Dallas Midtown - Automated Transportation System

Conceptual Engineering Study

Study Review Committee Meeting #3
August 21, 2018
Agenda

- Welcome and Introductions
- Regional Connections
- Objectives of Ridership Forecast Analysis
- Review of Demographics
- Ridership Forecast Review
- Internal Ridership
- Regional Ridership Results
- Conclusions
- Next Steps
- Preliminary Circulator Alignment Options
- Parking Demand
- Questions/Discussion
- Closing Remarks
Midtown ATS Study Goals

1. Evaluate and Determine Feasibility of Regional Connectivity to Midtown Development

2. Explore options for Automated Transportation Systems for Midtown Development
   - Technology
   - Alignment
   - Operational Characteristics

3. Review Automated Transportation System Interaction with Existing and Future Parking Facilities and Strategies

4. Identify Potential Funding and Implementation Strategies
Regional Connections
Objectives of the Ridership Forecast Analysis

• Regional
  • Do the regional connections and station locations make sense?

• Local
  • Do the circulator alignment and station locations make sense?
Review of Demographics

Dallas Midtown has 6 NCTCOG TSZs
## Review of Demographics

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Employment</th>
<th>Household</th>
<th>Retail</th>
<th>Basic</th>
<th>Service</th>
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</thead>
<tbody>
<tr>
<td><strong>MPO 2018</strong></td>
<td>10,214</td>
<td>33,220</td>
<td>4,565</td>
<td>7,415</td>
<td>5,820</td>
<td>19,985</td>
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<tr>
<td><strong>MPO 2045</strong></td>
<td>10,374</td>
<td>45,445</td>
<td>4,634</td>
<td>7,655</td>
<td>8,255</td>
<td>29,535</td>
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<tr>
<td><strong>Buildout</strong></td>
<td>30,173</td>
<td>50,514</td>
<td>12,069</td>
<td>6,418</td>
<td>0</td>
<td>44,096</td>
</tr>
</tbody>
</table>
Review of Demographics
Demographics by Land-Use

- Development Build-Out: 2045
  - Office: 10.8 million SF
  - Retail: 3.2 million SF
  - Residential: 12,069 units
  - Hotel: 1,496 rooms
Ridership Forecast Review

Internal Circulator*

Regional Connection*

*Conceptual alignments for modeling purposes only
Ridership Forecast Review
Estimation Methodology

Internal Ridership

Regional Ridership

Total Ridership

- Will discuss total ridership at a later date.
- Depends on technology, and ability to transfer from regional connections to circulator
Internal Ridership Estimation

- Custom built sub-area model to estimate internal ridership
- Used ITE Trip Generation Manual 10th edition
- Land Uses included in Dallas Midtown Analysis:
  - Residential, Retail, Lodging, Office, Recreational, Services
  - Institution, Medicine and others (total of 98) built into estimate tool for future use
- Total of 10 zones inside 6 NCTCOG TSZ
Internal Ridership
Results

• Dual loop circulator alternatives ridership for PM Peak period

• Total Internal Ridership

*Trip Assignment using TransCAD
Regional Ridership Results
Overview

Connections to Red/Blue and Green lines as well as the Cotton Belt to/from Dallas Midtown

- Stations are in preliminary locations and subject to change

Connections comprised of three interlined route alignments

- Cotton Belt to Red/Blue Lines
- Green Line to Cotton Belt
- Red/Blue Lines to Green Line
Regional Ridership Results
Ridership by Line

2045 Buildout
• Green Line to Cotton Belt
  ➢ 5,357 Riders
• Cotton Belt to Red/Blue Line
  ➢ 12,534 Riders
• Blue Line to Green Line
  ➢ 15,908 Riders
• Total Ridership - 33,799 Riders
Regional Ridership Results
Overall Movements - 2045

• North station on Montfort assumed as transfer station

• Forecasted distribution of ridership subject to change with location of transfer station

• Movement Index:
  - C/B – Cotton Belt
  - M/T – Midtown
  - RL – Red Line
  - GL – Green Line
Conclusions

✓ Ridership on regional connections warrants further conversation with DART, Midtown Developers, and the City of Dallas.

✓ Internal Circulator ridership warrants additional review.
Next Steps

• Initial discussions with DART, Midtown Developers, and City of Dallas on regional connections
• Develop and evaluate regional connection options
• Work with developers to evaluate ATS technologies, alignment, station location options, and parking locations and strategies.
• Implementation and funding options
Preliminary Circulator Alignment Options

- Alignments may influence choice of technology
Parking Demand

• Development Build-Out (2045) peak parking demand per Zone
CONCEPTUAL PARKING STRUCTURE EXAMPLES

• **Transfer Hubs:**
  • Integrating multiple modes together in one structure
CONCEPTUAL PARKING STRUCTURE EXAMPLES

• Is That Really a Parking Structure?:
  • Using contextual architecture and technology to build the unexpected
Thanks for attending!

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Preliminary Screening

Automated People Mover (APM)
- Preliminary faster less cost- effective than bus
- Regional connection transfers
- Cable-Propelled APM
- Concurrent operation
- Transfers to and from regional connections

Monorail
- Preliminary faster less cost- effective than bus
- Regional connection transfers

Personal Rapid Transit (PRT)
- Direct, on- demand service
- Regional connection transfers

Group Rapid Transit (GRT)
- Direct, on- demand service
- Regional connection transfers

Autonomous Vehicles
- On- demand service
- Regional connection transfers

Dallas Midtown Automated Transportation System Study
North Central Texas Council of Governments