Presentation Overview

• History of Rail in the United States and Texas

• Barriers to Effective Rail

• Dallas Rail Alignment
  • Station Area Overview
  • Projects in the Vicinity of the High Speed Rail Station Area

• City’s Role
  • Multimodal connectivity

• Other passenger rail projects

• High Speed Rail Project Update – Texas Central
Headlines

• “Why the United States will never have high-speed rail” (Washington Post, February 2019)

• “Nationwide High Speed Rail Doesn’t Make Much Sense for the United States” (Huffington Post, September 2017)

• “Is high-speed rail in the US ever going to happen?” (CNET, February, 2019)

• Are US trains really that bad? It’s complicated” (CNET, December 2018)

• “Why Trains Suck in America” (video, Wendover productions)
Rail in the United States
1900 to 1941
• Most long distance travel was by rail in the United States
• Intercity travel averaged at speeds between 40 and 65 MPH

1921
• Crash in Porter, Indiana – 37 people killed
• Interstate Commerce Commission (ICC) ordered railroads to install automatic train stops

1930’s
• Railroads began to develop streamlined trains which provided even faster service than the previous express trains
• In 1934, Burlington’s “Zephyr” train made a record-breaking “Dawn to Dusk” run from Denver to Chicago in 13 hours
  • Top speed of 112 MPH and average speed of 77.6 MPH
• Depression cut into the demand for intercity rail travel
1946

- Crash in Naperville, Illinois – 45 people died
- ICC, who had largely ignored the rules passed after the crash in Porter, Indiana, set national rail speed limits on passenger trains exceeding 79 MPH and ordered:
  - Automatic block signaling
  - Cab signaling
  - Cab signaling too expensive to implement nationwide
  - Rather than comply with new cab signaling requirements, most railroads ran below the 79 MPH threshold

Late 1950s

- By the late 1950s many of the passenger routes that had existed at the time of the Naperville crash had been discontinued.
Rail Service

**1969**
- Metroliner trains started running between New York and DC
  - Top speed - 125 MPH
  - Average speed - 90 MPH

**1993**
- Amtrak bought Acela trains they operate now
  - Acela lacks dedicated high-speed rail line which limits its average speed
    - Average speed between New York and DC is 82 MPH
    - Average speed between New York and Boston is 63 MPH
<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Top Speed</th>
<th>Average Speeds</th>
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<tbody>
<tr>
<td>Early 1900s</td>
<td></td>
<td>40-65 MPH</td>
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<tr>
<td>1934 Zephyr</td>
<td>112 MPH</td>
<td>77.6 MPH</td>
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<tr>
<td>1965 Metroliner b/w NYC &amp; DC</td>
<td>125 MPH</td>
<td>90 MPH</td>
</tr>
<tr>
<td>1993 Acela b/w NYC &amp; DC</td>
<td></td>
<td>79 MPH</td>
</tr>
<tr>
<td>1993 Acela b/w NYC &amp; Boston</td>
<td></td>
<td>63 MPH</td>
</tr>
<tr>
<td>Current Acela b/w NYC &amp; DC</td>
<td>135</td>
<td>82.2 MPH</td>
</tr>
<tr>
<td>Current NYC &amp; Boston</td>
<td></td>
<td>66 MPH</td>
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</table>
Federal Legislation Timeline

- **1965**: High Speed Ground Transportation Act
- **1970**: Rail Passenger Service Act
- **1980**: The Passenger Railroad Rebuilding Act
- **1991**: Intermodal Surface Transportation Efficiency Act
- **2009**: President Obama makes high-speed rail development a goal of his administration; Congress allocated $8 billion for high-speed rail
- **2010**: Congress approved additional $2.5 billion for high-speed rail and intercity passenger rail
- **2015**: Fixing Americas Surface Transportation Act
Texas High Speed Rail Efforts
1987

- Pursuit of high-speed rail in Texas began in earnest
- Texas Turnpike Authority (TTA) directed to study feasibility of high-speed rail service in the “Texas Triangle” (Dallas-Houston, Dallas-San Antonio, San Antonio-Houston)
- TTA reported that, under certain assumptions, high-speed rail (over 150 MPH) would be feasible in Texas
High Speed Rail in Texas

1989
- Texas High-Speed Rail Authority (THSRA) created
  - Charged with awarding a franchise to a private company to operate a high-speed rail service

1992
- After a complex RFP process, Texas TGV awarded a franchise to build, operate and maintain a high-speed rail system in Texas

1994
- THSRA filed termination proceedings against Texas TGV
  - Franchise agreement rescinded

1995
- Legislature abolished THSRA and repealed its legislative authorization

2009
- Trans-Texas Corridor program, which included a high-speed rail component, collapsed
Why has High-Speed Rail been difficult in the United States?
• Property rights
• Commercial freight networks
• Density
• “Automobile culture”
• Strong property rights in the United States make purchase of property for rail lines expensive

• The United States uses rail for moving freight which impacts how much passenger rail can effectively operate
The United States’ population density is less than many other countries with effective high-speed rail.

France – 118 people/square kilometer

Germany – 228 people/square kilometer

Switzerland – 201 people/square kilometer

Belgium – 370 people/square kilometer

United States - 33 people/square kilometer

Finland and Norway both have 16 people/square kilometer and they have effective HSR.
Automobile Culture

<table>
<thead>
<tr>
<th>1930s – Industry groups formed the “National Highway Users Conference” to influence federal transportation policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal was to reframe the transportation system as a public responsibility</td>
</tr>
</tbody>
</table>

| 1939 – Congressional planning document called “Toll Roads and Free Roads” roughly outlined what would become the interstate system |

| Around the same time, auto industry groups began envisioning highways that would crisscross the country |
| GM built a one-acre diorama/ride for the 1939 World’s Fair showing the vision. It was called “Futurama.” |

World War II interrupted the vision
Federal-Highway Act authorized construction of 40,000 mile “National System of Interstate Highways” but no way to pay for it

Department of Commerce document specified paths the highways would take through city centers

1944

1947

1955

1956

1944

Paths for interstates were drafted

1956

$26 Billion Federal-Aid Highway Act authorized construction of 41,000-miles of highways
Car Ownership Rates

- France – 57.8%
- Germany – 58.8%
- Switzerland – 57.3%
- Belgium – 55.9%
- United States – 81%
Is High Speed Rail in the United States Realistic?
Is that the right question?
Texas Population Density
Texas Population Projections

2050

- 47M will people in Texas
  - 60% increase from 2020

- 35.3M (75%) will live in the “Texas Triangle”

- Population density of “Texas Triangle”:
  - Current – 124 people/kilometer
  - 2050 estimate - 220 people/kilometer

<table>
<thead>
<tr>
<th>Area</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045</th>
<th>2050</th>
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<tbody>
<tr>
<td>Texas</td>
<td>29,677,772</td>
<td>32,204,904</td>
<td>34,894,429</td>
<td>37,716,507</td>
<td>40,686,490</td>
<td>43,867,040</td>
<td>47,342,417</td>
</tr>
<tr>
<td>Austin-Round Rock-Georgetown</td>
<td>2,246,558</td>
<td>2,541,538</td>
<td>2,867,566</td>
<td>3,228,364</td>
<td>3,624,734</td>
<td>4,059,824</td>
<td>4,542,827</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington</td>
<td>7,689,051</td>
<td>8,438,307</td>
<td>9,264,580</td>
<td>10,152,883</td>
<td>11,092,356</td>
<td>12,088,874</td>
<td>13,173,646</td>
</tr>
<tr>
<td>Houston-The Woodlands-Sugar Land</td>
<td>7,372,325</td>
<td>8,193,523</td>
<td>9,074,797</td>
<td>10,005,595</td>
<td>10,986,620</td>
<td>12,030,094</td>
<td>13,155,993</td>
</tr>
<tr>
<td>% of Population in 4 Metros</td>
<td>67.2%</td>
<td>68.6%</td>
<td>69.9%</td>
<td>71.3%</td>
<td>72.5%</td>
<td>73.6%</td>
<td>74.6%</td>
</tr>
</tbody>
</table>
The United States’ population density is less than many other countries with effective high-speed rail

<table>
<thead>
<tr>
<th>Country</th>
<th>Density</th>
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<tr>
<td>France</td>
<td>118 people/square kilometer</td>
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<td>Belgium</td>
<td>370 people/square mile</td>
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<tr>
<td>United States</td>
<td>33 people/square kilometer</td>
</tr>
<tr>
<td>Finland</td>
<td>16 people/square kilometer</td>
</tr>
<tr>
<td>Norway</td>
<td>16 people/square kilometer</td>
</tr>
</tbody>
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“Texas Triangle” – 124 (Current); 220 (2050 projection)
Is High Speed Rail in Texas Realistic?
Right Place, Right Time

- Skepticism is understandable
- This is the right time
- Dallas is the right place
Rail Alignment

Station Area Overview

Other Projects Planned in Area
Alignment within the City of Dallas

- End – I-30 & Cadiz
- Central WW Treatment Plant
- Loop 12
- I-20
- Lamar Exit
- I-45
Dallas Water Gardens

- Filters two billion gallons of water a year to enhance flood control
- Protects and enhances existing urban wetlands
- Creates city amenity and innovative utility simultaneously
- $7M included in the 2017 Bond Program for project
- Bond sale scheduled for 2021
- Project will need support from federal, state, local entities as well as private sector sponsors
Water Gardens Area
Texas Odyssey

- 500 foot tall observation wheel
- Almost as tall as Reunion Tower
- Taller than the London Eye (443’)
- 38 minute ride
- Development to include retail and dining, outdoor performance venue and an education center
- Break ground August 2019
- Open NYE 2022
Texas Odyssey Site
High speed passenger service between Dallas and Fort Worth

North Central Texas Council of Governments is leading the Draft Environmental Impact Study process
The City’s Role
City of Dallas Departments Involved

- Building Inspection
- Development Services
- Convention Center
- Dallas Police Department
- Dallas Fire Department
- Dallas Office of Emergency Management
- Dallas Water Utilities
- Economic Development
- Public Works
- Planning and Urban Development
- Transportation
- Office of Environmental Quality
- City Attorney’s Office
- Office of Business Diversity
Multiple Partner Involvement

- North Central Texas Council of Governments
- DART
- Amtrak
- Texas Department of Transportation
- U.S. Department of Transportation
- U.S. Army Corps of Engineers
- Downtown Dallas Inc.
- Adjacent Property Owners
- Neighborhood Associations
Intermodal Connectivity
Connectivity

- Current rail/bus stations are not close enough to fully integrate with High Speed Rail

- Better integration with other transportation modes is needed for Dallas to take full advantage of the opportunities from High Speed Rail
Connectivity

• In October 2018 the City Council’s Mobility Solutions and Infrastructure and Sustainability supported staff’s recommendation to conduct a feasibility study for a new transit hub that would interface HSR station and:
  • Amtrak
  • DART Light Rail & Buses
  • TRE
  • Proposed D2 line
  • Dallas Streetcar
  • Passenger busses
  • Aerial Taxis
  • Bicycles
  • Automobiles
  • Autonomous vehicles
  • Other transit modes that are coming on-line
Connectivity

• **Phase I feasibility** underway to identify any ‘fatal flaws’ that would prohibit building a new multimodal center
  • If no fatal flaws, we will conduct a Phase II feasibility study

• **Phase II** will be broad and provide insight on issues related to a multimodal facility
  • Site feasibility and accessibility
  • Connectivity to adjacent areas and greater DFW
  • Impact to Convention Center operations
  • Economic impact to Cedars area and CBD
  • Opportunities for ancillary development adjacent to/integrated with the facility
  • Impacts to infrastructure
  • Future parking needs and availability
  • Cost and benefit projections
  • Financing and governance options
  • Land Use and Master Planning
Key Policy Items

- Parking
- Zoning
- Street Grid
- Walkability
- Ingress & Egress
- Connectivity to other transit modes
- Design Guidelines
Union Station

Denver

- New multi-modal hub (opened in 2014)
- Redevelopment of Historic Union Station
- Redevelopment of Lower Downtown District Neighborhood

Special Features
- Public spaces for gatherings, outdoor concerts, and festivals
- Union Station redeveloped to be “Denver’s Living Room” a public space with restaurants, retail and a hotel
Miami Central

Miami

- Intermodal rapid transit, commuter rail, intercity rail, local bus and intercity bus lines
- Brightline (privately funded inter-city express rail) started operations this Summer
- 11 acre complex includes restaurants, retail, two office buildings, and 800 residential units

Special Features
- “Central Fare” – 50,000 SF market place with celebrity chef restaurants
- 95-story tower with a hotel (proposed)
Salesforce Transit Center

San Francisco

- Centerpiece of San Francisco’s Transbay development
- Limited bus service started in December, 2017 and full service bus operation began in August, 2018
- 2nd Phase of construction will add an underground terminal station for Caltrain and California High Speed Rail

Special Features
- Rooftop park includes an amphitheater, a restaurant and water features
- Has a 20-passenger aerial tram to provide access from the street level to the rooftop park
Other United States High (and Higher-Speed) Rail Projects
Victorville to Las Vegas

- 185 miles
- 150 MPH
- EIS submitted for extension to Palmdale
Southwest Network
California
Brightline - Florida

- Miami to West Palm Beach operating
- Plans to extend to Orlando
- Additional plans to extend to Tampa and Jacksonville
- Averages 80 MPH. Top speed of 120 MPH.