I. Call to Order – Andy Macke, Chair

II. Approval of the Meeting Minutes for September 18, 2020

III. Approval of the Agenda for November 5, 2020

IV. ATL RIDES & 3rd Party Partnership Update – Daniel Walls

V. Transit Signal Priority (TSP) Primer – Daniel Walls

VI. Adjourn
ATL Rides Project Update

Daniel Walls – Transit Funding Administrator
November 5, 2020
PROJECT UPDATE

► Project deliverable status:
  o Project Management Plan – Complete
  o Project Charter – Draft Complete
  o Data Management Plan – Under development, Final due to FTA 11/17

► Initial ATL RIDES backend development system is active
► Conceptual Design ramping up this month
► Ongoing coordination and collaboration with FTA
INITIAL ATL RIDES SYSTEM

► Serves as development environment
► Allows for partners to:
  o Review/test new features as they are developed
  o Spend time getting a feel for the system
  o Review routing
First working group meetings to be held mid-November

**Design & Development Working Groups**
- Open Trip Planner (OTP) Working Group
- Mobile App Working Group
- Connected Data Platform Working Group

**Demonstration Working Groups**
- User Testing and Evaluation Working Group
- Regional Outreach & Education Working Group
ONGOING AND NEXT STEPS

- Partners improving GTFS feeds
- Testing of the initial ATL RIDES system
- Finalize Data Management Plan
- Working group meetings and conceptual design
Questions?
Transit Signal Priority

ATL Regional Technology Committee
Daniel Walls
November 5, 2020
OVERVIEW

▶ What is Transit Signal Priority (TSP)?

▶ How does TSP work?

▶ Benefits and Considerations

▶ TSP in the ATL Region

▶ TSP in the Near- and Mid-term Future

5 out of 9 Bond List Projects and 27% of ARTP Projects Include TSP Components
WHAT IS TSP? 

Transit Signal Priority (TSP) provides special treatment to transit vehicles at signalized intersections. TSP serves to help make transit service more reliable, faster, and more cost-effective.

A TSP system includes three components:

1. Architecture
   - Hardware, software, and communication components
2. Business Rules
   - Rules and decisions for TSP requests and response (e.g., only a late bus can request priority)
3. Parameters
   - Specific values to a business rule (e.g., how far behind schedules must a bus be to be granted priority?)

---

TYPES OF TSP

**Decentralized Systems**

*All decisions are made at the intersection.*

Individual buses communicate directly with upcoming traffic signals and prioritization decisions are made locally at the intersection.

**Technology consideration:**
- ✓ Signal equipment
- ✓ On-board equipment
- ✓ Central database (optional)

**Centralized Systems**

*Signal priority decisions are made at a centralized transit/traffic management location.*

Bus locations are monitored by a centralized management system that submits prioritization requests to the traffic signals as needed.

**Technology consideration:**
- ✓ On-board automated vehicle location (usually standard)
- ✓ Central management system
HOW DECENTRALIZED TSP SYSTEMS WORK

► A bus’s onboard equipment (OBE) sends a request for a green light to the upcoming traffic signal
► The roadside equipment (RSE) processes the request and determines if it meets the system’s business rules and parameters
► The traffic signal will either extend the length of a green light, or shorten the length of a red light
► Request can be logged for future analysis by optional central repository

Request contains:
- Signal Request Message (SRM)
- Basic Safety Message (BSM)

Response contains:
- Signal Status Message (SSM)
- Basic Safety Message (BSM)

Response logged in backend system
HOW CENTRALIZED TSP SYSTEMS WORK

► Automatic vehicle locators (AVL) continuously transmit bus locations to the centralized transit/traffic management center.

► Centralized management center monitors bus fleet locations, determines when priority is needed, and if it meets the system’s business rules and parameters.

► The centralized management center directs the appropriate traffic signal to either extend the length of a green light, or shorten the length of a red light.

► Requests are logged in the centralized management center for future analysis.
**POTENTIAL BENEFITS AND CONSIDERATIONS**

**Benefits**
- Faster Travel Time
- Reduced Intersection Delay
- Less Travel Time Variability
- Improved Schedule/Headway Adherence

**Considerations**
- Technology: Interoperability, Maintenance/upgrades, Future-proofing
- Stakeholder Coordination & Buy-in: Business rules (i.e. late vehicle priority), Communications standards, Cost sharing
- Other Road Users
## STATE OF PLAY IN THE REGION - ARTP

<table>
<thead>
<tr>
<th>Operator</th>
<th>Effort</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>CobbLinc</td>
<td>Town Center CID to Marietta to Cumberland CID</td>
<td>6-Year</td>
</tr>
<tr>
<td>MARTA</td>
<td>Capitol Ave/Summerhill BRT Cleveland Avenue Arterial Rapid Transit (ART) Clifton Corridor (Phase 1) Metropolitan Parkway ART Peachtree Road ART North Avenue BRT (Phase 1) Atlanta Streetcar East &amp; West Extension Beltline Northeast, Southwest, Southeast Light Rail (LRT) Campbellton Road High Capacity Transit (HCT) Northside Drive BRT GA 400 BRT Clayton County Transit Initiative – BRT &amp; Commuter Rail Transit (CRT)</td>
<td>6-Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-Year</td>
</tr>
<tr>
<td>Xpress</td>
<td>Route 431 Pilot in Downtown Atlanta</td>
<td>Under Development</td>
</tr>
</tbody>
</table>

### 2020 ARTP Projects

- **27% (66 of 245)** of ARTP projects include TSP
- **10 Projects Sponsors**
## State of Play in the Region – Deployments

<table>
<thead>
<tr>
<th>Entity</th>
<th>Effort</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC, GDOT, and multiple cities/counties/CIDs</td>
<td>CV1K – Planned deployment of CV technology inclusive of a TSP option across Atlanta Region</td>
<td>Planned</td>
</tr>
<tr>
<td>CobbLinc</td>
<td>1 signal active, seeking additional deployments</td>
<td>Active and Planned</td>
</tr>
<tr>
<td>City of Atlanta</td>
<td>200 intersections equipped with TSP capable RSUs, additional deployments planned</td>
<td>Active and Planned</td>
</tr>
<tr>
<td>GDOT</td>
<td>Deploying CV hardware with TSP software along RTOP corridors; 600 signals currently equipped with total of 1,600 signals in 2021. Developing preemption and priority guidance document</td>
<td>Active and Planned</td>
</tr>
<tr>
<td>MARTA</td>
<td>Streetcar TSP is active</td>
<td>Active and Planned</td>
</tr>
<tr>
<td>MARTA</td>
<td>Three planned pilots/deployments, including Sandy Springs Route 5, North Ave, and Summerhill BRT</td>
<td>Active and Planned</td>
</tr>
<tr>
<td>Xpress</td>
<td>In coordination with GDOT, implementing TSP pilot on Route 431 in Downtown Atlanta</td>
<td>Under Development</td>
</tr>
</tbody>
</table>
Pending FCC rulemaking to repurpose Safety Spectrum

Bus and equipment manufacturers working to meet diverse technology demands

Transit Operators and partners need to coordinate for the development of regional standards

Balancing speed of delivery with safety, cyber security, interoperability, and other technologies

To future-proof regional TSP investments, regional collaboration is critical.
Thank you  Questions?