



Automated Transportation
Systems (ATS)

ATS Development Study

MARTIN BATE | June Public Meeting | 6/12/2023

WASBY
MILE

EXIT 44A
Beckley Ave



transdev

Introduction

NCTCOG's review of emerging technology innovations focuses on:
“**Future-proofing**” infrastructure, providing users with demand-responsive transportation

- Reduce long-term risks of obsolescence of infrastructure
- Utilize solutions that do not require custom guideways to operate

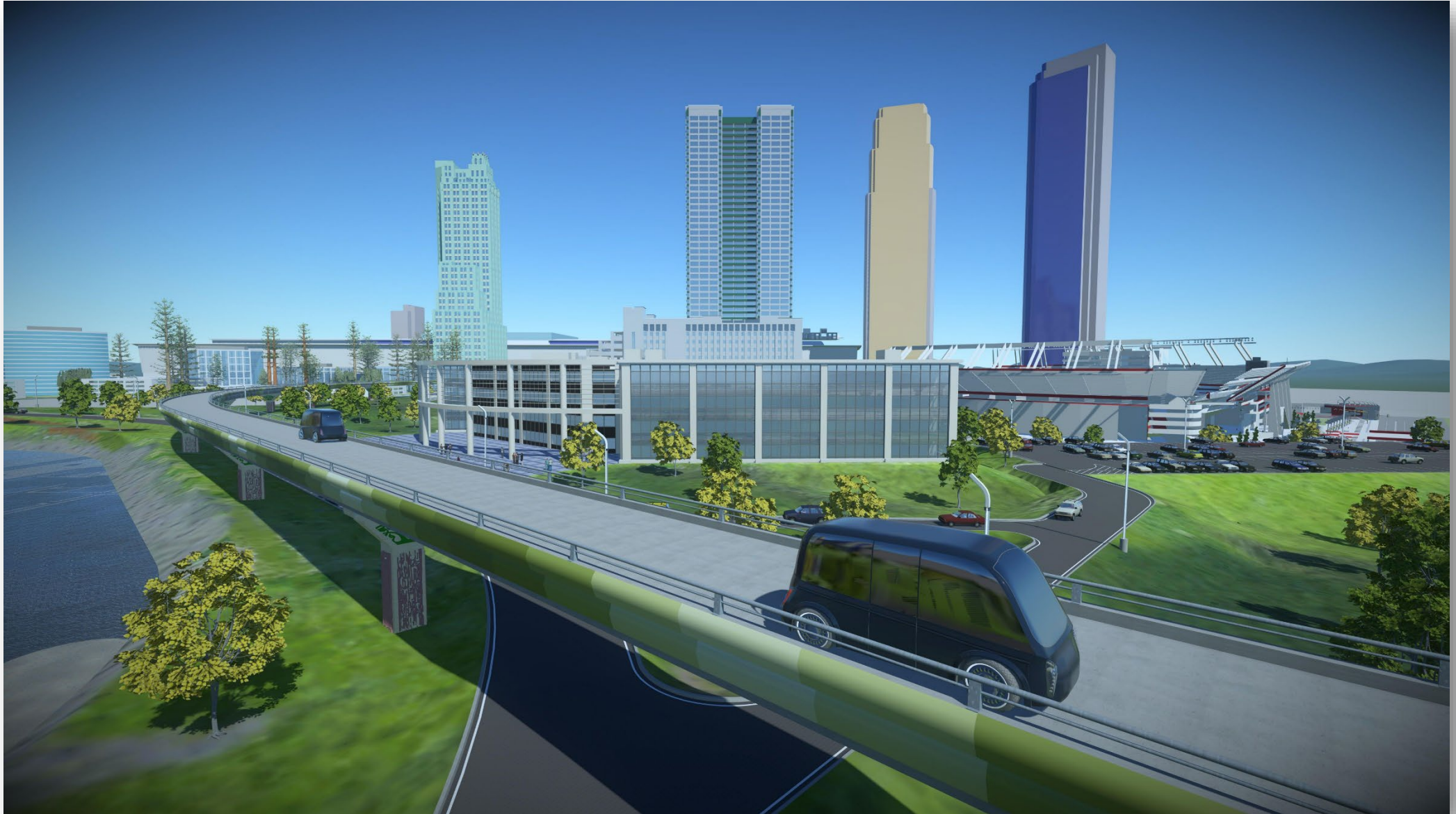
Achieving **economies of scale**

- Use of modular infrastructure
- Independent-running ATS vehicles

Consideration of both **people** and **cargo/goods** movement



Conceptual Rendering: People Mover



Elements of Study

Lea + Elliott served as consultant for this study

Automated Transportation System (ATS) Vehicle Technologies

- Inventory of existing technologies

Wireless Electric Vehicle (EV) Charging Technologies

- Focus on dynamic charging

Standard Guideway Infrastructure Design

- Signature appearance
- Economies of scale

Case Studies

- Retrofit Opportunities
- Pilot Project Opportunities



Technology Identification: Vehicles

Assessment of current and emerging market for ATS vehicles

Technology evaluation using multiple criteria

Result: Inventory of state-of-the-art ATS vehicle technologies



Zoox (Image: Zoox)



Oceaneering (Image: Oceaneering)



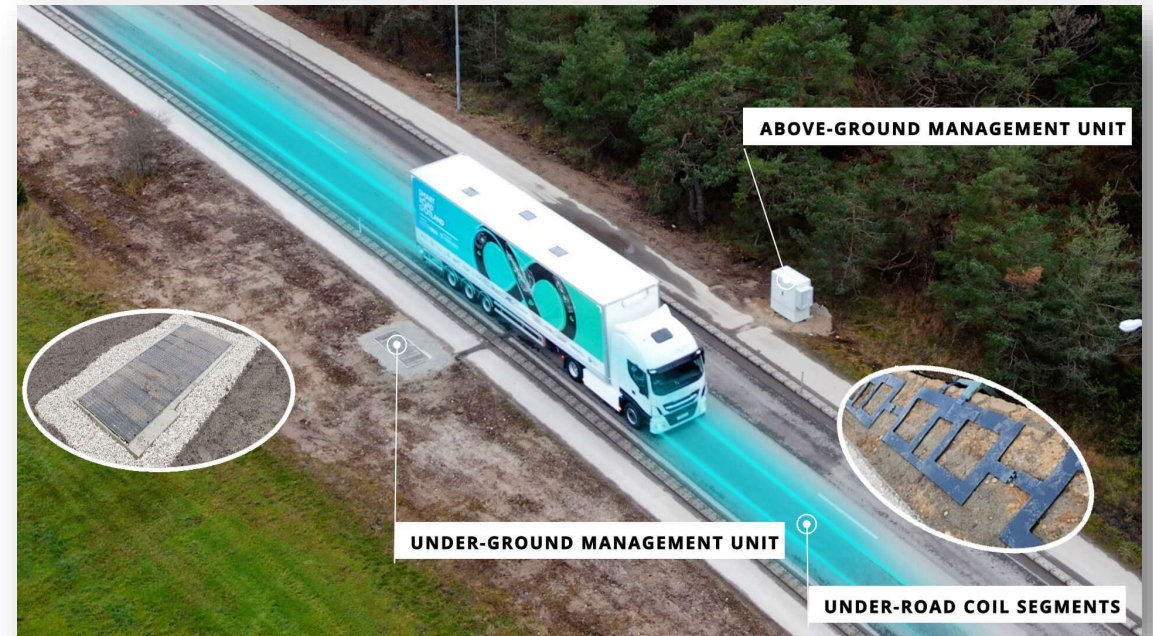
Technology Identification: Wireless Charging

Two types: stationary/opportunity charging, dynamic charging

Focus on **dynamic charging** to potentially reduce fleet requirements, battery size

Ensured ATS vehicles inventoried have wireless charging capabilities in near-term

Dynamic charging in its infancy, shows potential for future ATS applications; continue to monitor state of tech



Conceptual illustration of Electreon wireless charging system (Image: Electreon)

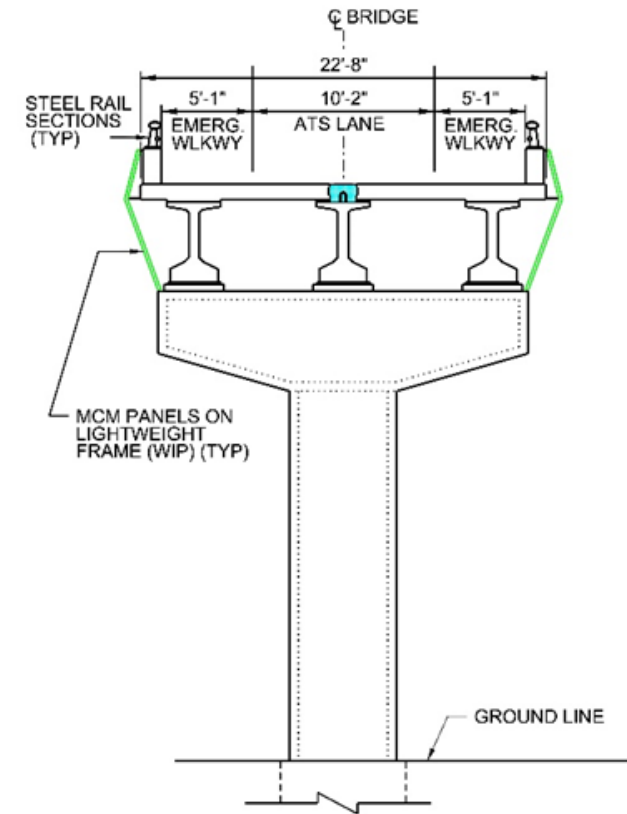


Guideway Design Guidelines

Goal: simple, paved structure with streamlined **lightweight** “signature” appearance, **modular** construction, **innovative** materials and methods

Materials and techniques assessed for:

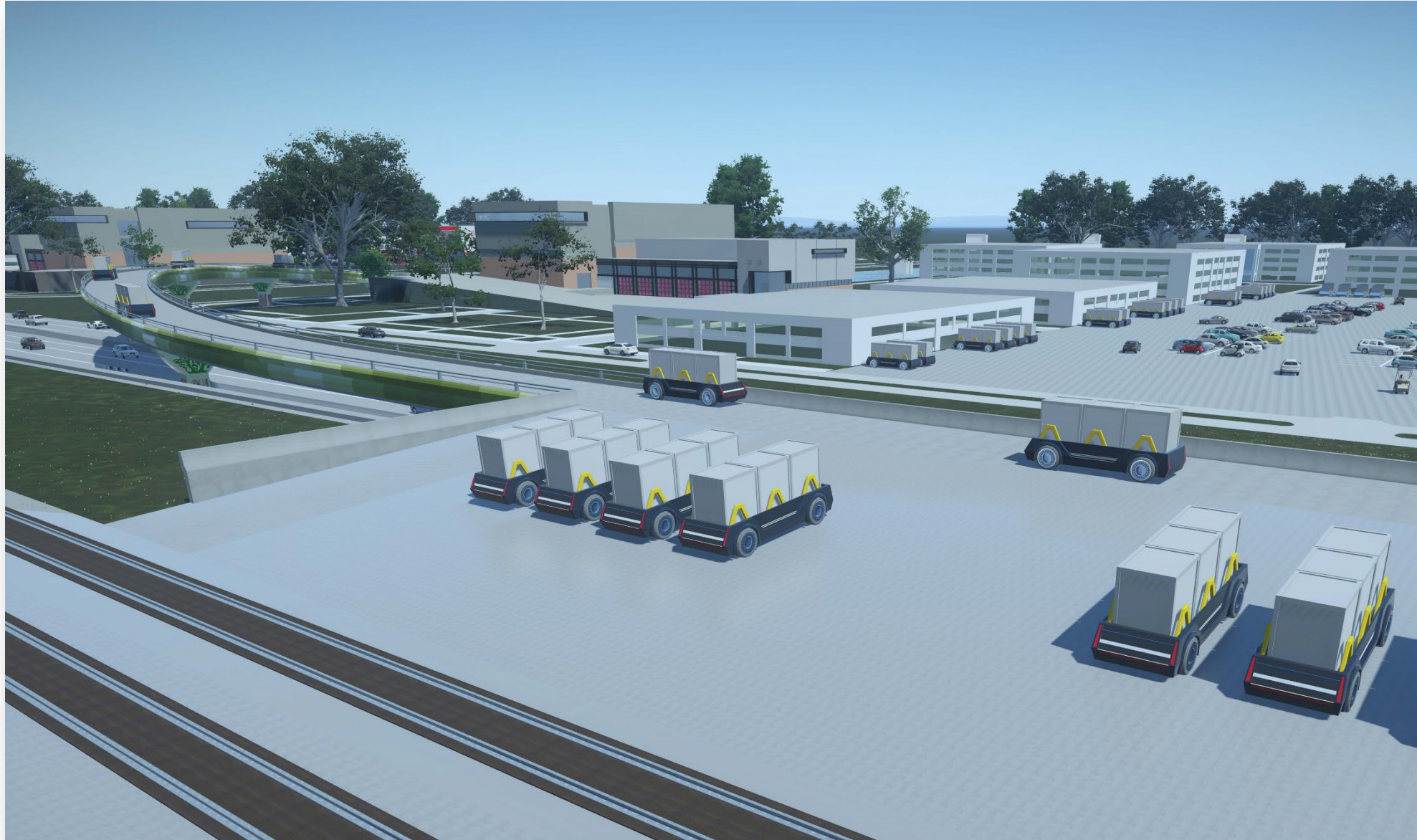
- Environmental sustainability
- Capital, lifecycle/maintenance costs
- Risks for hazards such as fire
- Availability of materials
- Geometric compatibility
- Weight



Unidirectional Concept



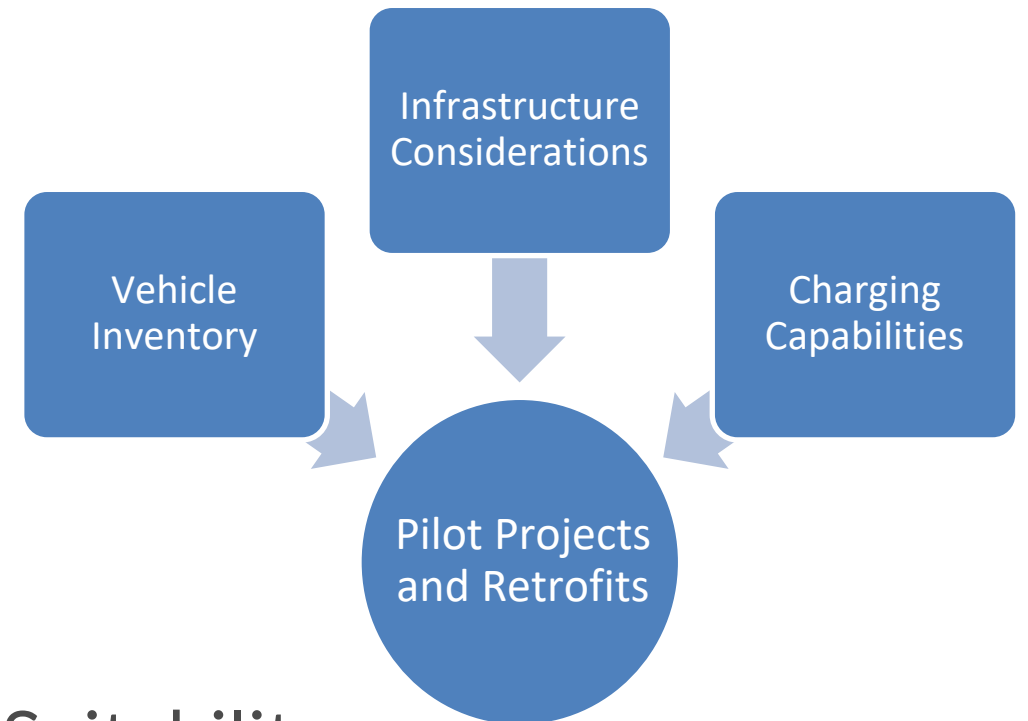
Conceptual Rendering: Goods Mover



Pilot and Retrofit Opportunities

Pilot Projects:

- People: Dallas International District
 - Potential vehicles, guideway materials
- Cargo: GM Arlington Assembly plant
 - Potential vehicles, fleet analysis



Retrofit Opportunities:

- Las Colinas Modernization Concept
- DFW Airport Skylink Modernization Suitability



Conceptual Rendering: Las Colinas



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