DFW HSR Station Plans
People Movers
Hyperloop

Transit-Oriented Development Task Force Meeting
May 1, 2018
Automated Transportation Systems

(People Movers)
Traditional “People Movers”

• Fixed, Closed Guideways
• Limited to One Vehicle Type per System
• Few Deployments Outside of Airports or Entertainment Districts
• Can Have Slow Traveling Vehicles
• Difficult to Scale
• People Only
• Can Be Expensive
Next Generation Features

• Carries Both Freight and People
• Accommodates Multiple Vehicle Types
• Good Early Deployment Environment for Automated Vehicles
• Existing Streets Become Collectors
• As Automated Vehicle Technology Matures, Collector System Grows
• Dedicated ROW
• Lower Cost
• Driverless
What Is New?

• Everything
• Driverless
• Battery Power
• Includes Goods Movement
• Engineering Construction Optimization
• Multiple Funders
• Not “People Movers”
• New Operation Paradigm

Collection-Line Haul-Distribution
Sample ATS Alignment

- **Existing ROW Network**
- **Dedicated ROW Network**
- **Regional Rail Network**
Next Generation Benefits

• Advance “Joint Use” Corridors
• Advance “Last Mile”
• Economies of Scale
• Outside Revenue
Candidate ATS Locations

- Operational
- Proposed but not
  Suggested by Analysis
- Proposed and
  Suggested by Analysis
- New Suggestion from
  Analysis
- Existing Transit
Proposed ATS Locations
Dallas Midtown ATS Study

Former Valley View Mall Site

• 450 Acres
• Includes Galleria Mall

Mixed-Use Development

• Employment
• Residential
• 18-Acre Park
• Pedestrian Friendly
Existing Land Use

Dallas Midtown
Study Area

Land Use (2010)
- Single Family
- Multi Family
- Commercial
- Office
- Retail
- Hotel / Motel
- Institutional / Semipublic
- Utilities
- Parks / Recreation
- Vacant

Miles
0 0.125 0.25 0.5

North Central Texas Council of Governments
2013 Transportation Needs Assessment

- Identified Redevelopment Impacts on Transportation
- Internal Circulator Recommended
- Suggested Regional Rail Connection
Study Purpose

- Identify Needs
- Coordinate with Parking Study
- Recommend Alignment and Technology
  - Internal Circulation
  - External Connections
    - Cotton Belt
    - Red Line
    - Green Line
    - Blue Line
Study Purpose

• Develop Ridership Estimation Tool
• Develop Financial Plan
• Develop Implementation Plan
• Schedule
### Project Schedule

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DFW High-Speed Rail Station Plans
DFW High-Speed Rail

• Connected System

• “One Seat Ride”

• Three Stations
  • Fort Worth
  • Arlington
  • Dallas

Source: Getty Images
High-Speed Rail Recommendations

Corridor-specific alignment, design, and operational characteristics for the intercity passenger, regional passenger, and freight rail systems will be determined through capacity evaluation and ongoing project development. Refined rail forecasts are necessary to determine technology and alignment in future rail corridors.
Current NCTCOG Efforts

• Completed Station Area Studies
• Coordinating with Other MPOs
  Fort Worth to Laredo Corridor
• Preparing for EIS Procurement
  Fort Worth to Dallas
• Assisting Local Governance Entity Creation
DFW Station Areas

Fort Worth

Arlington

Dallas

Arlington

Grand Prairie

Fort Worth

Irving

Dallas
Dallas Area Station Study

- Station Location Identified by Texas Central Partners
- Monitoring Westward Alignment Opportunities
- Coordination Efforts
  - Texas Central Partners Project
  - City of Dallas Station Zone Assessment
  - DART
  - TxDOT
  - NCTCOG Alignment Analysis
Downtown Dallas Station

Source: Texas Central Partners
Dallas Station Zone Assessment

Conducted by City of Dallas

- Funded by Texas Central Partners
- Perkins + Will

Primary Focus Areas

- Urban Fabric
- Mobility and Connectivity
- Open Space Strategy
- Program Analysis
- District Character
Dallas Station Zone Assessment

Four Main “Threads”

• Place Making
  Respond to Existing Context

• Mobility
  Station Building as a Connector

• User Experience
  Programming and Wayfinding

• Sustainability
  Whole Systems Thinking
High-Speed Rail Districts

Residents and Employment per Mile$^2$

Source: Perkins + Will
High-Speed Rail Districts

Densities

Source: Perkins + Will
Local TOD Districts

Densities

Source: Perkins + Will
HSR and Local TOD Districts

Densities

Source: Perkins + Will
High-Speed Rail Districts

Jobs and Residential Program Targets

Source: Perkins + Will
High-Speed Rail Districts

Maximum Residential Scenario

1/2 MILE RADIUS TOTALS
150 ACRES DEVELOPABLE LAND
MAXIMUM RESIDENTIAL SCENARIO

1.5 JOBS/ACRE
30,000 JOBS

BOX PERIMETER
48,500 RESIDENTS

78,500 PEOPLE
DAYTIME + NIGHTTIME POPULATION

COMMERCIAL AREAS

- PARCEL AREA: 20 ACRES
- GFA: 6,500,000 SF
- FAR: 9 FAR
- JOBS: 29,000

RESIDENTIAL AREAS

- PARCEL AREA: 130 ACRES
- DWELLING UNITS: 19,000 DU
- DENSITY: 145 DU/ACRE
- RESIDENTS: 50,000 PEOPLE

HIGH DENSITY

- PARCEL AREA: 3.0 ACRES
- GFA: 3,000,000 SF
- FAR: 19 FAR
- JOBS: 10,000

MEDIUM DENSITY

- PARCEL AREA: 7.0 ACRES
- GFA: 3,000,000 SF
- FAR: 8 FAR
- JOBS: 10,000

LOW DENSITY

- PARCEL AREA: 10.0 ACRES
- GFA: 2,500,000 SF
- FAR: 5 FAR
- JOBS: 9,000

COMMERCIAL AREAS

- PARCEL AREA: 25.0 ACRES
- DU: 5,500 DU
- DENSITY: 200 DU/ACRE
- RESIDENTS: 15,000 PEOPLE

Source: Perkins + Will
## High-Speed Rail Districts

### Maximum Jobs Scenario

#### 1/2 MILE RADIUS TOTALS

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<th>MAXIMUM JOBS SCENARIO</th>
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<td>JOBS/DU</td>
<td>10</td>
<td>62,800 JOBS</td>
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<td>RESIDENTS/20%</td>
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<td>15,700 RESIDENTS</td>
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<td>PEOPLE/78,500</td>
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#### COMMERCIAL AREAS

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#### RESIDENTIAL AREAS

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Source: Perkins + Will
Zoning Districts

Within the Study Area

Source: Perkins + Will
Transit-Oriented Development

Source: Perkins + Will
Potential Arlington Station and Alignment Options
Fort Worth Station Location Results

E. ITC – 127
G. Central Rail – 121
F. East Sundance – 115
C. Southside – 96
A. Butler – 89
D. T&P – 86
B. East Lancaster – 81
Dallas to Houston Current Activity

• Building the Bullet Train Every Day
• Working with Design/Build Partner
• Land Option Program
• Preparation for Construction Activity
• Released DEIS
  • Comments Received
  • Record of Decision Expected 4Q 2018
Operating In Japan

Source: Texas Central Partners
Inside Stations

Source: Hua Yang
Xi’an to Beijing HSR

- Maximum speed: 193mph
- 713 miles
- 4 hr 40 minutes

Source: Hua Yang
Hyperloop
What is Hyperloop?

• New Mode of Transportation Consisting of Moving Passenger and Cargo Vehicles Through a Near-Vacuum Tube Using Electric Propulsion

• Autonomous Pod Levitates Above the Track and Glides at 700+ MPH Over Long Distances
Hyperloop Unknowns

- **Environmental Impacts**
  - Noise
  - Vibration
  - Air Quality

- **Cost**
  - Capital
  - Operating
  - Fare Structure

- **Benefits**

- **Operation**

- **Reliability**

- **Safety**

Source: AECOM
Hyperloop Test Track

Source: AECOM
Hyperloop Test Track
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