehicle Deployment



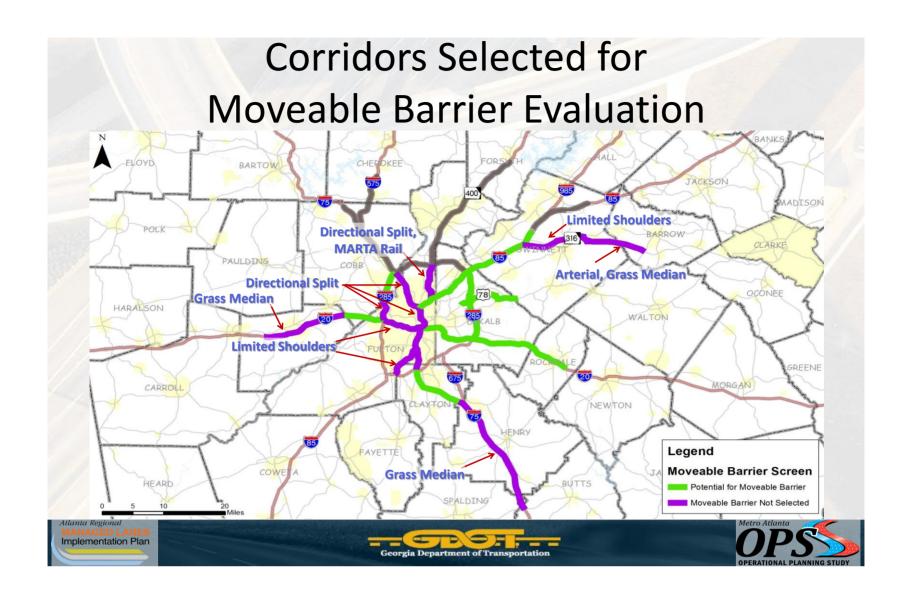
Source: Atlanta Regional Managed Lanes Implementation Plan, GDOT.

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Metro Atlanta Regional Managed Lanes Implementation Plan, GDOT.

Georgia Department of Transportation

OPESSION OPERATIONAL PLANNING STUDY





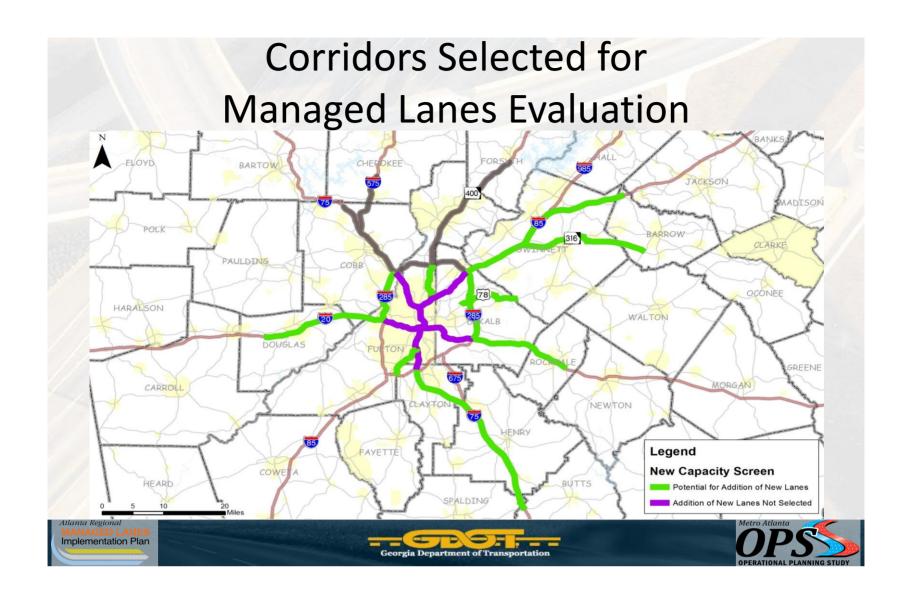
Georgia Priced Managed Lane Overview

- High Occupancy Toll (HOT)
 - Mixture of occupancy and tolling components
 - 17 currently in operation across US, including 1 in Georgia (I-85 North)
 - Relatively easy to convert HOV lanes to HOT (need public support)
 - Requires additional enforcement/back office operations
 - Transit buses have free access
- Express Toll Lanes (ETL)
 - All users pay (except transit buses)
 - 1 currently in operation in US (SR 91, CA), 2 planned in Georgia (I-75 South & I-75/I-575 North)
 - Easier to enforce/back office operations, when compared to HOT



Priced Managed Lanes

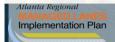






Next Steps

- · Evaluate potential improvements in each corridor
 - Planning level traffic and toll revenue analysis
 - Detailed traffic assessment
- Financial feasibility assessment
 - Preliminary capital and O&M cost estimates
 - High level project financing plan
- Develop and apply project prioritization framework
- Final recommendations and documentation









Planning Assumptions - OPS

- Smaller scale operational improvements
- Focused on limited access highways in Metro Atlanta
- Can be implemented within 6 months to 5 years
- "Bang for your buck"/Return on your investment







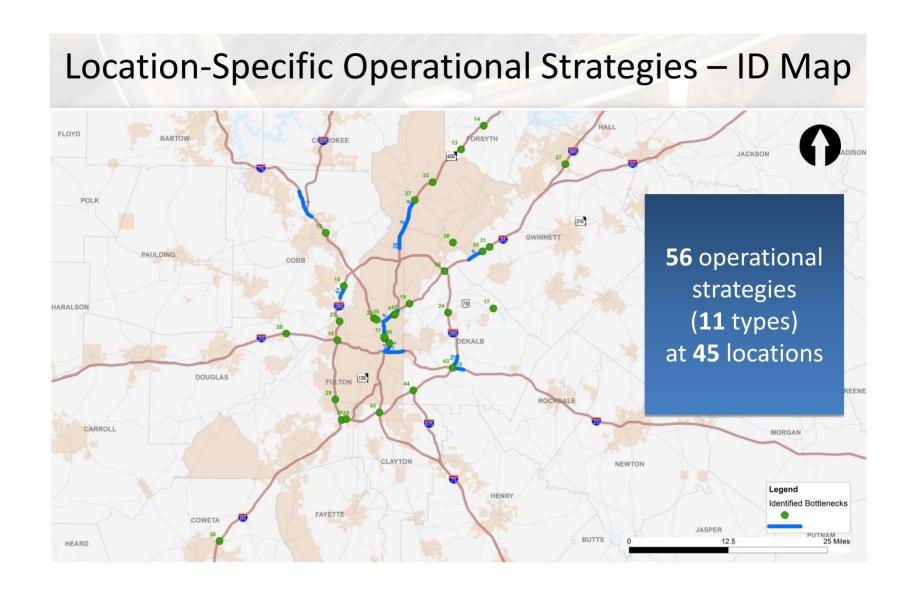
Overview - OPS

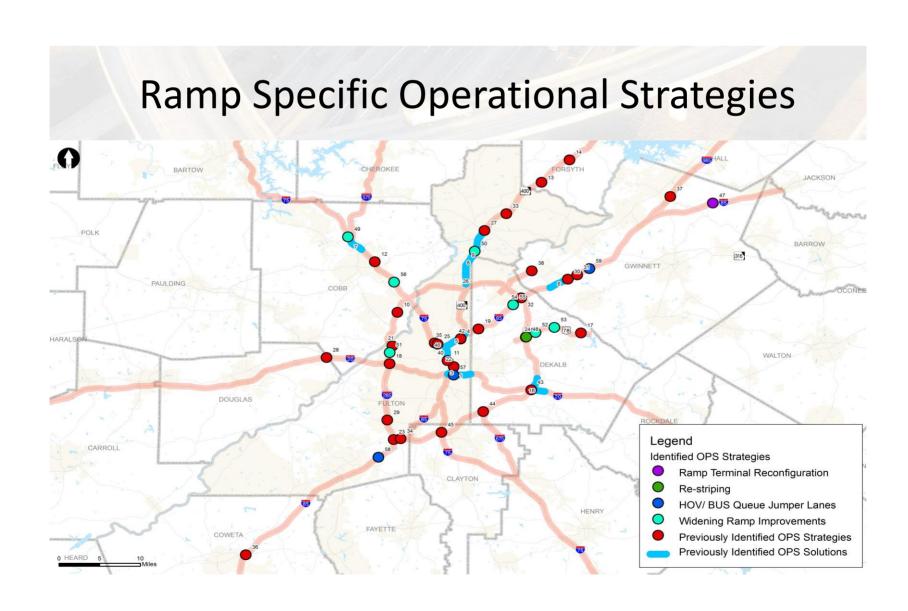
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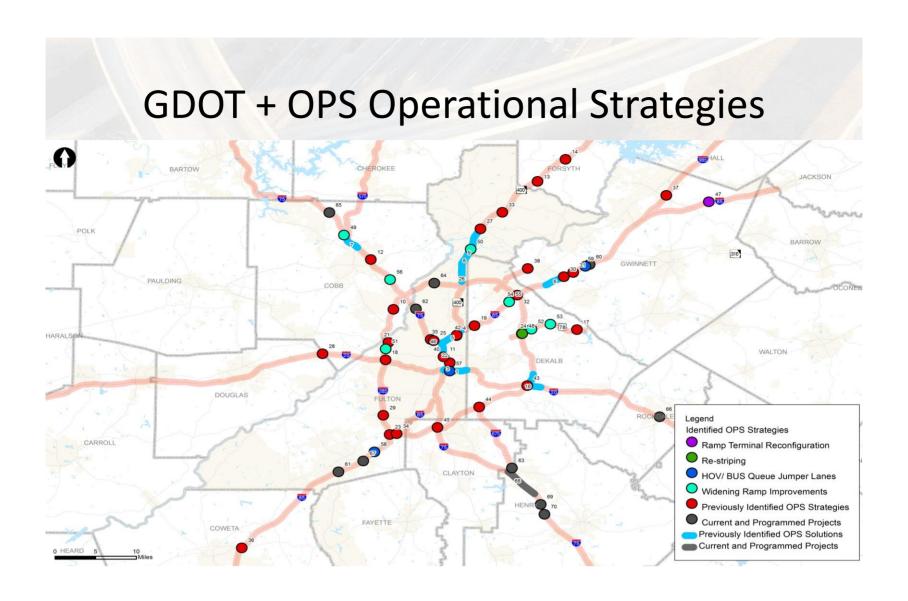






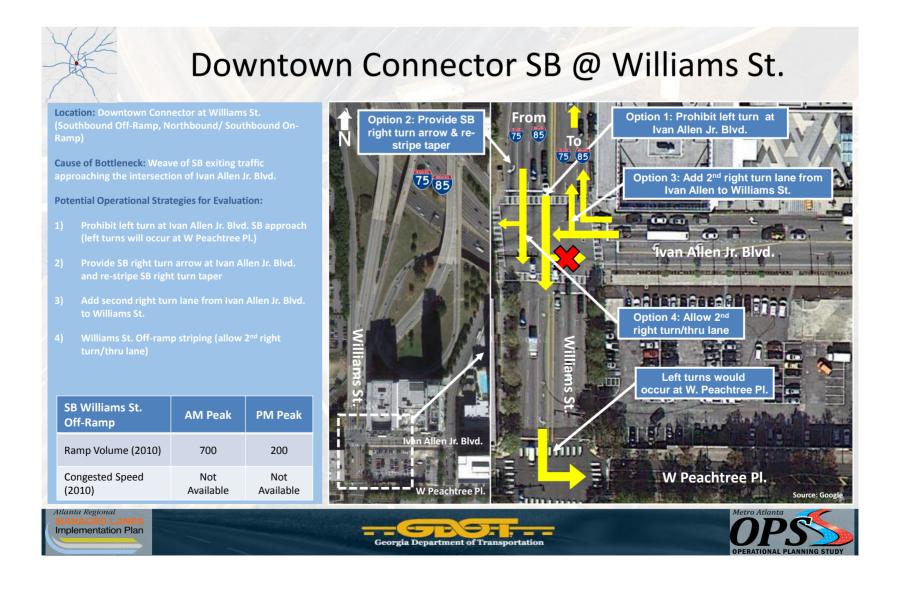










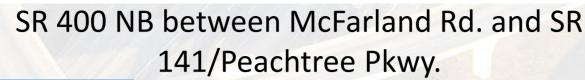












Location: SR 400 between McFarland Rd. and SR 141/Peachtree Pkwv. (3.4 miles)

Cause of Bottleneck: Two NB general purpose (GP) lanes drop and merge at McFarland Rd. (Exit 12) on GA 400.

Recently completed GDOT project extending one NB GP lane north of McFarland Rd. interchange (now merges 4 to 3 to 2 lanes)

Potential Operational Strategies for Evaluation:

 Use shoulder as an auxiliary lane between McFarland Rd. and Peachtree Pkwy.

Note: Consider bridge impacts on shoulder

GA 400 NB @ McFarland Rd.	AM Peak	PM Peak
Volume (2010)	1,200	1,900
Congested Speed (2010)	> 45 mph	35 – 45 mph

















I-85 N@ I-285 Interchange

Location: I-85 N at I-285 Interchange

Cause of Bottleneck: High volumes - SB AM/NB PM

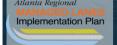
Potential Operational Strategies for Evaluation:

 Construct flyover for I-285 EB to I-85 NB that would provide access to Northcrest Rd. (eliminates the ability to exit on C/D and then get back on I-85 at Northcrest); and

2) Add barrier separating exit ramps from I-85 on-ramp

	Northcrest Rd. Off- Ramp	AM Peak	PM Peak
	Ramp Volume (2010)	Not Available	Not Available
	Additional Data C Congested Speed (2010)	Ollection Un Not Available	derway Not Available
1	Ramp	AM Peak	PM Peak
ı	Ramp Volume (2010)	Not Available	Not Available
	Congested Speed (2010)	Not Available	Not Available
١			
١	Volume (2010)	3,400	8,600
١	Congested Speed (2010)	> 45	< 25













Overlapping Goals (Cont'd)

National - MAP-21

- 1. Safety
- 2. Infrastructure condition
- 3. Congestion reduction
- 4. System reliability
- 5. Freight movement and economic vitality
- 6. Environmental sustainability
- Reduced project delivery delays

State - Governor's Strategic Goals

- Mobile: Transporting people and products by improving the movement of people and goods across and within the state, expanding GA's role as a major logistics hub for global commerce, and leveraging public-private partnerships and improve intergovernmental cooperation for successful infrastructure development.
- 2. Growing: Creating jobs and growing businesses
- 3. Healthy: Accessible care and active lifestyles
- Safe: Protecting the public's safety and security by reducing injury and loss of life on GA's roads





Overlapping Goals (Cont'd)

Local/Regional Goals MLSP/MLIP

- 1. Protect mobility
- 2. Maximize person/vehicle throughput
- 3. Minimize environmental impacts
- 4. Provide a financially feasible system
- Design and maintain a flexible infrastructure for varying lane management

Local/Regional Goals
ARC Plan2040 RTP

- 1. Lead as the global gateway to the South
- 2. Encourage healthy communities
- 3. Expand access to community resources





Preliminary MLIP Project Prioritization Framework

		National	State	Local/Re	gional
			Governor's	MLSP/MLIP	ARC Plan2040
No.	Prioritization Theme	MAP-21	Strategic Goals	Goals	RTP Goals
1	Transportation mobility	Goals 3 & 4	Goal 1	Goals 1 & 2	Goal 3
2	Financial feasibility			Goal 4	Assumed*
3	System connectivity and economic growth	Goals 3 & 5	Goal 2	Goal 1	Goal 1
4	System preservation and environmental sustainability	Goal 6		Goal 3	Goal 1
5	Project support and readiness	Goal 7		Goal 5	Assumed*

^{*} Assumed or accounted for as part of the MPO TIP and RTP planning process.



Preliminary MLIP Project Prioritization Framework (Cont'd)

Vo.	Themes	Performance Measures
		Vehicle throughput and person throughput
1	Transportation mobility	Changes in travel speeds and travel time savings
		Corridor reduction of vehicle delay
		Revenue/mile
2	Financial feasibility	Cost/mile
		Project financing index (PFI)
		System connectivity
3	System connectivity and economic growth	Connecting to major employment centers
	B. C. T. C.	Jobs accessed within 45 minutes of travel
		System preservation
4 '	System preservation and environmental sustainability	Flexible lane management
	sustainability	Level of environmental impacts
		Project readiness
5	Project Support and Readiness	General constructability and schedule
		Compatibility with regional plans

Allante Regional

MANAGERI ANES
Implementation Plan

Georgia Department of Transportation

ARC RTP System-wide Performance Measures

- 1. Annual fatalities on the transportation network
- 2. Percent of system adequately maintained
- 3. Percent of reliable peak period trips within 45 minutes by car
- 4. Percent of reliable peak period trips within 45 minutes by transit (rail and bus)
- 5. Recurring congestion costs in terms of wasted time and fuel
- 6. Incident response time in metro Atlanta
- 7. Truck delay measures



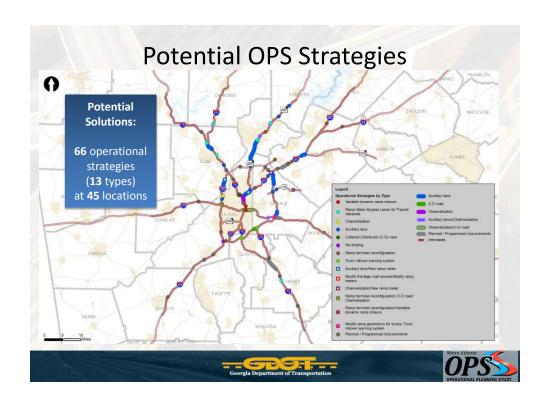
Next Steps

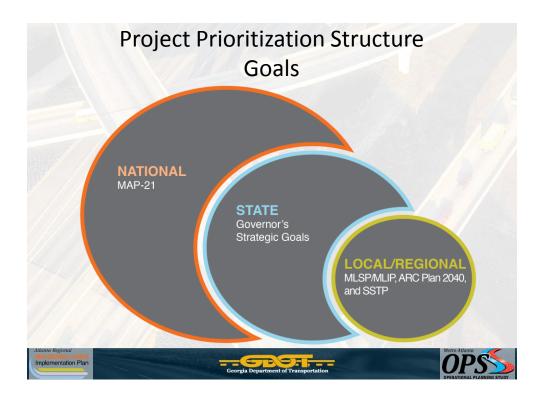
- · Establish preliminary weighting
- · Coordinate with:
 - GDOT upper management
 - ARC staff
 - Stakeholder Committee
 - TCC Subcommittees
- Develop methodologies and tools to calculate measures and rank projects by theme
- Calculate measures and rank projects
- Discuss preliminary findings











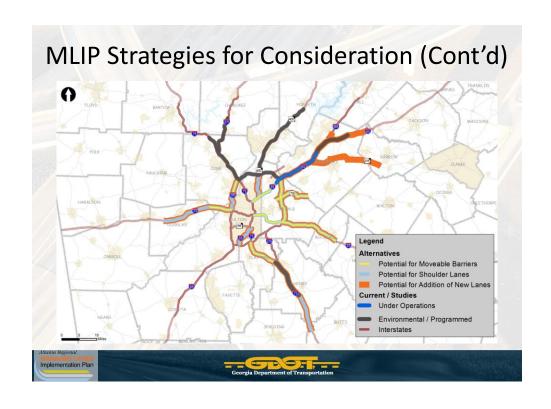


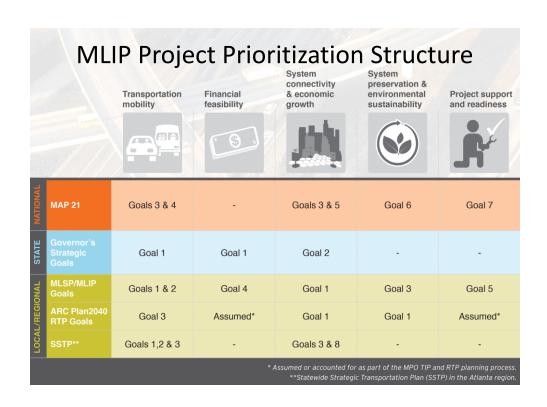


	OP	S Proje	ect Pri	oritiza	tion St	ructur	e
		Transportation mobility	Financial feasibility	Safety	System connectivity & economic growth	System preservation & environmental sustainability	Project support and readiness
				5			ß
NATIONAL	MAP 21	Goals 3 & 4	-	Goal 1	Goals 3 & 5	Goal 6	Goal 7
STATE	Governor's Strategic Goals	Goal 1	Goal 1	Goal 4	Goal 2	-	-
LOCAL/REGIONAL	ARC Plan2040 RTP Goals	Goal 3	Assumed*	Goal 2	Goal 1	Goal 1	Assumed*
LOCAL/R	SSTP**	Goals 1, 2, 3 & 4	-	Goal 7	Goals 3 & 8	-	-
						of the MPO TIP and R ortation Plan (SSTP) i	

	TOJECT I HOI	itization Structure
No.	Themes	Performance Measures
	Transportation mobility	Vehicle throughput
1		Changes in travel speeds or travel time savings
•		Reduction of vehicle delay
		Facilitation of transit options
2	Financial fossibility	Cost
2	Financial feasibility	Benefit/cost ratio
3	Safety	Anticipated reduction of crashes
3		Anticipated reduction of incident response time
	Connectivity and	Facilitation of current major freight movement
4	economic growth	Connectivity to current major employment centers
	System preservation and	System preservation
5	environmental sustainability	Level of environmental impacts
_	Desired and and are !!	Project readiness
6 Pro	Project support and readiness	General constructability and schedule







		ritization Structure
No.	Themes	Performance Measures
	Transportation mobility	Vehicle throughput and person throughput
1		Changes in travel speeds or travel time savings
•		Corridor reduction of vehicle delay
		Facilitation of transit options
	Financial feasibility	Revenue/mile
2		Cost/mile
		Project financing index (PFI)
3	System connectivity and economic growth	Managed lane system connectivity
		Connectivity to major employment centers
		Jobs accessed within 45 minutes of travel by car or transit
	System preservation and	System preservation
4	environmental	Flexible lane management
	sustainability	Level of environmental impacts
	Project support and readiness	Project readiness
5		General constructability and schedule
		Compatibility with regional plans