North Central Texas Council of Governments
Environment & Development

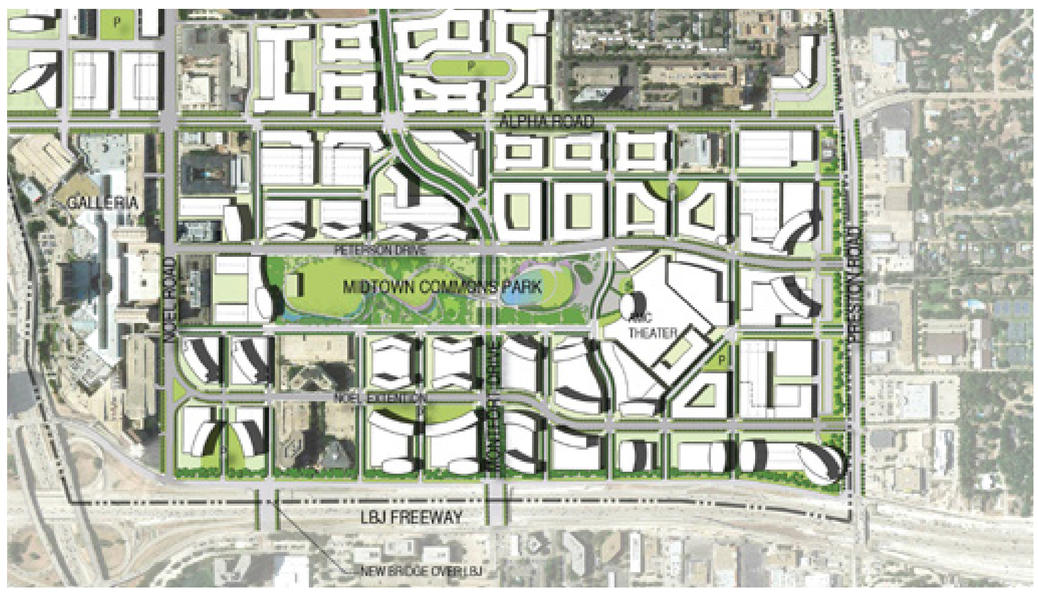
DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY





DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Public Open House and Listening Session

STUDY TIMELINE

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

SPRING 2018

Study of Dallas Midtown development and current and future state of people movers began

Collect data for Study including Midtown Plan, Roadway infrastructure and state of ATS industry

SUMMER 2018

Public Open House and Listening Session #1

Develop APM Demand Tool and alternative APM recommendations

WINTER 2018

Public Open House and Listening Session #2

Select recommended APM alternative and develop implementation options

SPRING 2019

Public Open House and Listening Session #3

Develop Implementation Options and Recommendations

SPRING 2019

Final Proposed Recommendations for a People Mover in Dallas Midtown

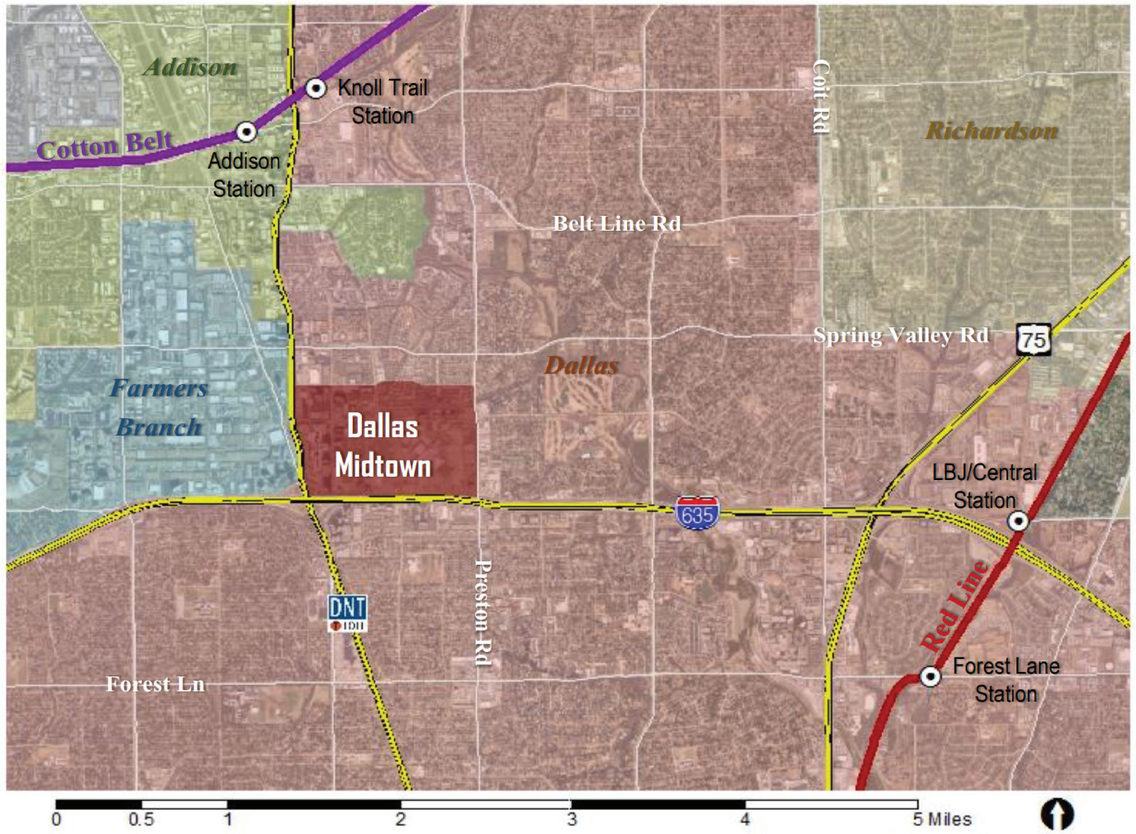
We are here

MIDTOWN ATS STUDY GOALS

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Purpose of the Dallas Midtown ATS Study

- **Provide efficient and effective circulation within the proposed development**
- **Establish connections to the regional rail and transit systems**
- **Develop a Demand Forecasting Tool that can be applied to future People Mover locations in the region**
- **Perform an alternative analysis of the present and near-future state of autonomous technologies**
- **Provide alignment, station location, vehicle and implementation recommendations for an ATS in Midtown**



PROPOSED MIDTOWN APM REGIONAL CONNECTIVITY

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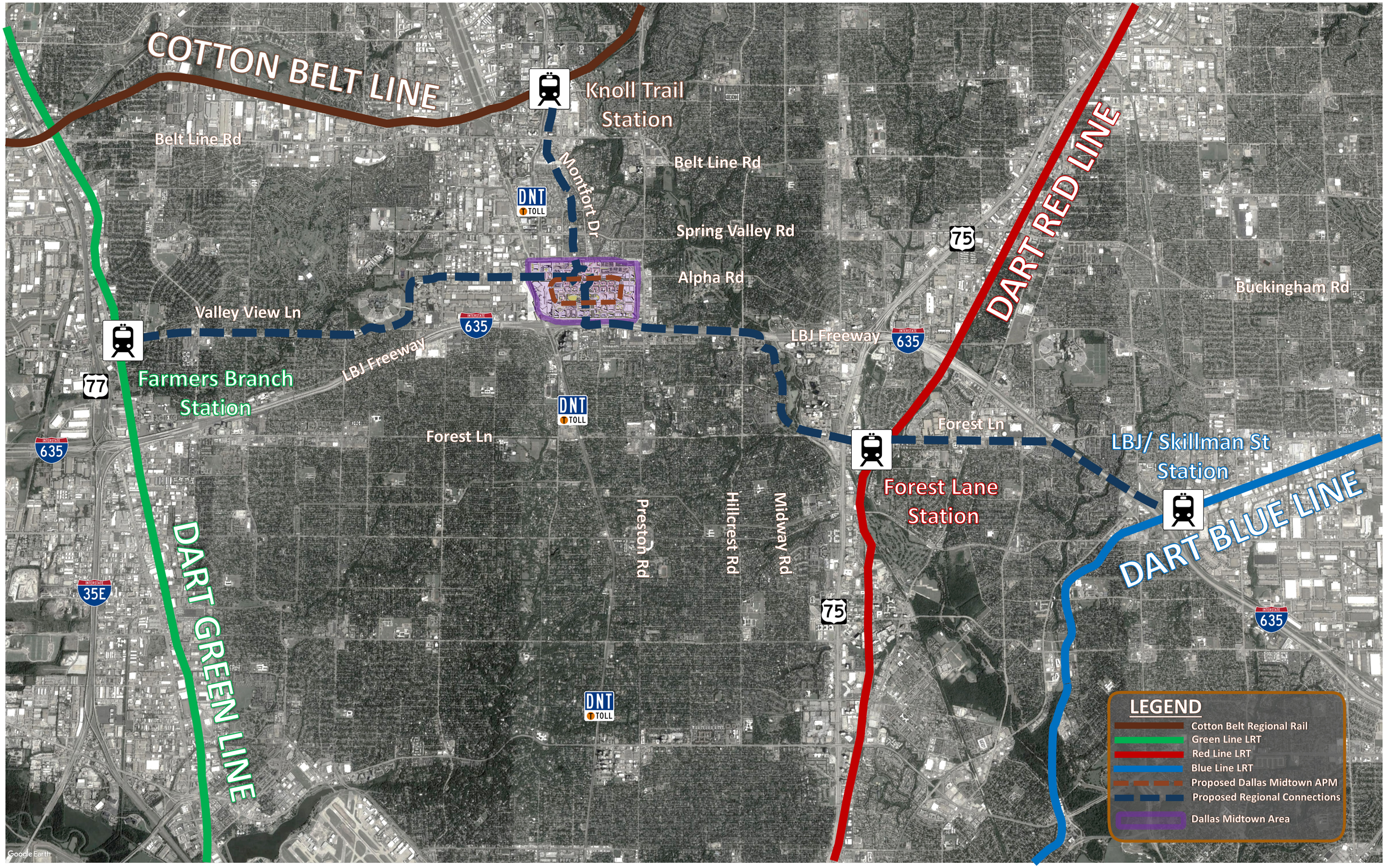
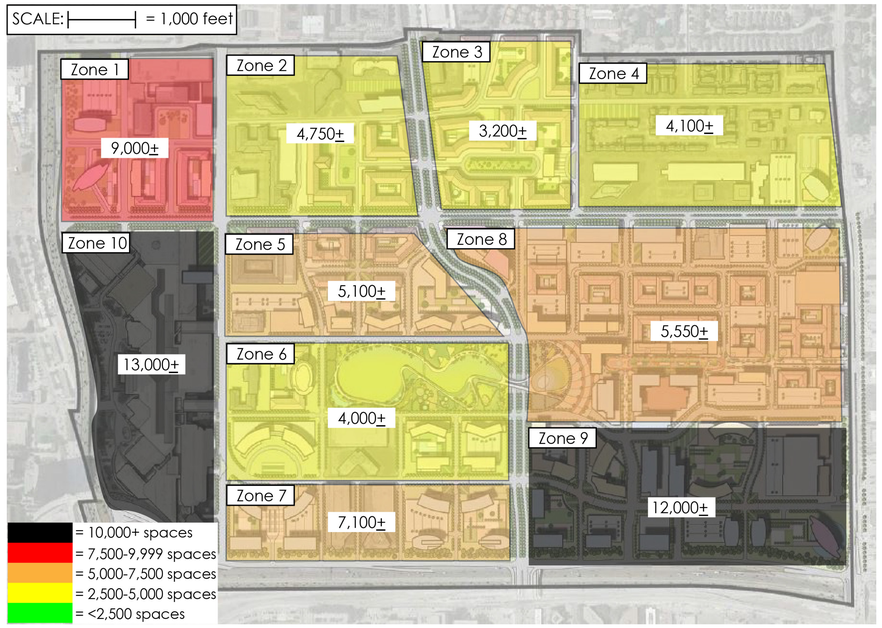


PARKING STRATEGY

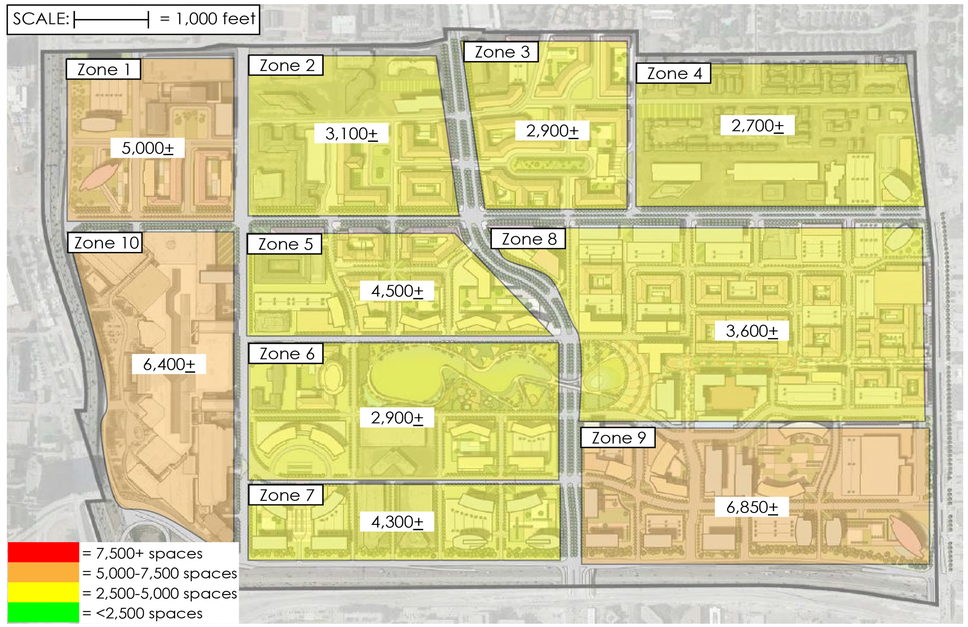
DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Strategy Alternative	Integration with ATS System	Parking Spaces Needed	Cost Implications	Land Implications
Existing Parking Code (determined by individual projects)	Encourages and facilitates use of personal vehicles for internal trips, effectively eliminating all ATS demand for trips within Midtown	68,000	Expected increase of parking construction costs by nearly $1 billion in comparison to shared parking strategy	Would require 26,000 additional parking spaces in comparison to shared parking strategy, increasing spatial needs for parking by roughly 3 million square feet
Shared Parking Strategy (coordinated based on need through-out the Midtown district)	Encourages and facilitates use of ATS through shared and strategically-located parking assets	42,000	Would result in nearly $1 billion in parking construction savings	Would right-size parking to demand, therefore reducing spatial need for parking by roughly 3 million square feet

Existing Parking Code



Shared Parking Strategy



SHARED PARKING LOCATIONS

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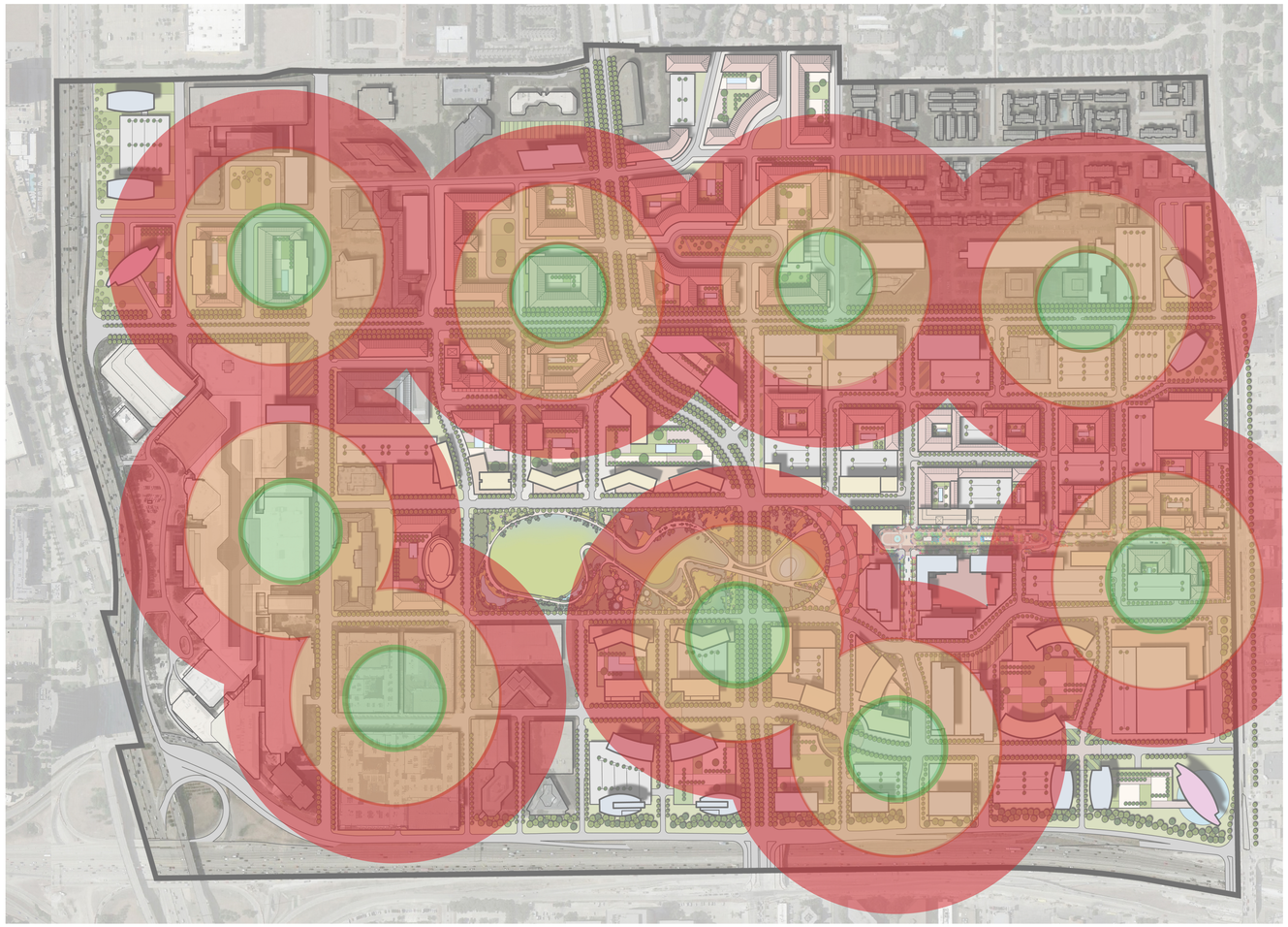
Criteria	Purpose / Intent
Proximity to ATS Station (<1/10 mile preferred)	B+ walking distance Level of Service or better
Accessibility to main road	Reduce internal circulation and traffic on roads planned to be pedestrian/bicycle friendly
Potential to incorporate with regional transit	Support ridership goals of planned transit lanes, and provide a flexible, shareable parking supply
Potential for sharing amoing multiple uses	Efficient use of parking assets, reduction in the number of spaces needed to be built

Most Desireable - Meets Most / All Location Criteria
Moderately Desireable - Meets Several Location Criteria
Less Desireable - Meets Few / No Location Criteria



Note: A walking distance level of service of B+ or better would be less than 520 feet

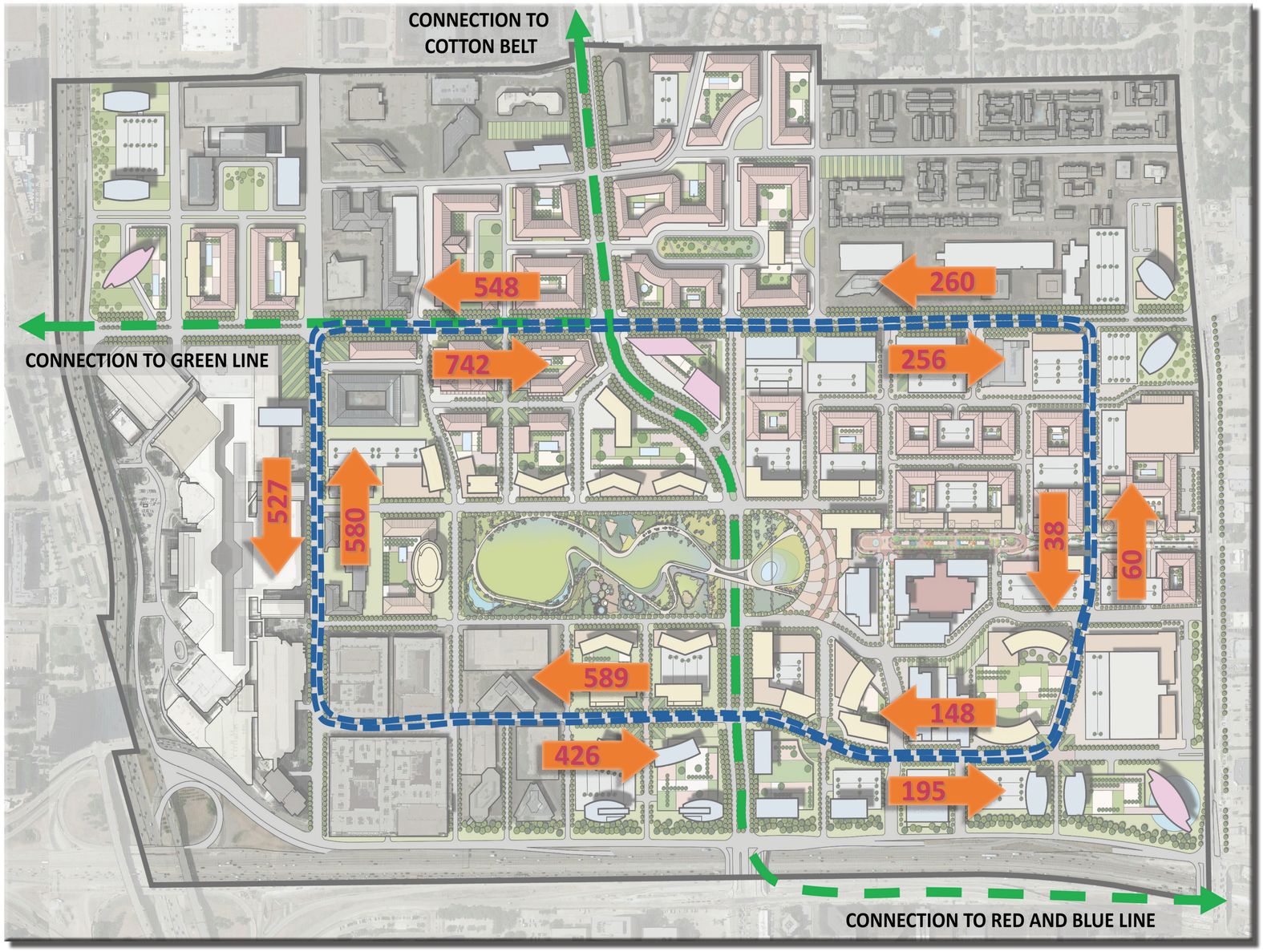
Note: The details, locations and alignments displayed are conceptual and do not represent the plans or intentions of any other entity outside of the Dallas Midtown ATS Study.

ATS RIDERSHIP DEMAND

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Ridership Estimate Assumptions

- Full Midtown district build-out
- Regional connections to:
  - Red and Blue DART Line
  - Green DART Line
  - Cotton Belt
- Shared parking strategy
- 6 ATS stations in Midtown
- ATS alignment and regional connections as depicted



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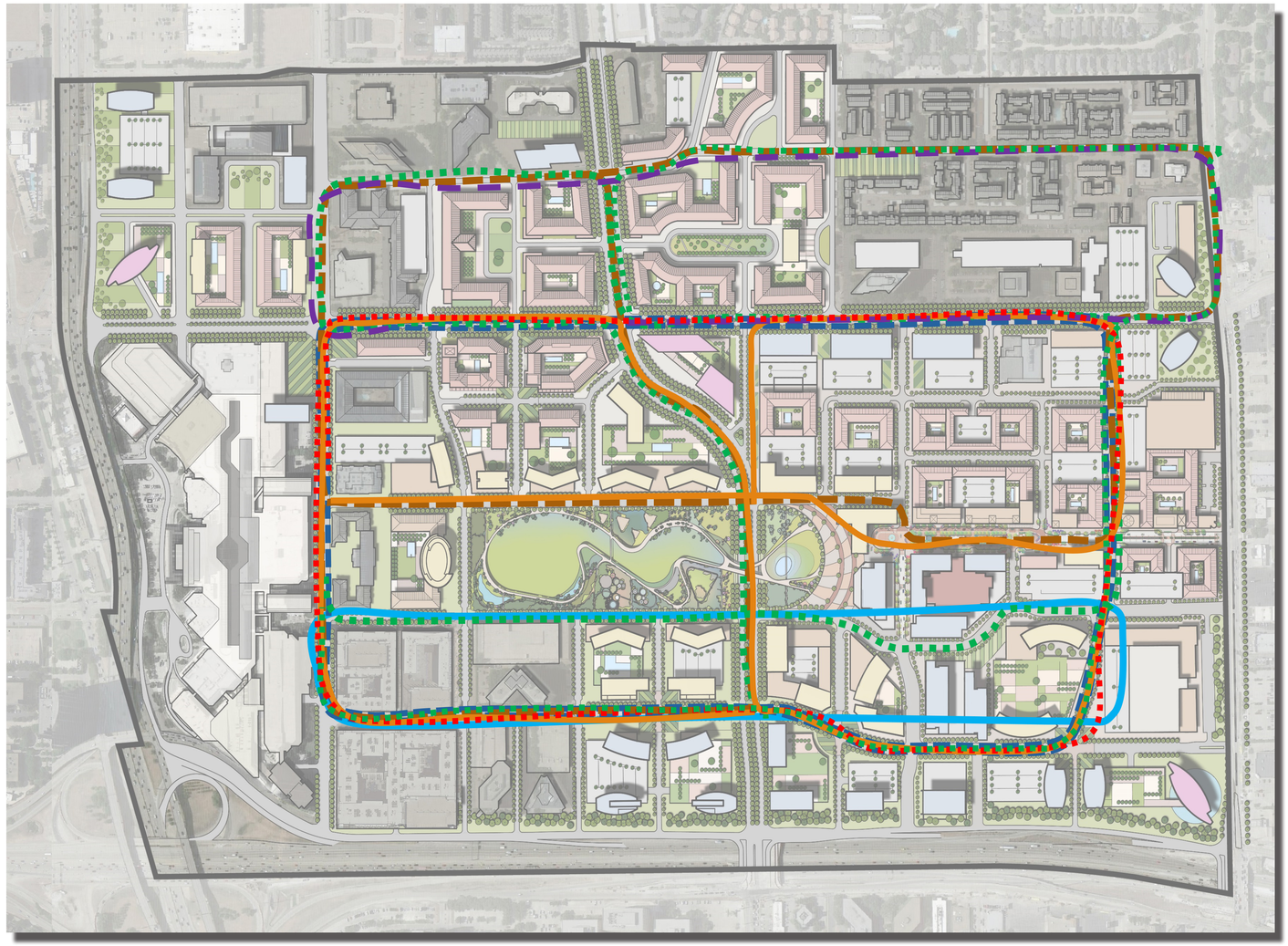
ALIGNMENT

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

KEY FACTORS IN ALTERNATIVE ANALYSIS

- Feasibility of alignment (ROW and vehicle technology)
- Optimization of alignment/station locations
  - » Transit catchment area
  - » Visibility/wayfinding/ease-of-use
- Level of Service
  - » Operational LOS
  - » Failure management flexibility
- Multi-modal connectivity
- Scale Impacts
- Expandability
  - » Technology development
  - » Infrasturcture requirements
- Traffic Impacts
- Passenger Types
  - » Daily commute
  - » Event-based



Results of alternative alignment analysis using various autonomous technologies and routing schemes

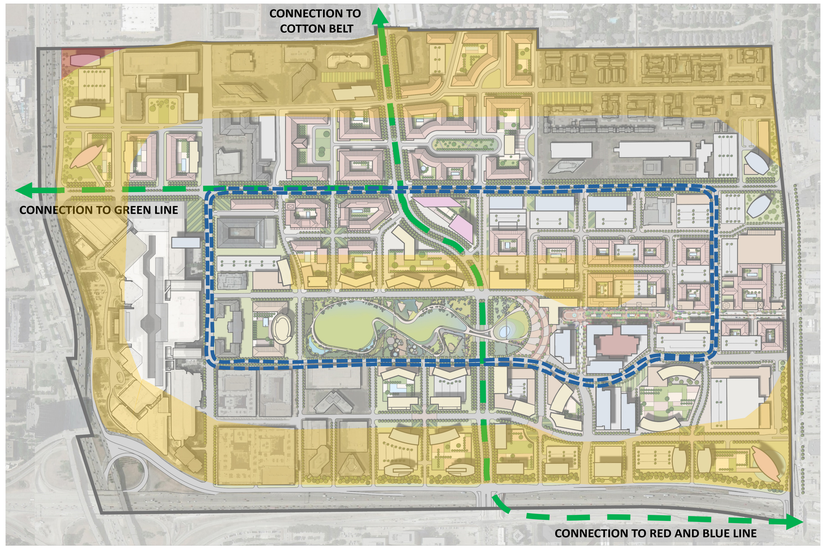
ALIGNMENT

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

WHICH ALIGNMENT ALTERNATIVE DOES IT BETTER?

> 528 ft (2 min walk)
> 1,320 ft (5 min walk)

ALTERNATIVE ALIGNMENT



Proximity to Midtown Park

Proximity to primary intersections / roadways

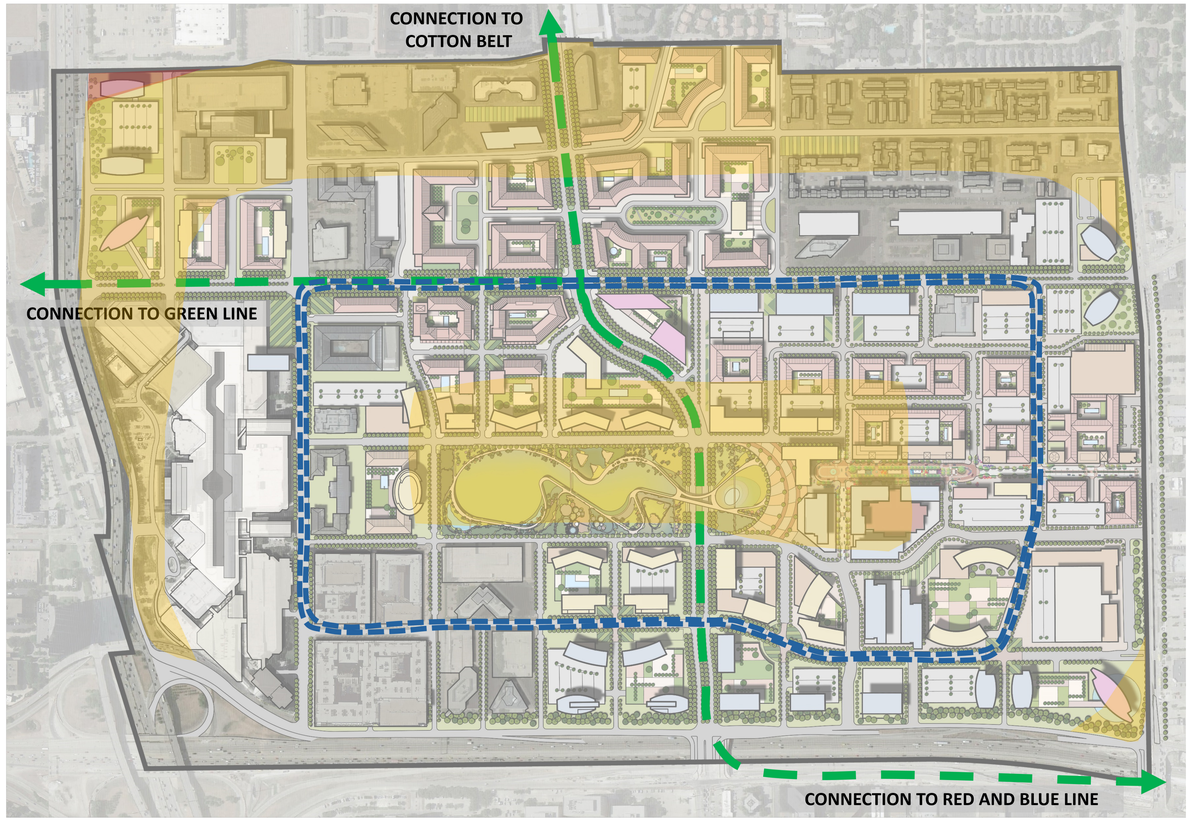
Direct connection to Midtown development

Potential pedestrian safety conflicts around system

Right-of-way feasibility

Supports parking strategy

PREFERRED ALIGNMENT



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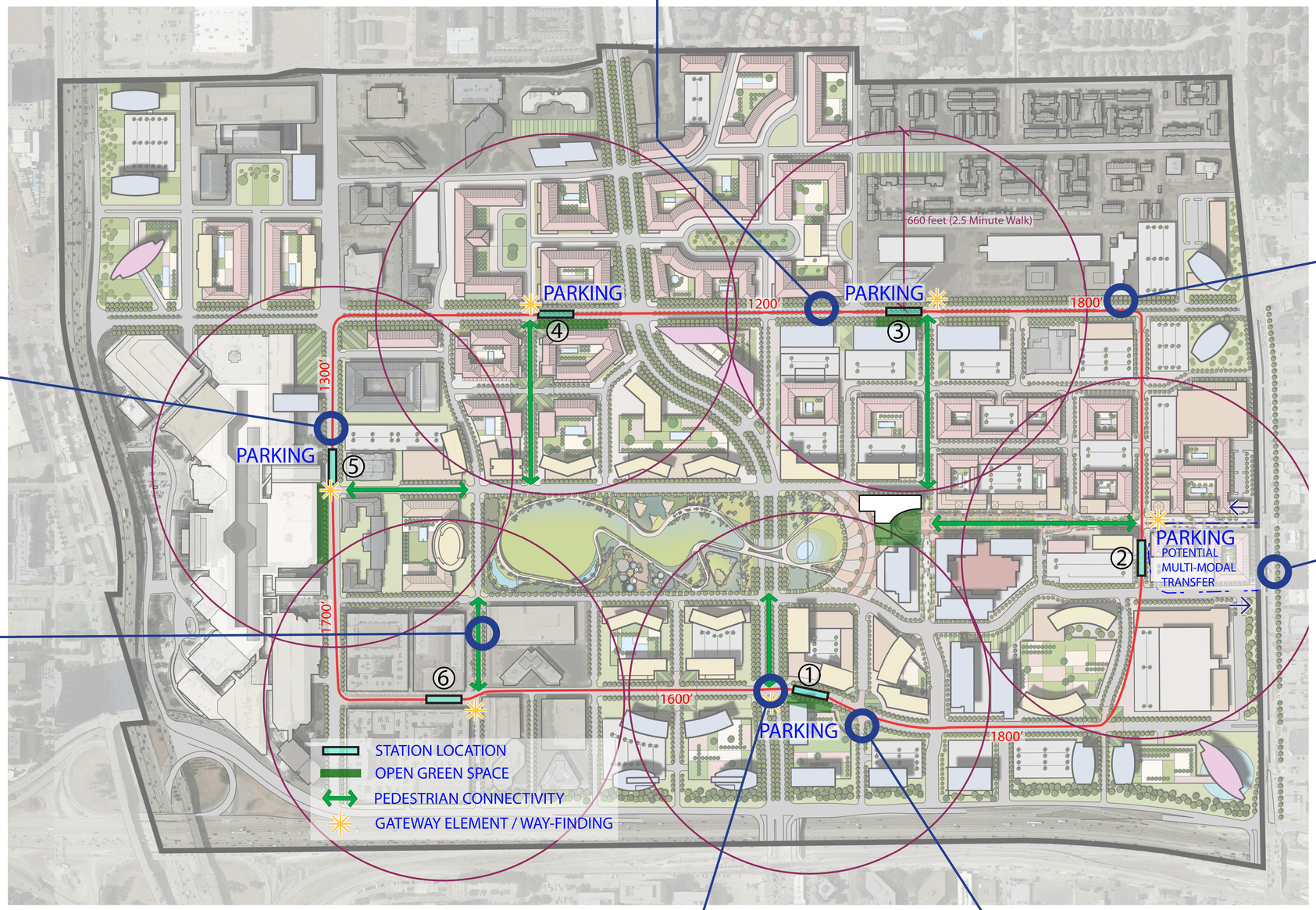
ATS STATION LOCATION

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Utilize existing thoroughfares for ROW, safety and travel consistency

Distance between ATS stations less than 1800’ (5 minute walk) from each other

Convenient access to major developments



Optimized on/off LBJ ramp access on Preston Road

Pedestrian “boulevard” connections from ATS stations to Midtown Park

Access along Montfort Drive for arterial traffic

Parking concentrated around perimeter of Midtown to catch interior traffic

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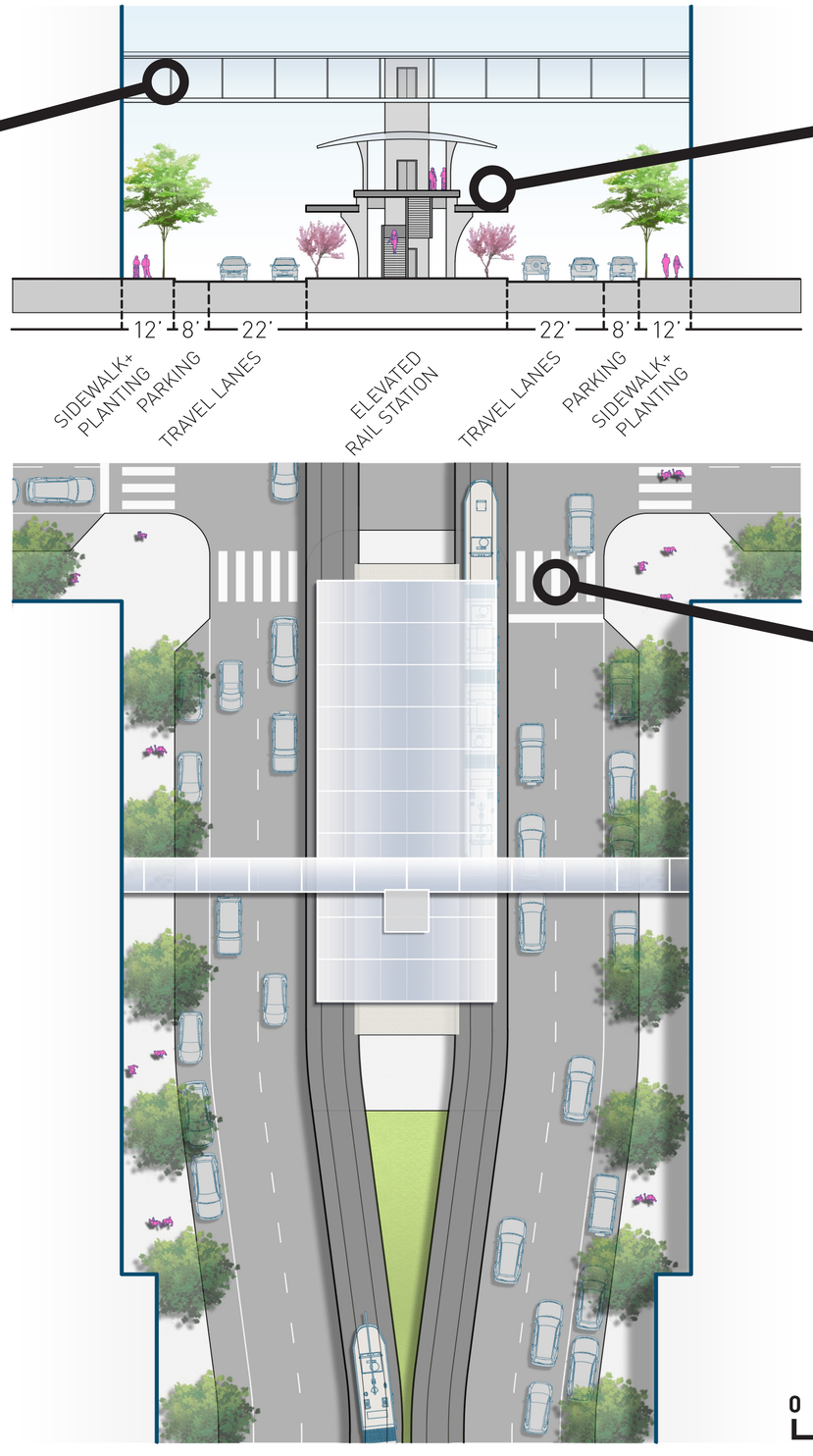
ATS STATION CONCEPT

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Aerial connections to surrounding development

Elevated guideway minimizes traffic impacts and increases safety and operations



Use existing street crossings for driver comprehension

0 20' 40'

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ATS VEHICLE OPTIONS

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Automated People Mover

Group Rapid Transit

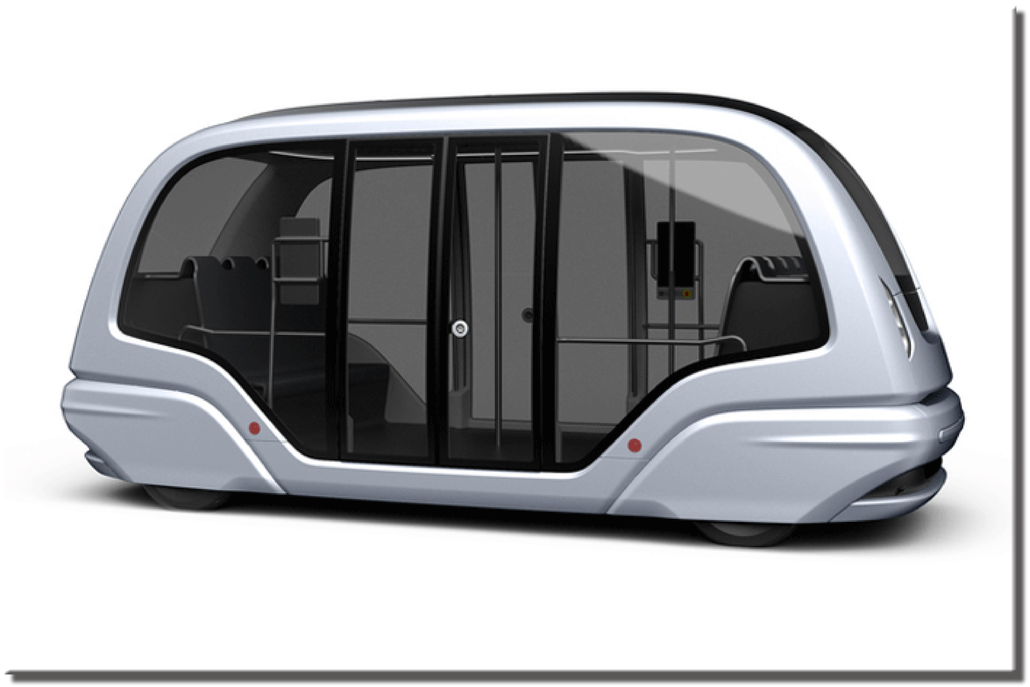

Photo credit: 2getthere and DFW

ATS VEHICLE DETAILS

DALLAS MIDTOWN AUTOMATED TRANSPORTATION SYSTEM STUDY

Autonomous Vehicle Characteristics

	Autonomous People Mover	Group Rapid Transit
Passenger Capacity (people/car)	105	12-21
Fleet Size Needed (per direction)	5 cars	22 cars
Headway Capabilities (minutes)	2-4	1
Max. Vehicle Speed (miles per hour)	50	30
Operational Capacity (persons/hour)	1,800	840
Operational Efficiency (peak hour)	41%	88%
System Expandability	▸ Elevated guideway infrastructure ▸ Specialized track required ▸ System configuration limited	▸ Elevated guideway infrastructure ▸ No specialized track required ▸ System configuration more flexible with independent vehicles

Total System Implementation Cost Estimate* (Million USD)

	Autonomous People Mover	Group Rapid Transit	Light Rail Train
Internal Circulator** (2.2 mile loop)	$293	$241	N/A
Regional Connections*** (~14 miles)	$988	N/A	$1,471

*Cost estimates are conceptual in nature and subject to change with further design and detail

**Conceptual estimates based on right-of-way aquisition, utility displacement, necessary traffic improvements, station/facility and guideway constructions costs and vehicle procurement costs.

***Conceptual estimates for LRT are assumed to be at-grade. Regional estimates do not include facility or vehicle costs as an operational analysis was not performed for regional connections.

COMMENTS

Find out more about North Central Texas Council of Governments'

Regional People Mover Initiative

www.nctcog.org/trans/plan/transit/emerging-transit-trends/people-mover

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