Purpose

• Where We Are
• What We Heard
• The Screening Process and Fatal Flaw
• Overview of Screen 1 Analysis
Where We Are
Study Area

I-285 to McGinnis Ferry
Study area of influence:
- Sandy Springs
- Dunwoody
- Roswell
- Alpharetta
- Milton
- Mountain Park
- Johns Creek
- Atlanta
- DeKalb, Fulton, Gwinnett, Forsyth and Cobb Counties
Connect 400 Alternatives Analysis Schedule

- **Discovery**
  - Goals and Objectives
  - Purpose and Need
  - Existing Conditions

- **Discussion**
  - Evaluation Methodology
  - Definition of Alternatives
  - Refine Ridership Model

- **Development**
  - Evaluation of Alternatives
  - Identify Locally Preferred Alternative (LPA)
  - Develop Financial Plan
  - Develop Implementation Plan

- **Documentation**
  - Final Alternatives Analysis Report

- **Timeline**:
  - 2011 Winter
  - 2012 Spring-Summer
  - 2012 Fall-Winter
  - 2013 Spring

We Are Here
Where We Heard
Community / Stakeholder Input to date

Alignments:
• GA 400 & SR 9 most appropriate for high capacity transit
• Need east-west transit service to enhance access & increase potential ridership
• Consider use of Encore Parkway to serve the west side of GA 400

Transit Technologies:
• HRT on SR 9 infeasible due to major ROW constraints & community impacts

Stations:
• Potential stations at Holcomb Bridge, North Point Mall, & Windward
  – No large park-and-ride at Holcomb Bridge
• Large park-and-ride is appropriate at the northern terminus
• Need park-and-ride lots along study area periphery

Other:
• Need improvements to the existing bus service
• Stay consistent with local & regional initiatives
The Screening Process
Overview of Technical Screening Process

Fatal Flaw Analysis considers at a high level:
- Purpose & Need
- Constructability & right-of-way impacts
- Generalized Technology Assessment

Defined alternatives (combinations of alignment & transit technology) for Screen 1

Screen 1 applies both quantitative & qualitative evaluation criteria to reduce the number of alternatives

Smaller set of alternatives advance into Screen 2

Screen 2 involves a more in-depth analysis using additional performance measures

Screen 2 identifies the LPA

MARTA Board to adopt LPA
**Fatal Flaw Analysis** Overview

- Two major corridors were identified: Georgia 400 and State Route 9
- Six (6) technologies were assessed for the corridors; Three (3) technologies were eliminated

**Step 1: Technology Assessment**

- Heavy Rail (HRT)
- Diesel Multiple Unit (DMU)
- Light Rail/Streetcar (LRT/SC)
- Automated Guideway Transit (AGT)
- Bus Rapid Transit (BRT)
- Bus
Fatal Flaw Analysis Overview

Step 2: Universe of Alternatives
3 modes + 9 alignments / GA 400 & SR 9

Georgia 400 Corridor
- GA 400 – 1
- GA 400 – 2
- GA 400 – 3
- GA 400 – 4
- GA 400 – 5
- GA 400 – 6

State Route 9 Corridor
- SR 9 – 1
- SR 9 – 2
- SR 9 – 3

Georgia 400
Universe of Alternatives

Heavy Rail (HRT)
Light Rail/Streetcar (LRT/SC)
Bus Rapid Transit (BRT)
Fatal Flaw Analysis Overview

**Step 2: Universe of Alternatives**

3 modes + 9 alignments / GA 400 & SR 9

- **Georgia 400 Corridor**
  - GA 400 – 1
  - GA 400 – 2
  - GA 400 – 3
  - GA 400 – 4
  - GA 400 – 5
  - GA 400 – 6

- **State Route 9 Corridor**
  - SR 9 – 1
  - SR 9 – 2
  - SR 9 – 3

- **Heavy Rail (HRT)**
- **Light Rail/Streetcar (LRT/SC)**
- **Bus Rapid Transit (BRT)**
### Step 3: Fatal Flaw Analysis

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Name</th>
<th>Alignment</th>
<th>Technology</th>
<th>Purpose and Need</th>
<th>Constructibility</th>
<th>Fatal Flaw Results</th>
<th>Alternatives Advancing to Screen 1</th>
<th>Rationale for Elimination and/or Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA 400-1</td>
<td>North Spring MARTA Station - GA 400 - Windward Parkway</td>
<td>BRT, LRT/SC, HR</td>
<td>2, 1, 2</td>
<td>1, 0, 0</td>
<td>2, 2, 2</td>
<td>Yes, Yes, Yes</td>
<td>Yes</td>
<td>Eliminated due to considerable redundancy in alignment. Will be combined with GA 400-1 and regarded as a potential alignment variation for further analysis under Screen 1.</td>
</tr>
<tr>
<td>GA 400-2</td>
<td>North Springs MARTA Station - GA 400 - Mansell Road - North Point Parkway - Haynes Bridge Road - GA 400 - Windward Parkway</td>
<td>BRT, LRT/SC, HR</td>
<td>2, 1, 2</td>
<td>1, 0, 0</td>
<td>2, 2, 2</td>
<td>No, No, Yes</td>
<td>No</td>
<td>Eliminated due to redundancy in alignment. Will be incorporated into GA 400-1 for further analysis under Screen 1. Will be considered during the phasing/implementation plan.</td>
</tr>
<tr>
<td>GA 400-3</td>
<td>North Springs MARTA Station - GA 400 - SR 140 - SR 9 - Mansell Road - North Point Parkway - Windward Parkway</td>
<td>BRT, LRT/SC, HR</td>
<td>1, 1, 1</td>
<td>1, 1, 1</td>
<td>1, 1, 1</td>
<td>Yes, No, No</td>
<td>No</td>
<td>Eliminated due to considerable redundancy in alignment. Will be combined with GA 400-1 and regarded as a potential alignment variation for further analysis under Screen 1.</td>
</tr>
<tr>
<td>GA 400-4</td>
<td>North Springs MARTA Station - GA 400 - SR 140</td>
<td>BRT, LRT/SC, HR</td>
<td>2, 0, 2</td>
<td>0, 1, 1</td>
<td>2, 2, 2</td>
<td>No, No, No</td>
<td>No</td>
<td>Eliminated due to redundancy in alignment. Will be incorporated into GA 400-1 for further analysis under Screen 1. Will be considered during the phasing/implementation plan.</td>
</tr>
<tr>
<td>GA 400-5</td>
<td>North Springs MARTA Station - GA 400 - Mansell Road - North Point Parkway - Windward Parkway</td>
<td>BRT, LRT/SC, HR</td>
<td>2, 1, 2</td>
<td>1, 1, 1</td>
<td>1, 1, 1</td>
<td>No, No, No</td>
<td>No</td>
<td>Eliminated due to considerable redundancy in alignment. Will be combined with GA 400-1 and regarded as a potential alignment variation for further analysis under Screen 1.</td>
</tr>
<tr>
<td>GA 400-6</td>
<td>North Springs MARTA Station - GA 400 - SR 140 - SR 9 - Windward Parkway</td>
<td>BRT, LRT/SC</td>
<td>1, 1, 1</td>
<td>1, 1, 1</td>
<td>1, 1, 1</td>
<td>Yes, No, No</td>
<td>No</td>
<td>Eliminated due to significant impacts to established residential neighborhoods on 2-lane Mt. Vernon Highway.</td>
</tr>
<tr>
<td>SR 9-1</td>
<td>Sandy Springs MARTA Station - Mt Vernon Highway - SR 9 - Windward Parkway</td>
<td>BRT, LRT/SC</td>
<td>1, 2, 1</td>
<td>1, 0, 0</td>
<td>1, 0, 0</td>
<td>No, No, No</td>
<td>No</td>
<td>Eliminated due to significant impacts to established residential neighborhoods on various 2-lane roadways through City of Dunwoody.</td>
</tr>
<tr>
<td>SR 9-2</td>
<td>Dunwoody MARTA Station - Hammond Drive - SR 9 - Mansell Road - North Point Parkway - Windward Parkway</td>
<td>BRT, LRT/SC</td>
<td>1, 2, 1</td>
<td>1, 0, 0</td>
<td>1, 0, 0</td>
<td>Yes, No, No</td>
<td>No</td>
<td>Eliminated due to significant impacts to established residential neighborhoods on various 2-lane roadways through City of Dunwoody.</td>
</tr>
<tr>
<td>SR 9-3</td>
<td>Sandy Springs MARTA Station - Mt Vernon Highway - Chamblee Dunwoody Road - Pitts Road - SR 9 - Windward Parkway</td>
<td>BRT, LRT/SC</td>
<td>1, 2, 1</td>
<td>1, 0, 0</td>
<td>1, 0, 0</td>
<td>No, No, No</td>
<td>No</td>
<td>Eliminated due to significant impacts to established residential neighborhoods on various 2-lane roadways through City of Dunwoody.</td>
</tr>
</tbody>
</table>

**Rating Scheme**
- **2**: High
- **1**: Medium
- **0**: Low

**Threshold Score**: 4

**Alternatives to move forward to Screen 1**
Fatal Flaw Analysis Overview

Step 1: Technology Assessment
- Independent review of 6 modes
- Most appropriate - Bus Rapid Transit (BRT); Light Rail/Streetcar (LRT/SC); Heavy Rail (HRT)

Step 2: Universe of Alternatives
- 3 modes + 9 alignments along GA 400 & SR 9

Step 3: Fatal Flaw Analysis
- Reduce ‘universe’ to a smaller set for Screen 1
- High-level based on purpose/need & constructability
Introduction / Overview of Screen 1

Applicable Qualitative & Quantitative Measures to Address Goals and Objectives of AA

- Mobility
- Accessibility
- Land Use and Development
- Potential for TOD
- Costs
- Environmental Quality
- Community Impacts

Data & Tools Used

- U.S. Census & ARC 2040 Socioeconomic Forecasts
- Geographic Information System (GIS)
- Adopt Local Land Use Plans
- Order of Magnitude Transit Unit Costs
- Department of Natural Resources
- Fulton County Parcel Data
### Transit Technologies Considered for Georgia 400*

<table>
<thead>
<tr>
<th><strong>What is it?</strong></th>
<th><strong>Heavy Rail</strong></th>
<th><strong>Light Rail/Streetcar</strong></th>
<th><strong>Bus Rapid Transit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High-speed rail cars powered by electric fixed guideway.</td>
<td>Rail cars powered by overhead catenaries.</td>
<td>Enhanced bus using technology to improve speed and reliability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Where does it go?</strong></th>
<th>Typically used to travel to and from urban locations.</th>
<th>Typically used to travel to and from urban locations.</th>
<th>Typically used to travel to and from urban locations.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is context? / How often does it stop?</strong></td>
<td>Corridor with concentrated urban centers</td>
<td>Corridor with concentrated urban centers and/or suburban centers</td>
<td>Corridor with dispersed suburban and urban centers</td>
</tr>
</tbody>
</table>

| **What is the maximum capacity of the train or bus?** | 800 - 1,400 passengers (8-car train) | 200 - 500 passengers (single streetcar or 2-car light rail) | 45 - 150 passengers |

| **How fast does it go? (Average Speed)** | 6.5 - 20, 25, 30, 35, 40, 45, 50, 60, 75 | 10 - 30 mph | 15 - 30 mph |

| **What are the ballpark capital costs? (Millions/ Mile)** | $200-$600 | $80-$300 | $10-$120 |

| **What does it look like?** | ![Heavy Rail Image] | ![Light Rail Image] | ![Bus Rapid Transit Image] |

| **Where can I see it?** | Atlanta, Georgia; New York City, New York; Washington, D.C. | Phoenix, Arizona; Dallas, Texas; Charlotte, North Carolina; Portland, Oregon | Boston, Massachusetts; Cleveland, Ohio; Pittsburgh, Pennsylvania |

---

* Other technologies considered included: diesel multiple unit, automated fixed guideway, and bus. These technologies were eliminated in the Fatal Flaw Analysis and outlined in the Technology Assessment Document (see website).

** High-level estimates based on other cities and previous studies.**
Georgia 400 – 1 (A, B, C, D)

Alignment
- 11.9 to 12.7 Miles Long
- North Springs Station – GA 400 – Windward, with options

Transit Technology
- Bus Rapid Transit
- Light Rail/Streetcar
- Heavy Rail

Key Assumptions
- Use of GDOT Transit ROW*
- Most Direct Route
- Fewer Community Impacts
- Integration with other regional transit projects

* GDOT ROW availability on GA 400 to be determined based on Managed Lanes
Georgia 400 - 3

Alignment
- 15.1 Miles Long
- North Springs Station – GA 400 – SR140 – SR9 – Mansell – North Point - Windward

Transit Technology
- Bus Rapid Transit

Key Assumptions
- Use of GDOT Transit ROW*
- Dedicated lanes where feasible on arterials
- Congestion on SR 140
- Grade issues on Mansell crossing GA 400
- Integration with other regional transit projects

* GDOT ROW availability on GA 400 to be determined based on Managed Lanes
Georgia 400 - 6

Alignment
- 14.7 miles long
- North Springs Station - GA 400 - SR 140 - SR 9 - Windward

Transit Technology
- Bus Rapid Transit

Key Assumptions
- Use of GDOT Transit ROW*
- Dedicated lanes where feasible on arterials
- Grade/Topography/ Roadway alignment & ROW issues on SR 9
- Integration with other regional transit projects

* GDOT ROW availability on GA 400 to be determined based on Managed Lanes
State Route 9 - 2

Alignment
- 19.6 miles long
- Dunwoody Station - Hammond - SR 9 - Mansell - North Point Pkwy – Windward

Transit Technology
- Bus Rapid Transit

Key Assumptions
- Dedicated lanes where feasible on arterials
- Grade/Topography/ Roadway alignment & ROW issues on SR 9
- Consistent with proposed BRT on Hammond
- Integration with other regional transit projects
What We Have Learned So Far . . .

- ROW along SR-9 will present cost and travel time challenges
- Alignments outside of GA 400 ROW may potentially impact more of the community
- Moderate potential impact to environmental features for all alignments
- HRT and LRT will have highest capital costs
- East-West connecting services will be identified before locally preferred alternative is finalized
Connect 400 Contact

Jason Morgan, MARTA Project Manager

Connect400@itsmarta.com

Follow us at Connect 400 on facebook