Dallas Midtown - Automated Transportation System

Conceptual Engineering Study

Study Review Committee Meeting #3

August 21, 2018

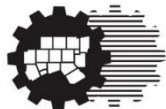North Central Texas
Council of Governments

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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
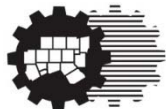
Midtown ATS Study Goals

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
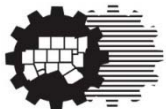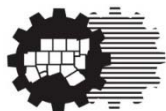
Regional Connections
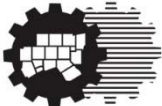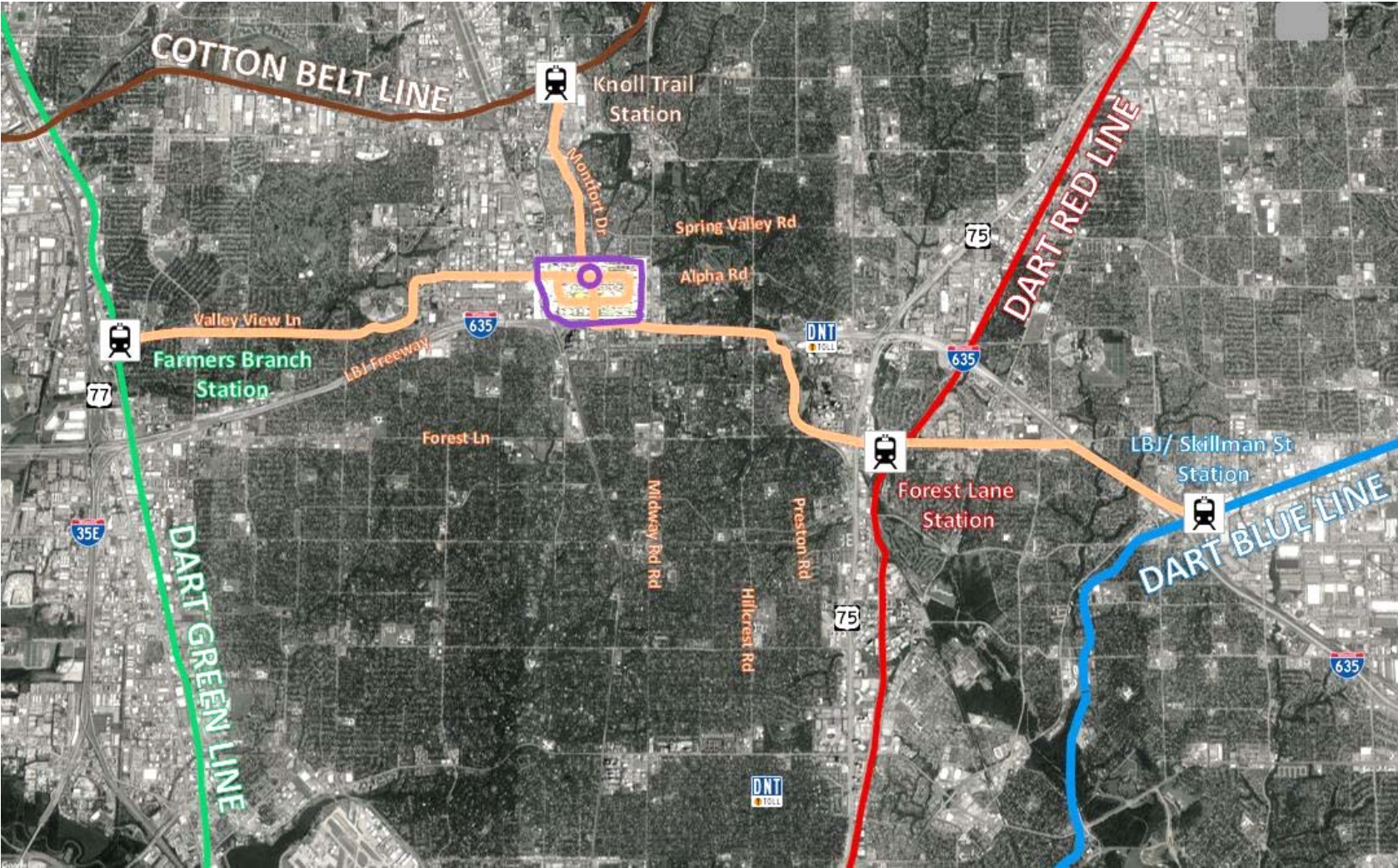
Objectives of the Ridership Forecast Analysis

- **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

- **MPO 2018**
  - Population : 10,214
  - Household : 4,565
  - Employment : 33,220
    - Basic 5,820
    - Retail 7,415
   - Service 19,985

- **MPO 2045**
  - Population : 10,374
  - Household : 4,634
  - Employment: 45,445
    - Basic 8,255
    - Retail 7,655
    - Service 29,535

- **Buildout**
  - Population : 30,173
  - Household : 12,069
  - Employment: 50,514
    - Basic 0
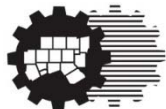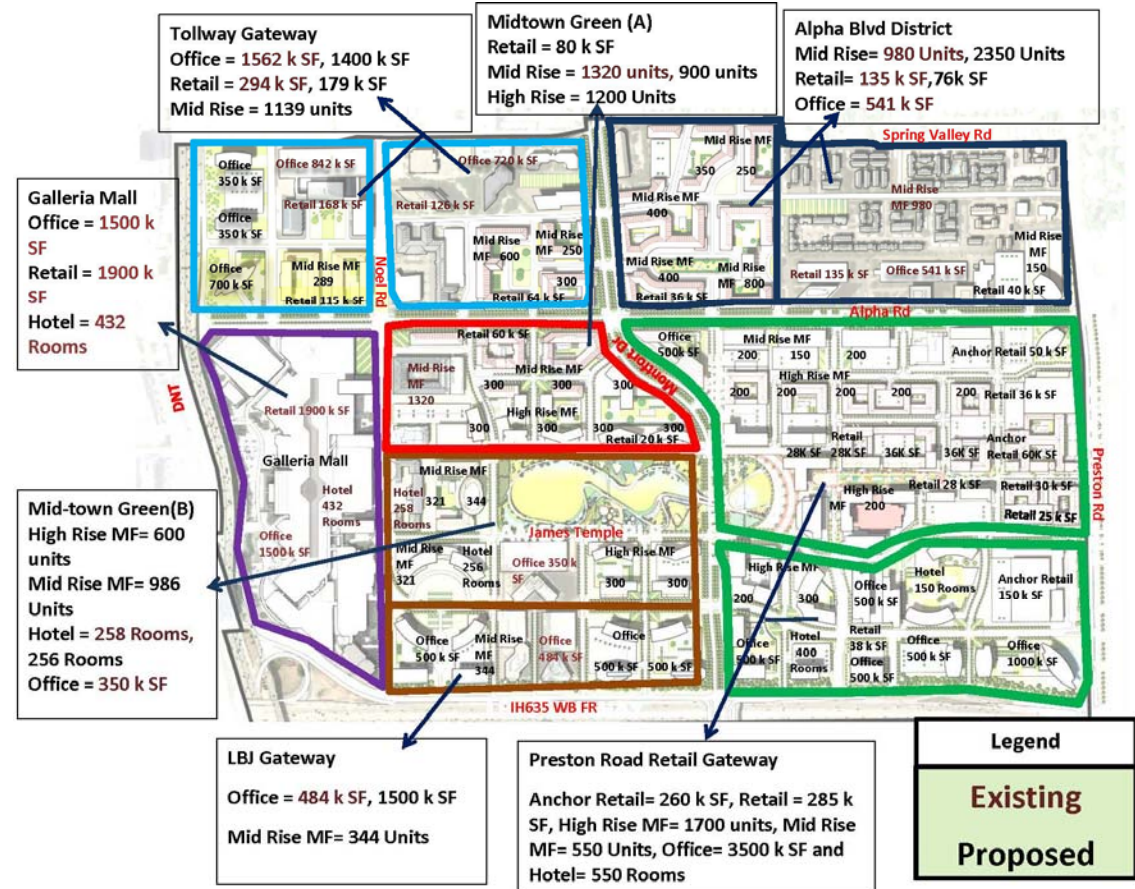   - Retail 6,418
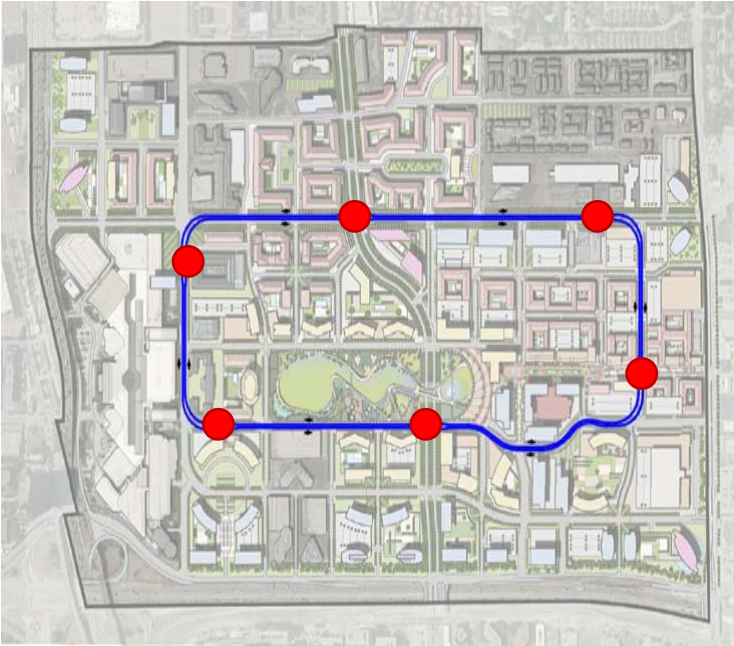   - Service 44,096

Review of Demographics

Population

Buildout	
MPO	

10,214   30,173
10,374

2018   2045

Households

Buildout	
MPO	

12,069
4,565   4,634

2018   2045

Employment

Buildout	
MPO	

33,220   50,514
45,445

2018   2045

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Dallas Midtown Automated Transportation
System Study

DALLAS MIDTOWN
AUTOMATED
TRANSPORTATION
SYSTEM STUDY

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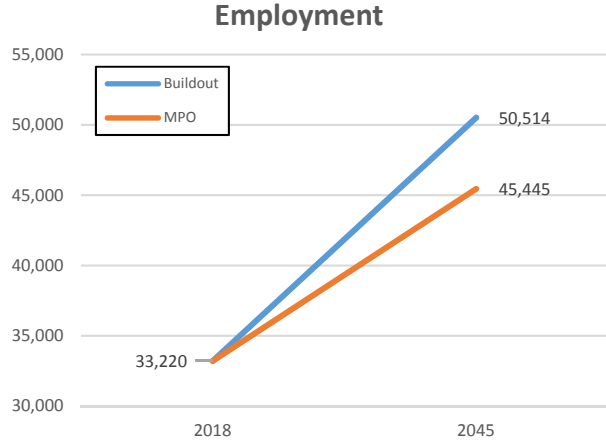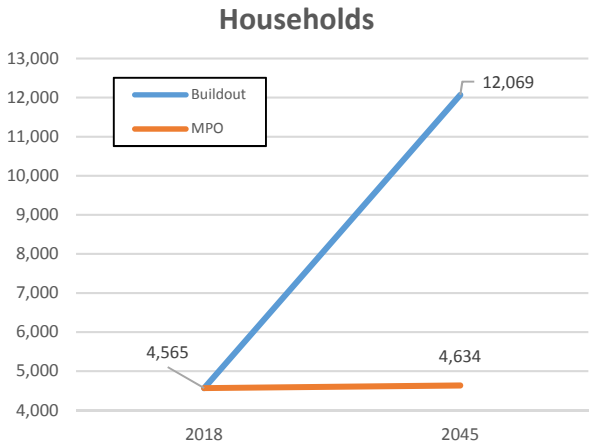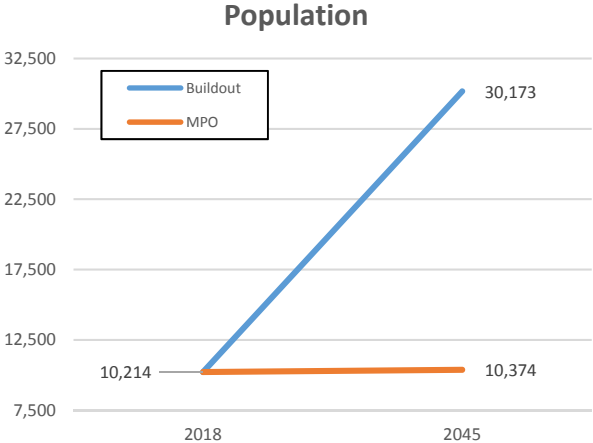
Demographics by Land-Use

- Development Build-Out : 2045
  - Office: 10.8 million SF
  - Retail : 3.2 million SF
  - Residential :12,069 units
  - Hotel : 1496 rooms

Tollway Gateway
Office = 1562 k SF, 1400 k SF
Retail = 294 k SF, 179 k SF
Mid Rise = 1139 units

Midtown Green (A)
Retail = 80 k SF
Mid Rise = 1320 units, 900 units
High Rise = 1200 Units

Alpha Blvd District
Mid Rise= 980 Units, 2350 Units
Retail= 135 k SF,76k SF
Office = 541 k SF

Galleria Mall
Office = 1500 k SF
Retail = 1900 k SF
Hotel = 432 Rooms

Mid-town Green(B)
High Rise MF= 600 units
Mid Rise MF= 986 Units
Hotel = 258 Rooms, 256 Rooms
Office = 350 k SF

LBJ Gateway
Office = 484 k SF, 1500 k SF
Mid Rise MF= 344 Units

Preston Road Retail Gateway
Anchor Retail= 260 k SF, Retail = 285 k SF, High Rise MF= 1700 units, Mid Rise MF= 550 Units, Office= 3500 k SF and Hotel= 550 Rooms

Legend
Existing
Proposed

Ridership Forecast Review

Internal Circulator*

Regional Connection*
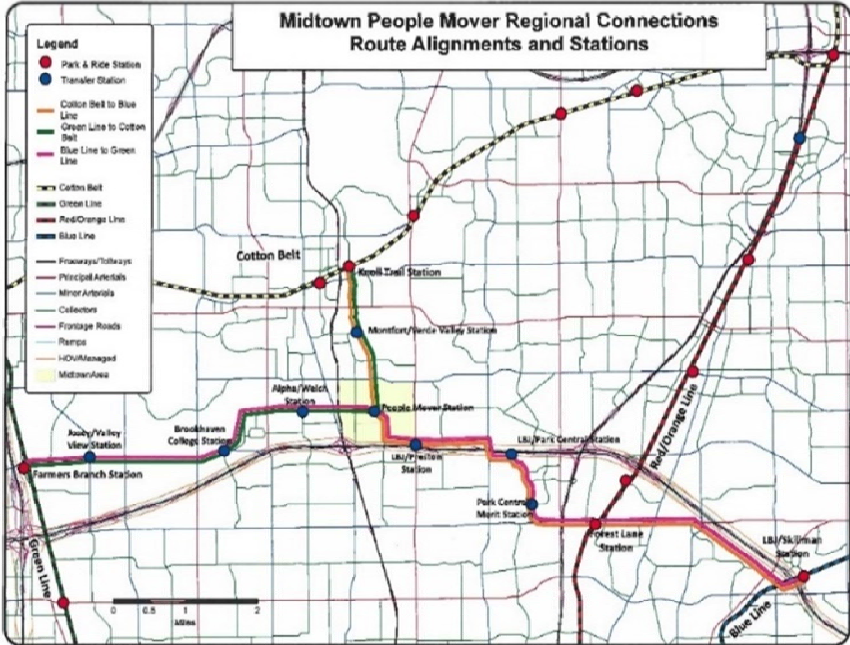
*Conceptual alignments for modeling purposes only

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
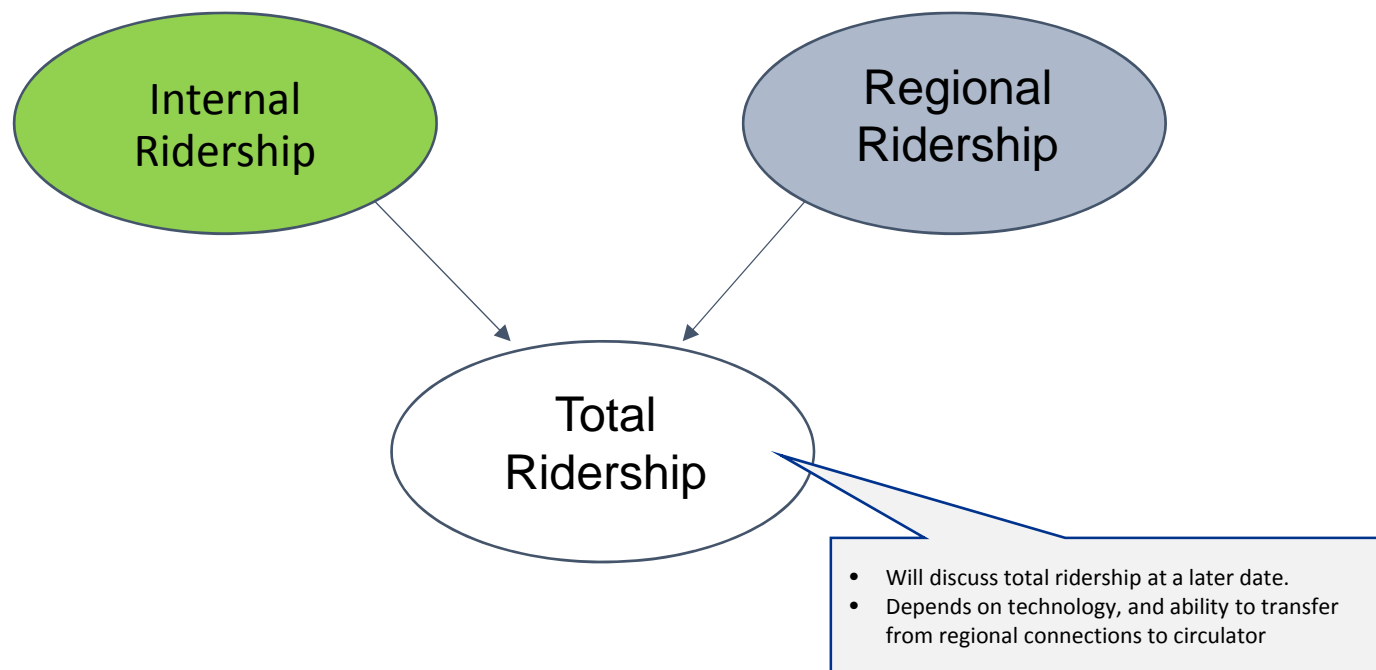
Internal Ridership
Estimation

- 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, Service*s
  - *Institution*, *Medicine* and others (total of 98) built into estimate tool for future use

- Total of 10 zones inside 6 NCTCOG TSZ
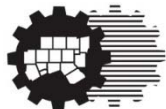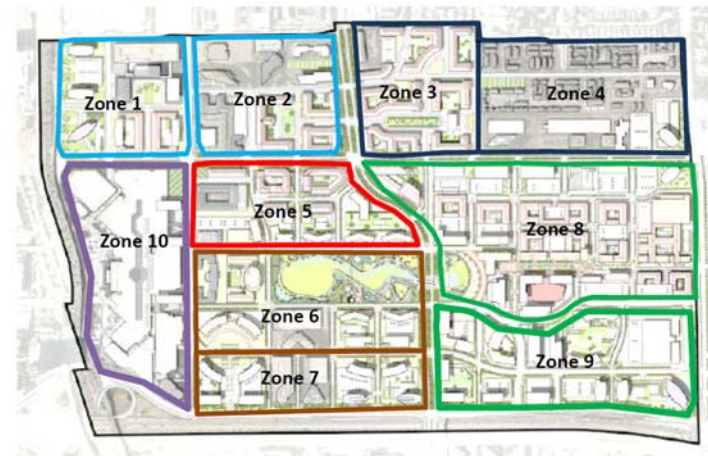
Internal Ridership
Results

- Dual loop circulator alternatives ridership for PM Peak period

- Total Internal Ridership

Zone	1	2	3	4	5	6	7	8	9	10
1		10	4	2	5	4	2	3	5	155
2	5		5	2	15	3	2	2	6	66
3	1	3		5	3	2	1	2	10	18
4	1	2	10		2	1	1	2	12	114
5	1	7	3	1		4	1	1	3	30
6	2	2	3	1	8		3	1	4	23
7	3	4	9	1	6	10		2	13	62
8	1	2	3	3	3	1	1		32	10
9	6	12	37	25	12	11	11	48		88
10	92	71	36	115	72	30	25	11	45	

Trip Assignment using TransCAD
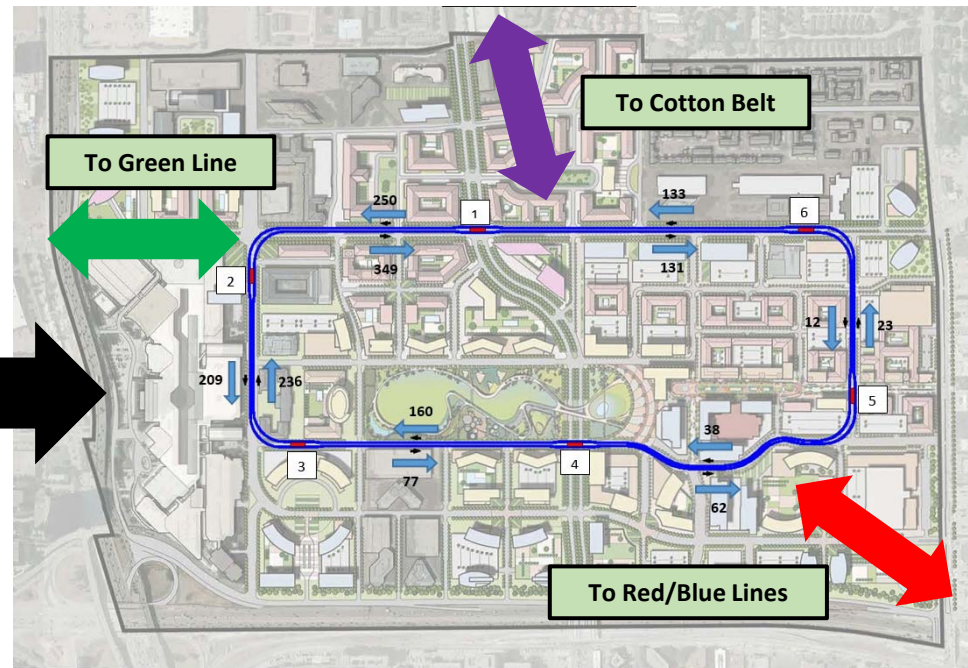
Regional Ridership Results
Overview

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
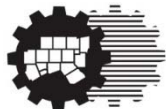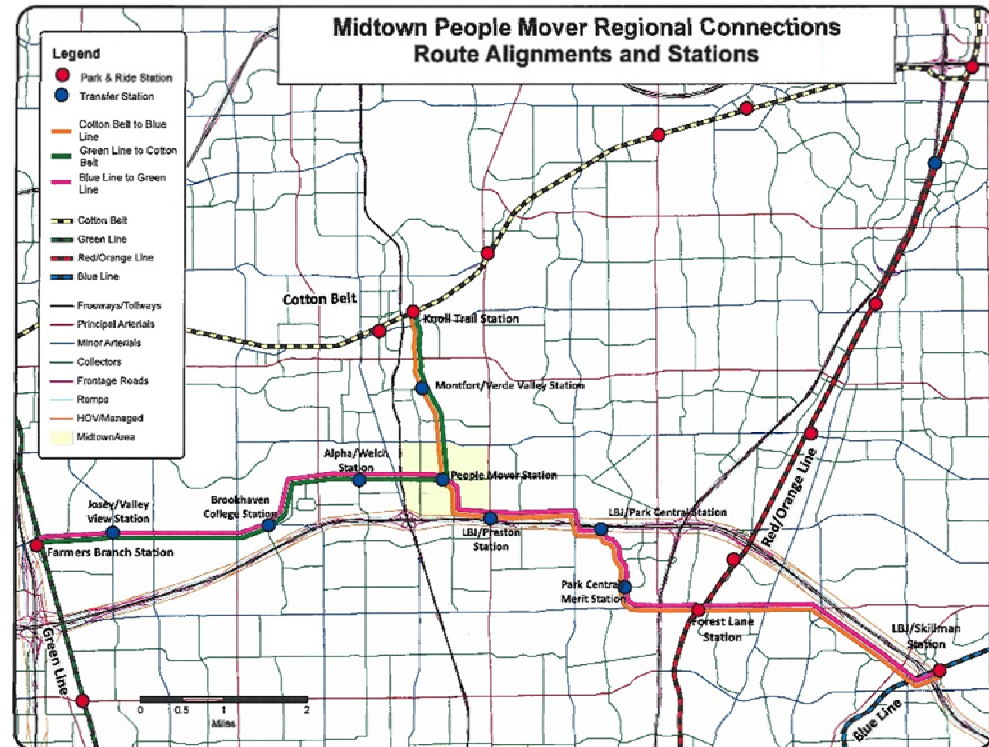
Regional Ridership Results
Ridership by Line

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

Midtown People Mover Regional Connections
Route Alignments and Stations

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DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY
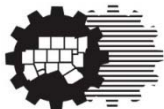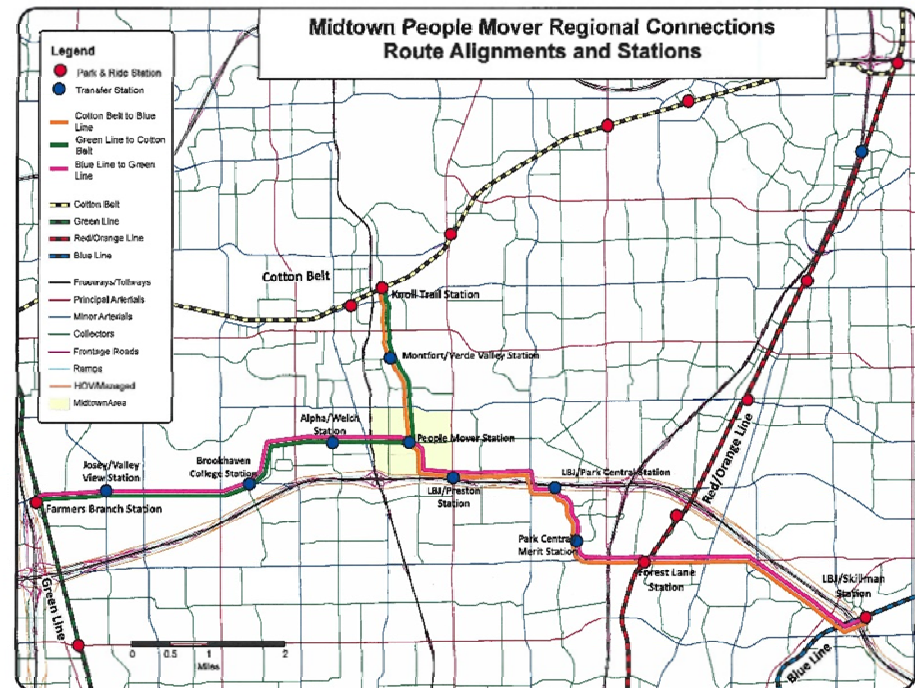
Regional Ridership Results
Overall Movements - 2045

- 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

To M/T – 1,172
From M/T - 374

To C/B - 370
From C/B – 1,324

To RL/BL – 1,290
From RL/BL – 1,398

To M/T – 2,042
From M/T - 362

To GL – 3,471
From GL – 1,379

To M/T – 5,474
From M/T – 1,410
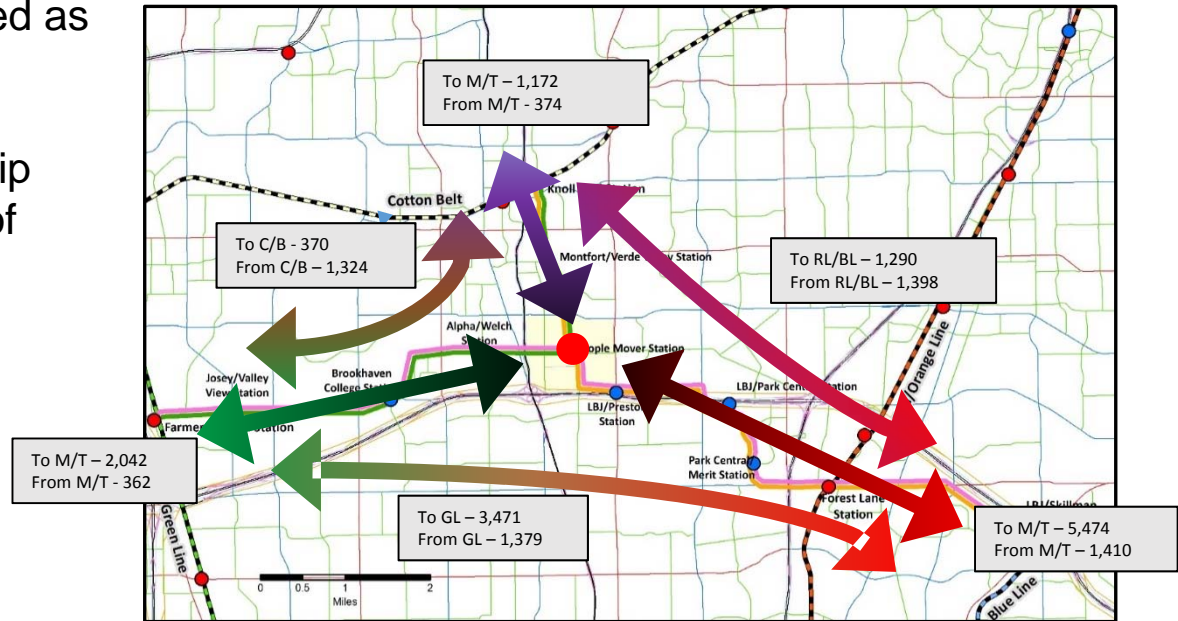
Conclusions

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

✓ Internal Circulator ridership warrants additional review.
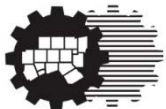
Next Steps

- 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
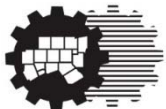
Preliminary Circulator Alignment Options

- Alignments may influence choice of technology
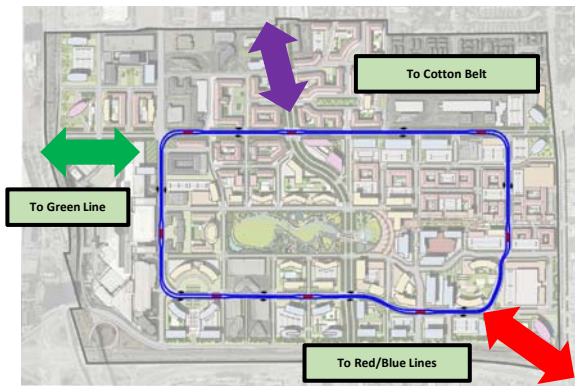
Dual Loop Circulator 1
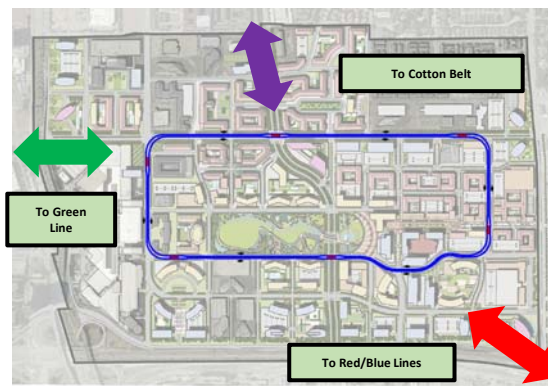
Dual Loop Circulator 2

Radial Circulator

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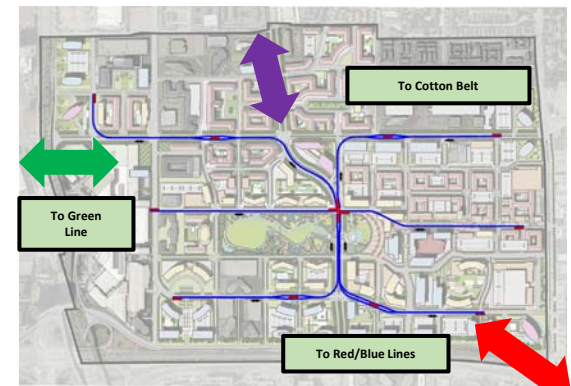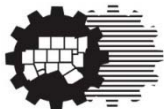
Parking Demand

- Development Build-Out (2045) peak parking demand per Zone
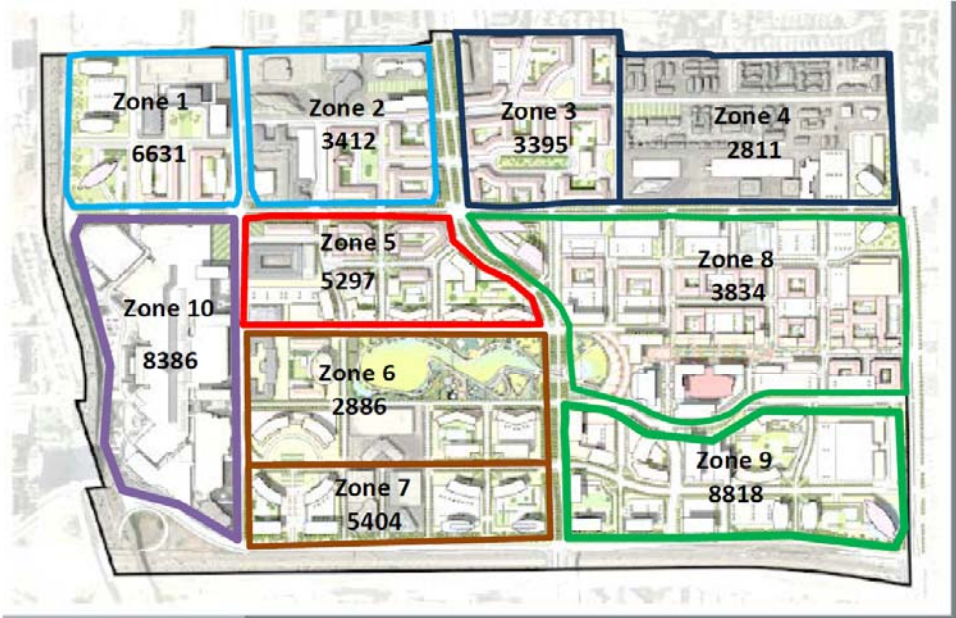
Dallas Midtown Zones with Peak
Parking Demand (spaces)

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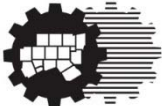
CONCEPTUAL PARKING STRUCTURE EXAMPLES

- **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!

Study Contact Information

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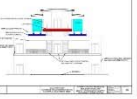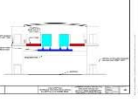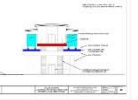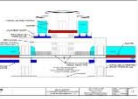
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Dallas Midtown Automated Transportation System Study

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Preliminary Screening

Questions?

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