



DALLAS MIDTOWN
A U T O M A T E D
T R A N S P O R T A T I O N
S Y S T E M S T U D Y

Dallas Midtown Automated Transportation System Study

Study Review Committee Meeting #5

February 12, 2019



North Central Texas
Council of Governments

JACOBS[®]



WALKER
CONSULTANTS

Safety Minute



Avoid UFOs Becoming Secondary Collisions

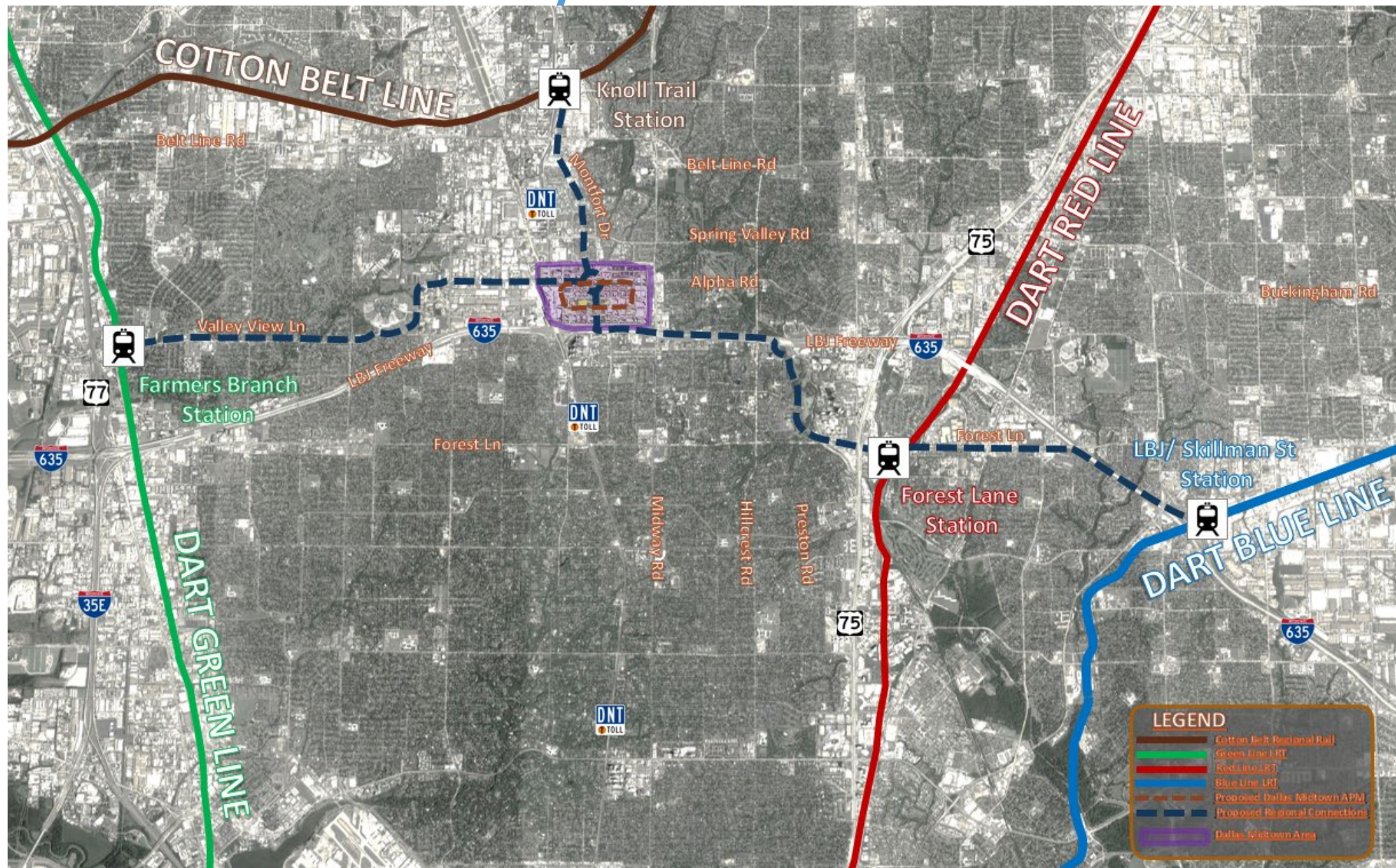
- Over 13,000 injuries caused by ordinary objects each year
- Safest place to store items in passenger compartment is on the floor behind the driver or passenger seat
- Driver's risk of fatality increases 25% when unrestrained persons in the car
- Everyday objects gain impact through force and sudden direction alteration. While traveling at least 31 mph:
 - Objects have same force as if dropped from a two-story building
 - Objects will impact with more than 30X their weight
 - Example: 16-ounce water bottle at 50mph = striking force of 44-pound object

[A Crash Test Following a Visit to the Hardware Store](#)

Agenda

- Proposed Business Case
- Highlighted Case Studies
- Governance Structure SWOT Analysis
- Implementation Schedule
- Discussion
- Next Steps

Regional Connectivity





Proposed Business Case

Proposed Shared Parking



❖ Number of Spaces

- Base (no shared facilities): 68,000 total, 49,700 new
- Shared (existing mode split): 53,801 total, 32,501 new
- Shared Plus (recommended mode split): 42,204 total, 20,904 new

❖ Location Considerations

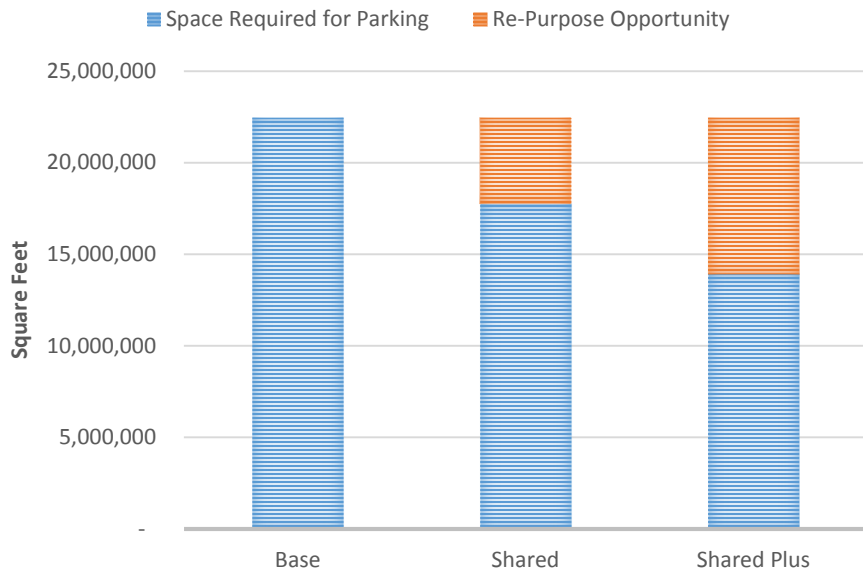
- Proximity to ATS station (< 1/10 mile preferred)
- Access to road planned for vehicular circulation
- Potential to interface with transit
- Proximity to multiple uses/hubs

❖ Implementation Cost

- Capital Cost (one-time):
 - Base: \$1.9B—2.1B
 - Shared: \$900M—1B
 - Recommended: \$600M—700M
- Maintenance Cost (annual at total build):
 - Base: \$13M—15M
 - Shared: \$11M—12M
 - Shared Plus: \$9M—10M

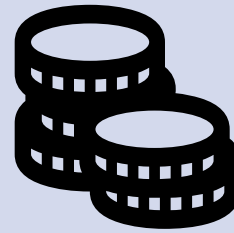
Potential Savings Impacts (through capitalizing on shared parking synergies)

What potential benefits could result from sharing parking resources and re-purposing space from those synergies to a use that brings in revenue/sales tax and higher property value?



Benefit* (\$M)

Private	\$0	\$70	\$125
Public	\$0	\$6	\$11
Total (\$M)	\$0	\$76	\$136



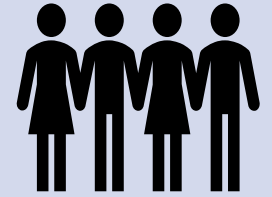
Private Benefits

- Increase in Property Value
- Increase in Sales Revenue



Public Benefits

- Increase in Property Tax Revenue
- Increase in Sales Tax



Societal Benefits

- Increased employment opportunities

Proposed Autonomous Transportation System (ATS)



❖ Route Alignment

- Elevated 2.2-mile loop running along James Temple Dr, Alpha Rd and Noel Rd

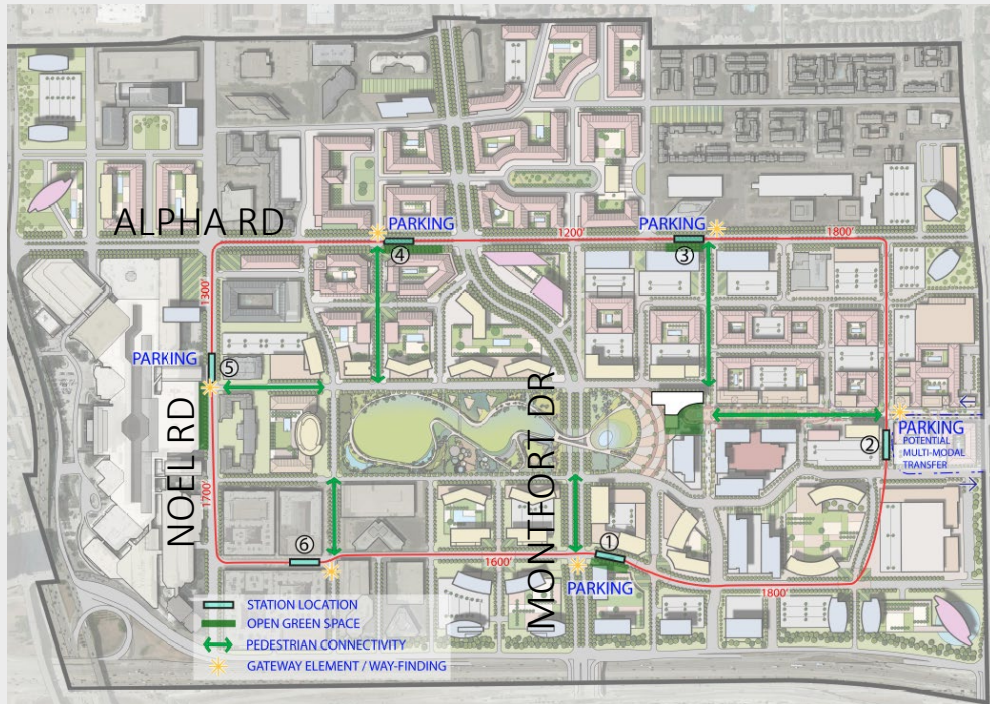
❖ ATS Vehicle

- Group Rapid Transit
 - Vehicle Capacity: 12-21 passengers/vehicle
 - System Capacity: 840 persons/hour (15,120 persons/daily)
- Driverless, automated singular vehicle system on a dedicated, grade-separated facility. Fixed route and stops. Multiple single vehicles circulating.
- Expected headways: 1 minute

❖ Implementation Cost

- Capital Cost: \$240M
- Maintenance Cost: \$1.4M/year
- Conceptual estimate based on ROW acquisition, utility relocation, necessary traffic improvements, station and guideway construction and vehicle procurement

Parking and Transportation Management



❖ Why a combined system?

- Single-source entity to manage primary District amenities
- Use parking management tools and technology (mobile apps) to encourage ATS ridership and reduce SOV trips
 - Mobility as a Service (MaaS) application to meet multi-modal needs
- Parking is potential revenue source for ATS O&M
- Stronger funding structure
 - Systematic (no external dependents)
 - Replacing fuel-burning trips with electric-powered GRT

❖ Governance Types

- Public (Primary)
- Private (Primary)
- Public Private Partnership



Highlighted Case Studies

Sundance Square – Fort Worth, TX



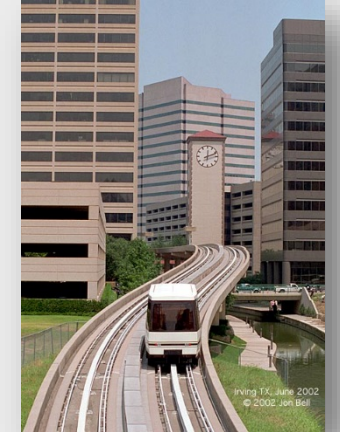
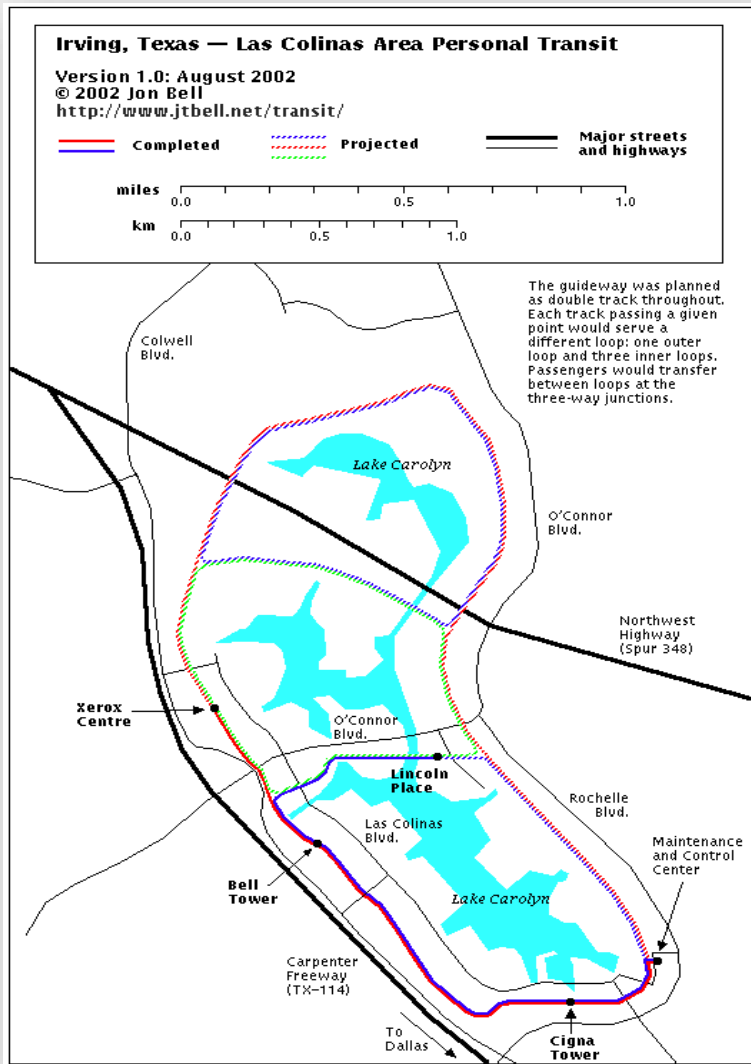
❖ Governance Structure

- Private (Primary) with TIF funding

❖ Key Characteristics

- Started through extensive land assemblage of blighted area by a private entity (Bass Brothers Enterprises)
- Some upfront costs for portions of the development reimbursed through the Downtown Tax Increment Financing District (TIF)
- 35 contiguous blocks of development plus three garages and a valet service
- Required the extensive interest of a private developer, and belief on the behalf of the developer that the development would yield ample return to justify investment
- Includes maintenance and operation of “Molly the Trolley”

Las Colinas People Mover – Las Colinas, TX



❖ Governance Structure

- Public

❖ Key Characteristics

- One-third of planned route completed in 1986
- Service began in 1989 by vendors
- After 5 years, operating control was turned over to City of Dallas Utility and Reclamation District
- Operations closed from 1993-1996 for budgetary reasons
- Ridership jumped over 500% when DART was connected in 2014

San Francisco Presidio – San Francisco, CA



❖ Governance Structure

- Public Private Partnership

❖ Key Characteristics

- New freeway connection from Golden Gate Bridge to San Francisco includes new high-tech tunnels and extensive improvements to national lands
- Private entity selected will design, build, finance, operate and maintain in 30-year agreement
- Concessionaire receives milestone payments throughout construction and performance-based quarterly payments throughout the term

Irvine Spectrum – Irvine, CA



❖ Governance Structure

- P3: Transportation Management Authority (TMA)

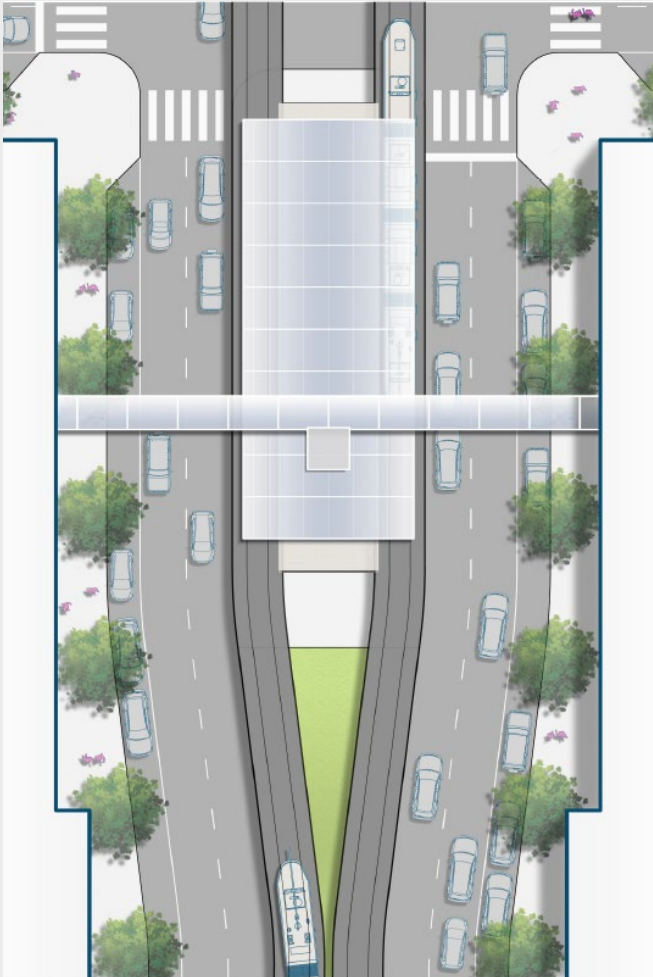
❖ Key Characteristics

- Non-profit TMA: Spectrumotion
- Offers assistance to commuters, manages transportation demand management programs, monitors success
- Funded by property owners in Irvine Spectrum district (includes 27M square feet of mixed-use development) through a property assessment, similar to HOA fee



Governance Structure SWOT Analysis

Funding Options



❖ Private

- Infrastructure funds or banks
 - New Market Tax Credit Program (NMTC)
 - Transportation Infrastructure and Finance and Innovation Act (TIFIA)
 - Opportunity Funds – Vehicle that provides tax incentives to investors
- Access fees/ Farebox
- Corporate pre-paid tickets
- Sponsorships/advertising
- Private Donations

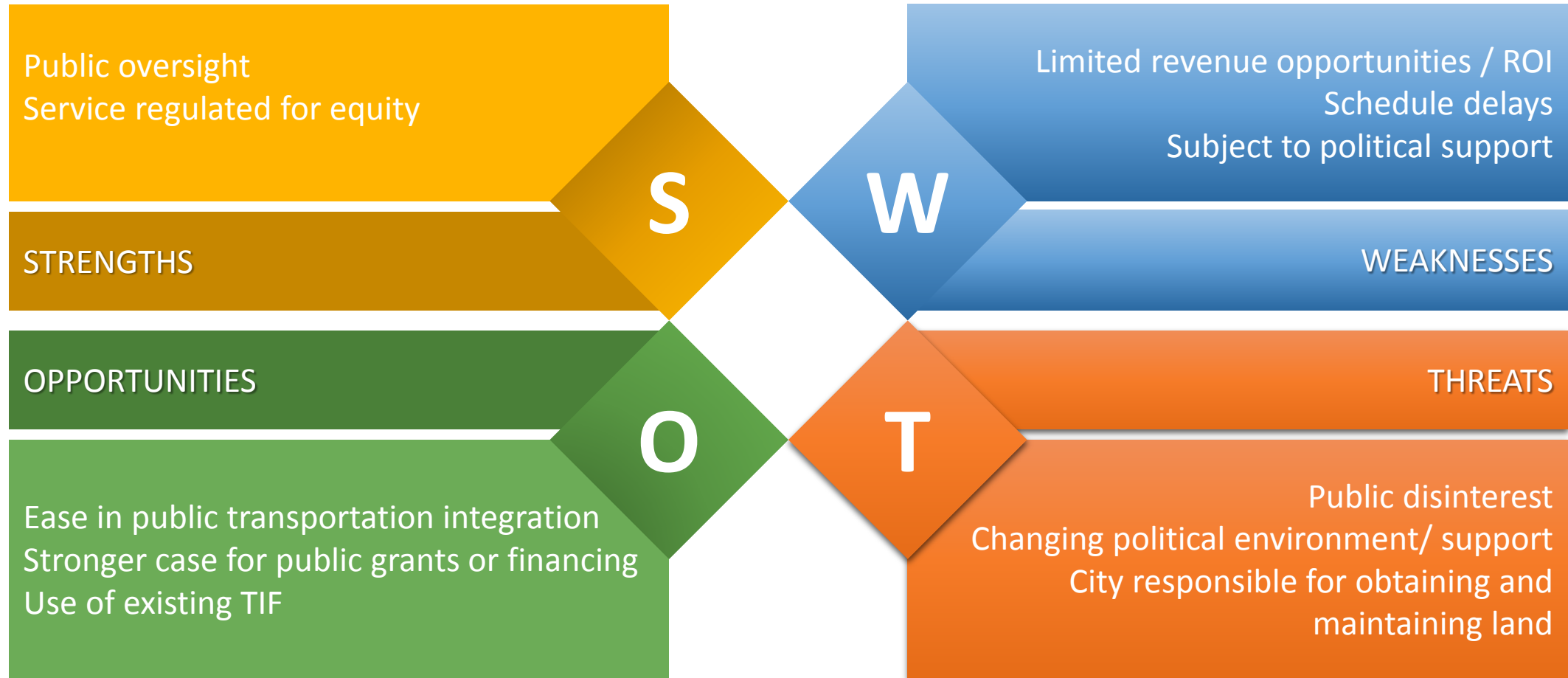
❖ Public

- Federal grants (safety/mobility/new start)
- TIF
- Infrastructure funding programs (TIFIA)
- Access fees/ Farebox

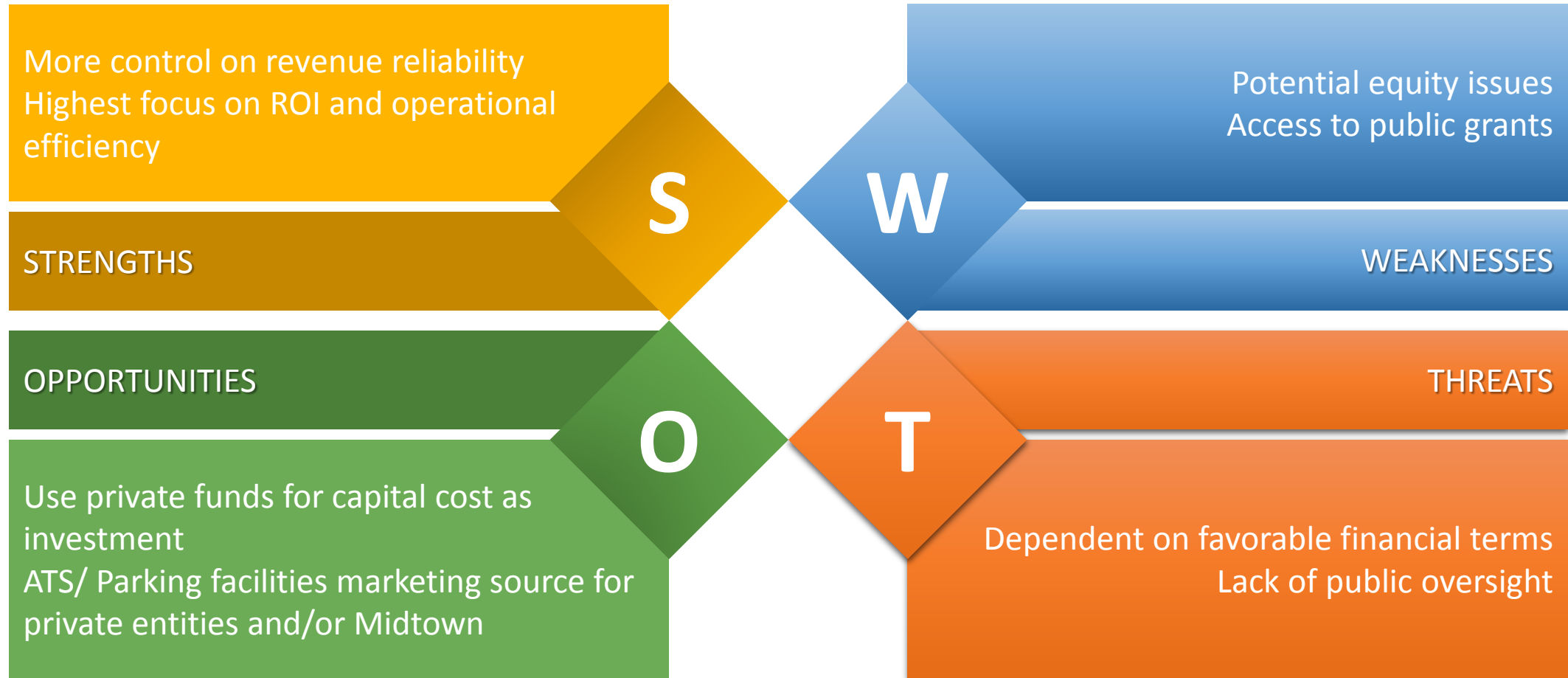
❖ Public Private Partnership

- All Private/Public sources

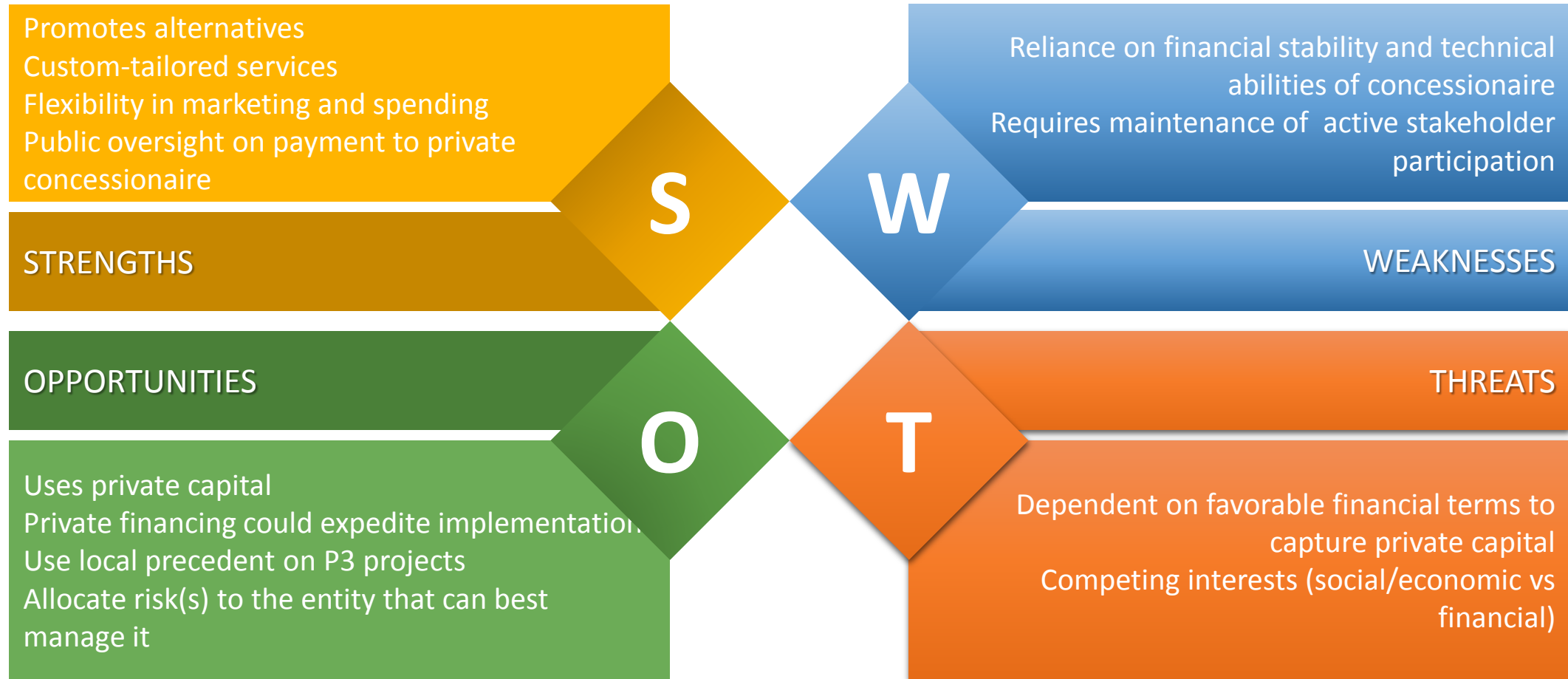
Public (Primary)



Private (Primary)



Public Private Partnership





Discussion

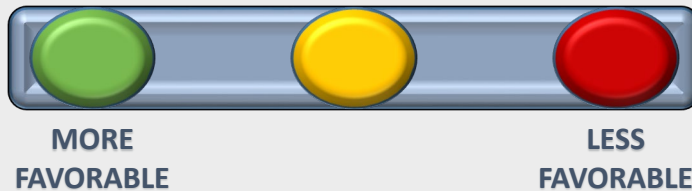


Implementation Schedule

Implementation Components

Implementation Option Scoring Criteria:

RISK
FLEXIBILITY
COST
TIME



❖ Governance Structure

- Entity selected/created or public agency tasked with leading T/PMA

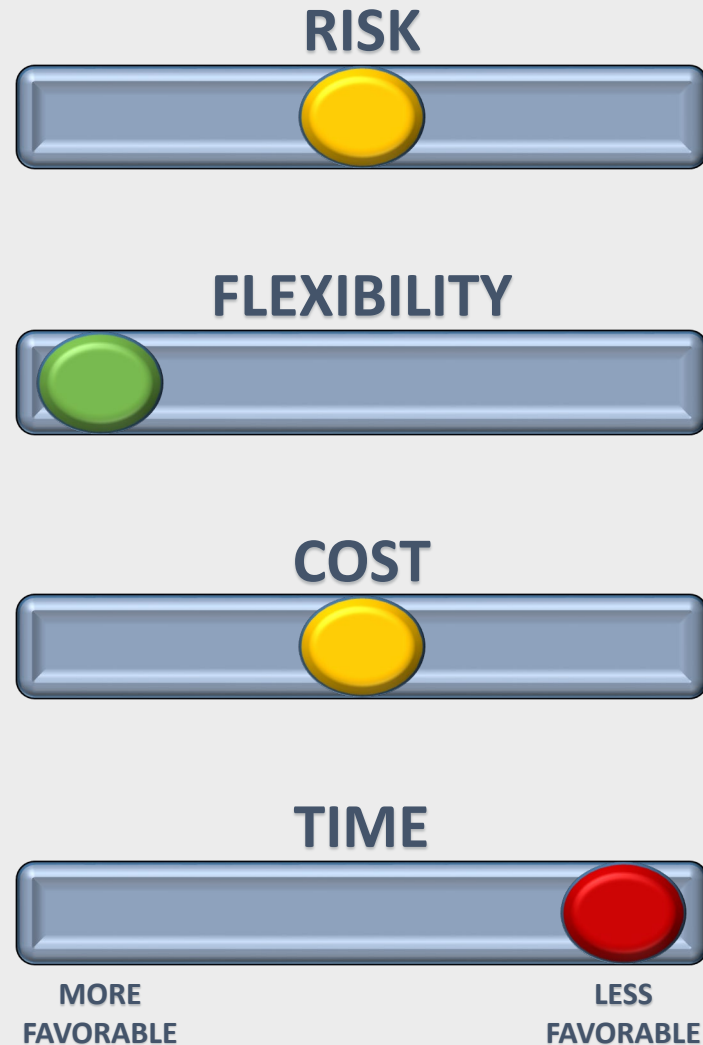
❖ Shared Parking System

- Regulatory changes to make T/PMA responsible for parking regulation
- Deed existing parking assets to T/PMA authority or construct new structures to meet existing demand

❖ ATS Circulator

- ATS vehicle technology (Group Rapid Transit) available for deployment
- Preferred alignment makes primary use of existing ROW

Implementation-Phased



❖ Shared Parking System

- Use of existing parking facilities to meet existing demand
- Construct new facilities in predetermined locations as development occurs and demand increases

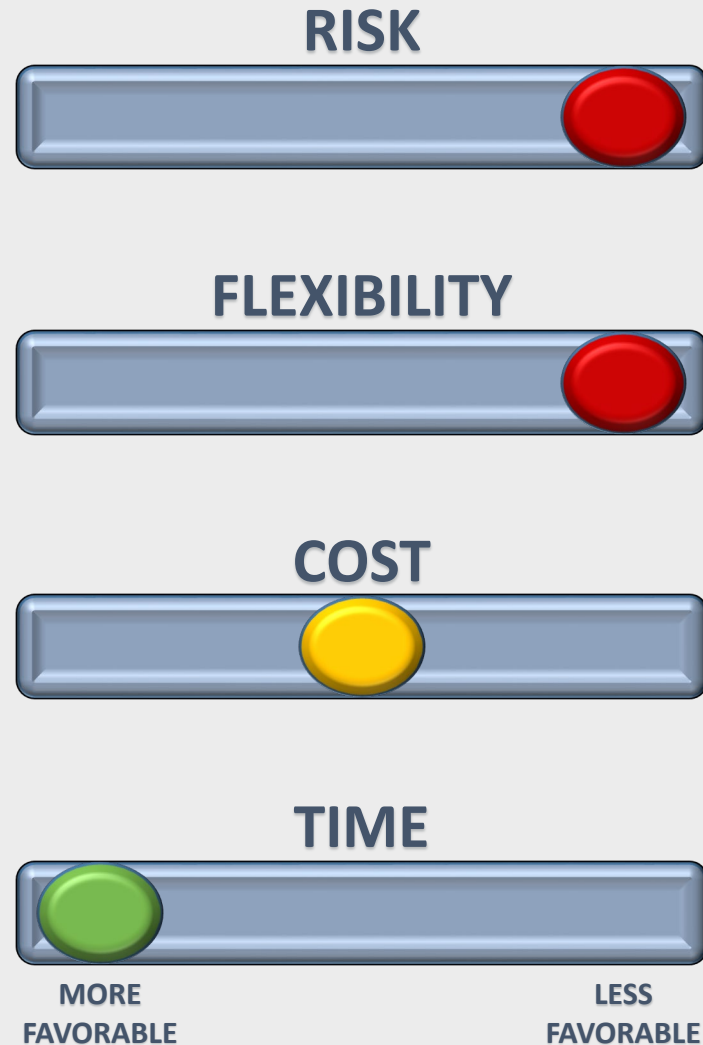
❖ ATS Circulator

- Construct 2.2 mile loop in segments as Midtown development occurs

❖ Pros/Cons

- Pros: Flexibility in development to match Midtown development pace
- Cons: Multiple funding agreements required
Risk of incomplete ATS system when phased

Implementation-Total Build



❖ Shared Parking System

- Build out parking demand in anticipation of planned development (within reason) at once

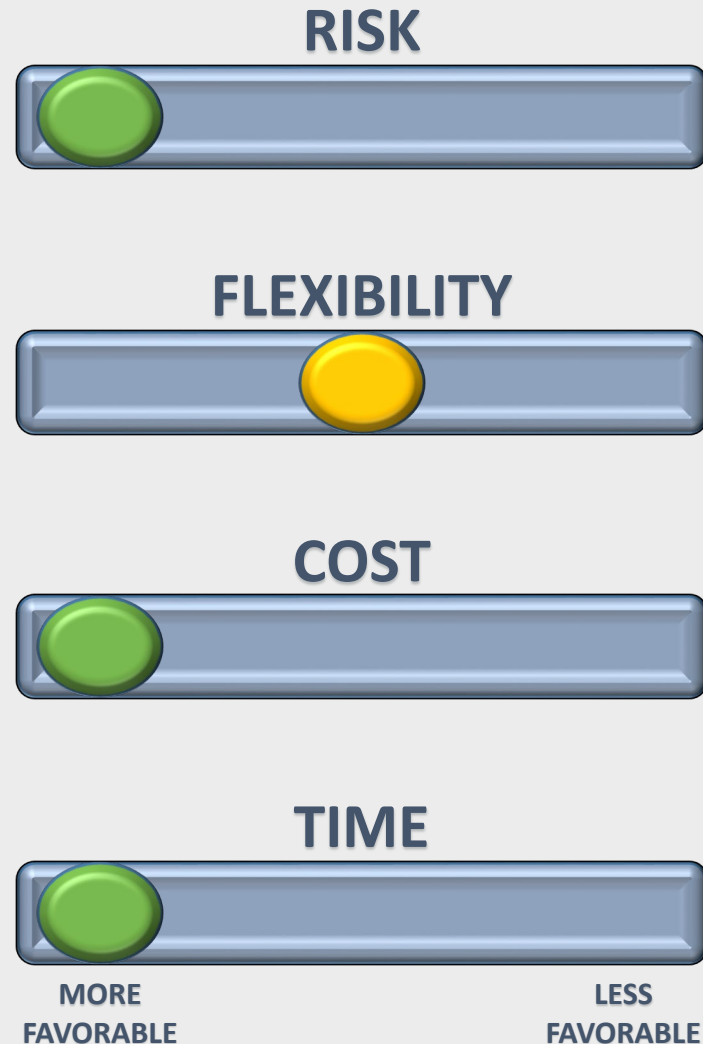
❖ ATS Circulator

- Complete 2.2 mile build-out of ATS system
- Planned interface with existing/planned developments accounted for up front

❖ Pros/Cons

- Pros: Guarantees relevant shared-parking locations
Full ATS loop bolsters existing development and encourages planned development
- Cons: Risk of over-build
More risk in investment strategy
Restrict interface with future developments

Implementation-Blended



❖ Shared Parking System

- Use of existing parking facilities to meet existing demand
- Construct new facilities in predetermined locations as development occurs and demand increases

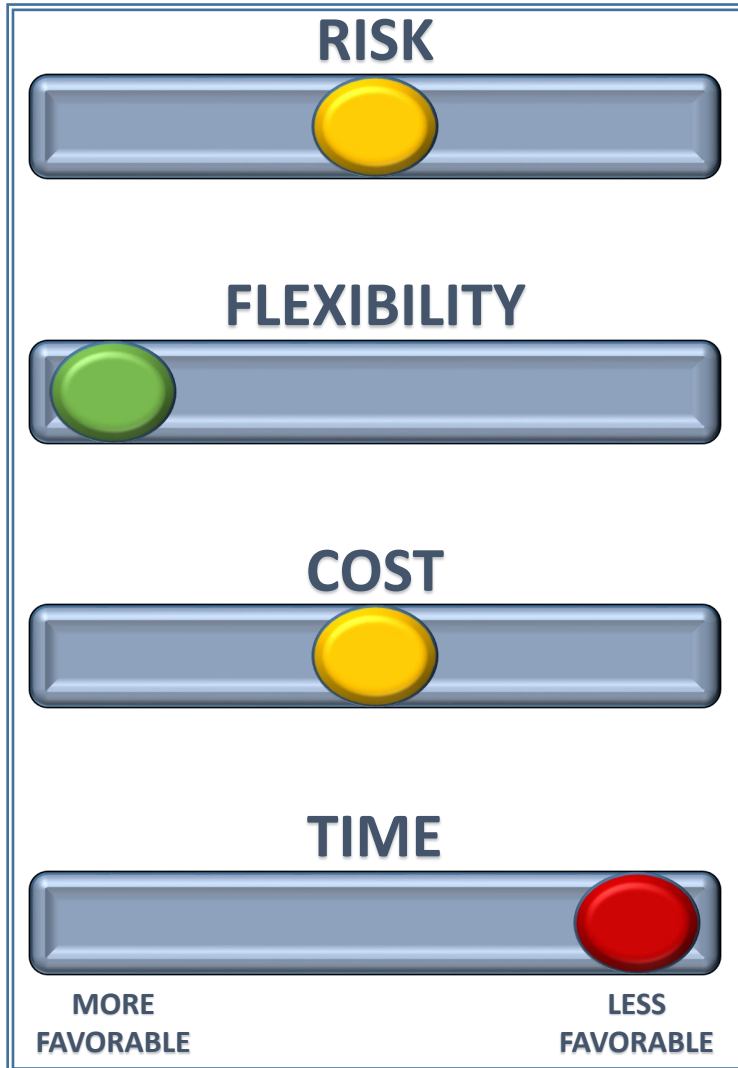
❖ ATS Circulator

- Complete 2.2 mile build-out of ATS system
- Planned interface with existing/planned developments accounted for up front

❖ Pros/Cons

- Pros: Full ATS loop bolsters existing development and encourages planned development
Flexibility in development to match Midtown development pace
- Cons: Restrict interface with future developments

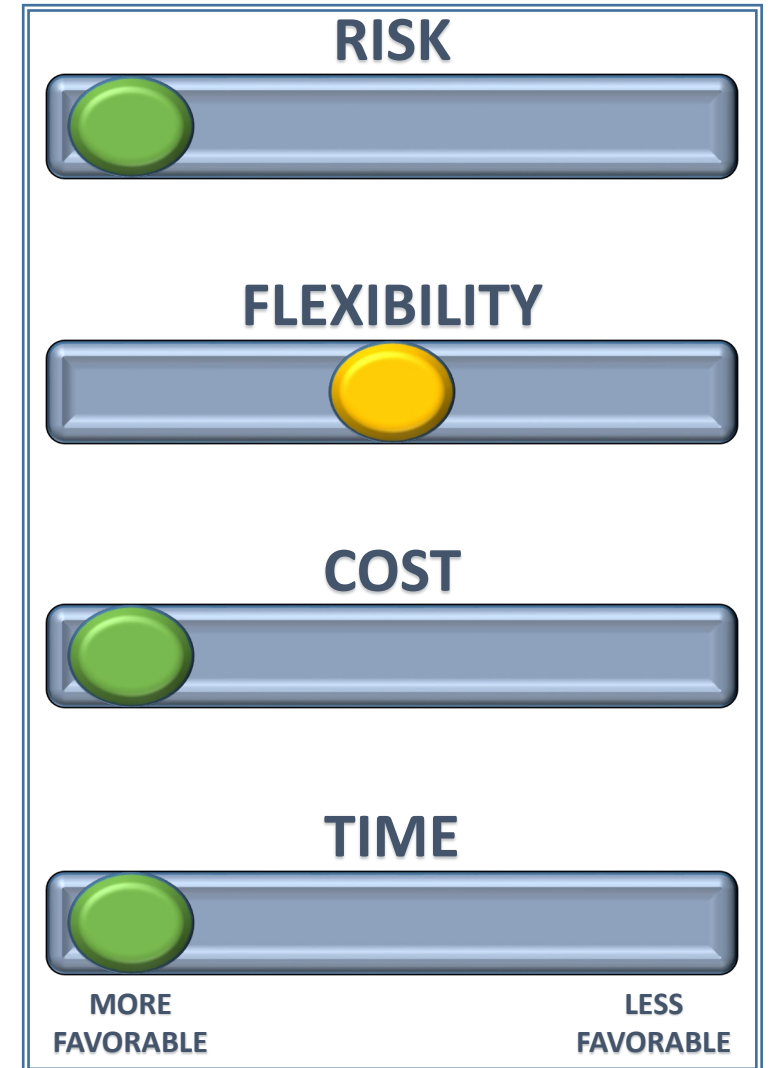
PHASED



TOTAL BUILD



BLENDED





Discussion

Discussion and Recommendations

❖ Discussion Goals

- Participant discussion to determine final recommendations
- Direction regarding recommendations for final report



Next Steps

Next Steps



❖ Study Conclusion Timeline

- February/March – Incorporate SRC feedback into final implementation and governance recommendations
- March/April – Team to produce Final Report
- May – Final Report Submitted

❖ Future SRC Meetings

- March 28, 2019
 - Finalize Implementation Recommendations
 - Finalize Governance Recommendations
 - Finalize Final Project Recommendations for Final Report

❖ Future Public Meetings

- Spring 2019- Presentation of Final Recommendations

Thank you for attending!

❖ Dallas Midtown Parking Study

Karla Weaver, AICP – NCTCOG – Program Manager

- KWeaver@nctcog.org

Shawn Conrad – NCTCOG – Project Manager

- SConrad@nctcog.org

Casey Wagner, PE – Walker Consultants – Sr. Project Manager

- CWagner@walkerconsultants.com

Mallory Baker – Walker Consultants – Project Manager

- MBaker@walkerconsultants.com

Jeff Weckstein – Walker Consultants – Technical Consultant

- JWeckstein@walkerconsultants.com

❖ Dallas Midtown ATS Study

Dan Lamers, PE – NCTCOG – Sr. Program Manager

- DLamers@nctcog.org

Kevin Feldt, AICP – NCTCOG – Program Manager

- KFeldt@nctcog.org

Brian Crooks – NCTCOG – Project Manager

- BCrooks@nctcog.org

Jeremy Wyndham, PE – Jacobs – Sr. Project Manager

- Jeremy.Wyndham@Jacobs.com

Marcus Ashdown, AICP – Jacobs – Project Manager

- Marcus.Ashdown@Jacobs.com

Amanda O’Neal – K Strategies – Public Involvement

- AONeal@kstrategies.com

Brian Burkhard, PE – Jacobs – Global Technology Leader

- Brian.Burkhard@Jacobs.com

Nishant Kukadia, AICP, PMP – Jacobs – Transportation Planning Solutions Leader

- Nishant.Kukadia@Jacobs.com





Extra Information

Denver RTD – Denver, CO



❖ Governance Structure

- P3: RFP/Concession and Lease Agreement

❖ Key Characteristics

- Long-term bid award and contract between RTD and Denver Transit Partners (DTP) to build, operate, and maintain multiple commuter rail lines in Denver Metro
- Two phases of contract:
 - Phase I: Construct lines pursuant to various requirements and regulations (DTP reimbursed)
 - Phase II: Operate and maintain lines (DTP paid for services; beneficiary for percentage of revenues)

Klyde Warren Park – Dallas TX



❖ Governance Structure

- Public Private Partnership

❖ Key Characteristics

- \$1B+ in new development within ¼ mile since announcing construction
- 90% of local residents indicated the park had improved their quality of life
- \$110M cost made up of:
 - \$55M Private
 - \$40M Public
 - \$16M Federal Grant

Detroit People Mover – Detroit MI



❖ Governance Structure

- Public (Primary)- Public Body Corporate

❖ Key Characteristics

- Elevated automated people mover with 13 stations
- Public body corporate with primary oversight and funding from the Detroit Department of Transportation
- Nominal fee to ride (\$0.75); no direct revenues from fees from park-and-ride garages (\$2.50/hour; \$15/day)
- Heavily subsidized by City and State budgets