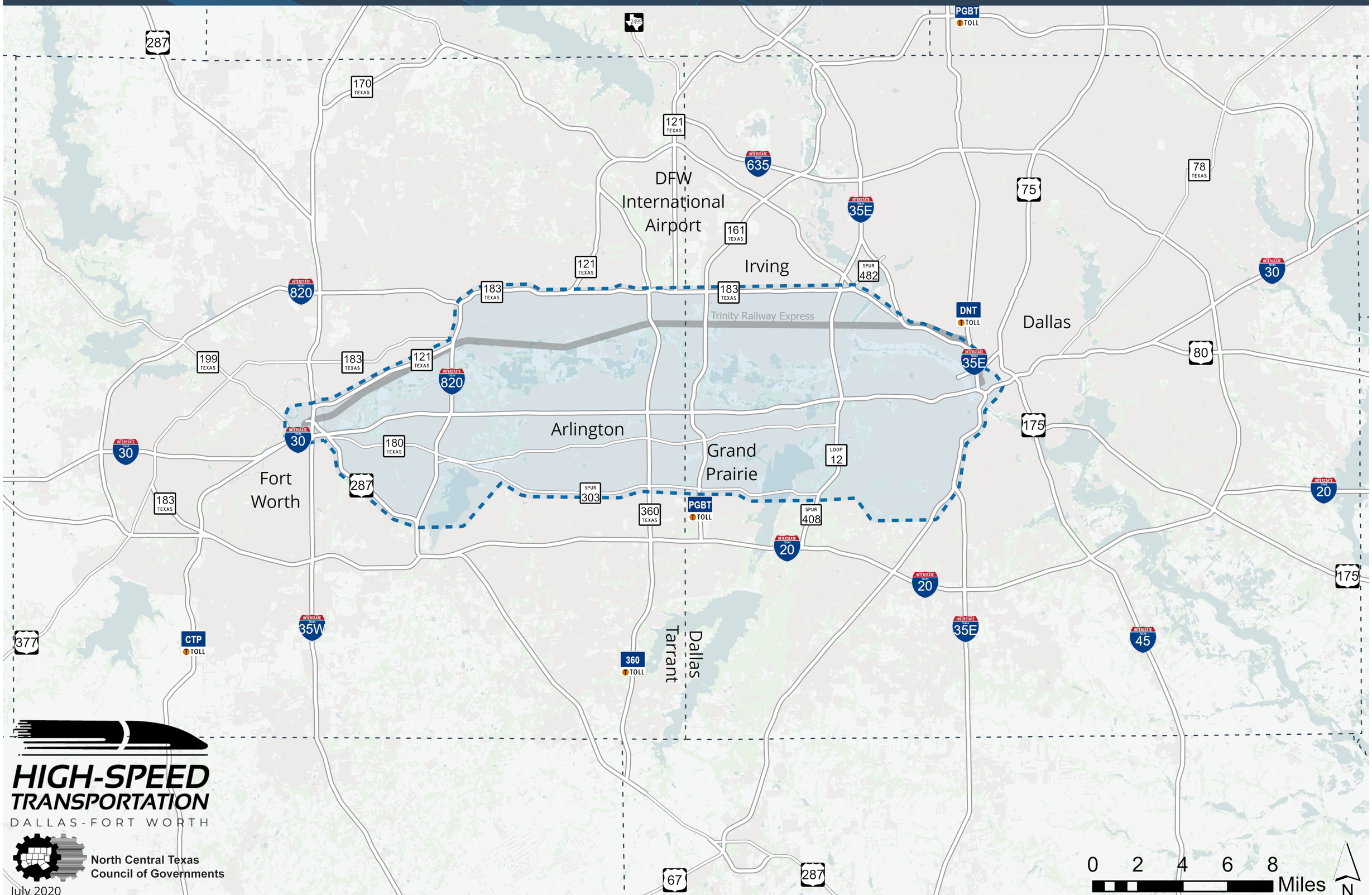
PHASE 1 STUDY AREA

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

North Central Texas Council of Governments

July 2020

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

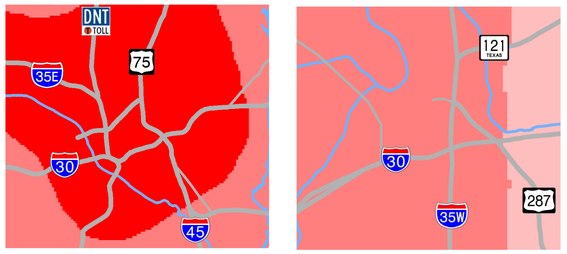
DFW BY THE NUMBERS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

2018 LEVELS OF CONGESTION/DELAY

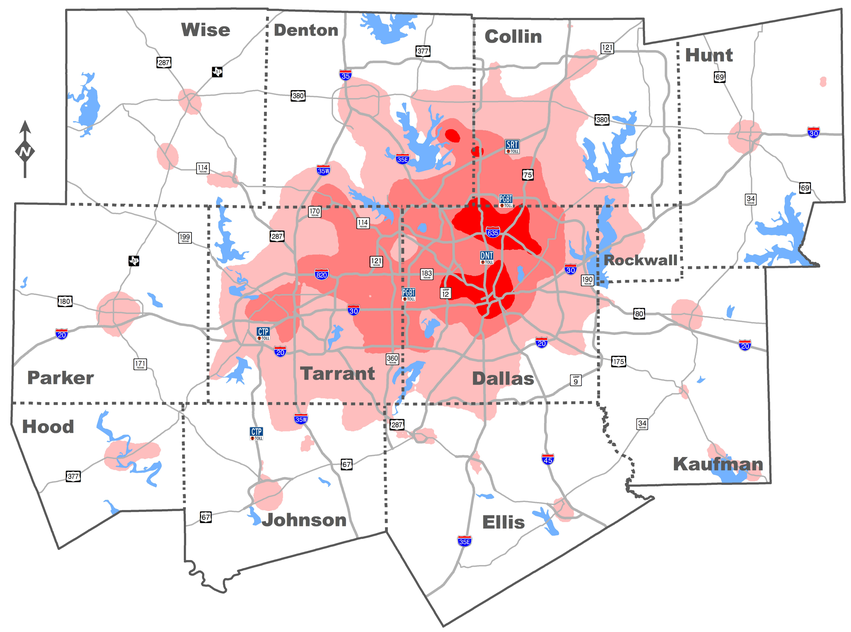
Congestion Index

- No Congestion
- Light Congestion
- Moderate Congestion
- Severe Congestion

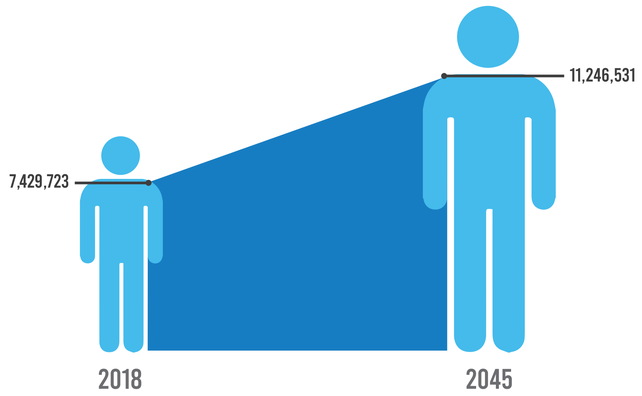


Dallas CBD

Fort Worth CBD



REGIONAL POPULATION GROWTH

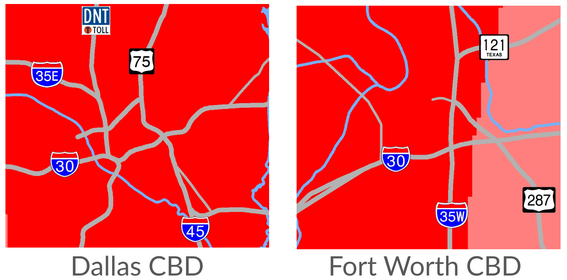


51.4%
Population Increase

ANTICIPATED 2045 LEVELS OF CONGESTION/DELAY

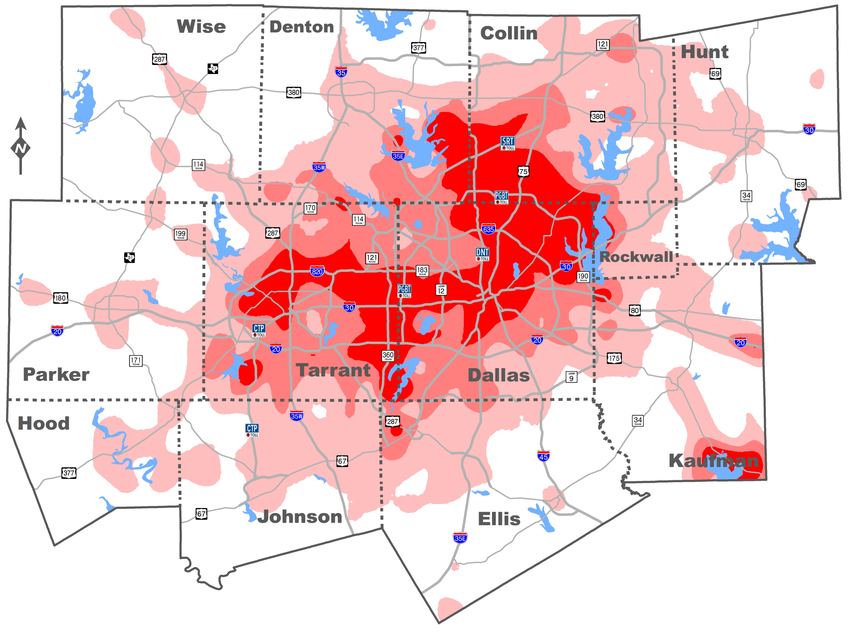
Congestion Index

- No Congestion
- Light Congestion
- Moderate Congestion
- Severe Congestion

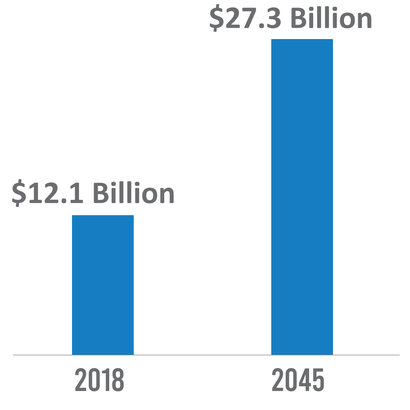


Dallas CBD

Fort Worth CBD



ANNUAL COST OF CONGESTION



125%
Cost Increase

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

OTHER PLANNED RAIL SYSTEMS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

To Oklahoma City

DFW High-Speed Transportation Connections Study
NCTCOG

Texas-Oklahoma Passenger Rail Study
TxDOT

Dallas to Houston HIgh-Speed Rail Project
Texas Central Railway (TCR)

Oklahoma
Arkansas
Louisana

Cooke
Grayson
Delta
Hunt
Wise
Denton
Collin
Rockwall
Parker
Dallas
Tarrant
Kaufman
Hood
Johnson
Ellis
Henderson
Navarro
Hill
Freestone
Limestone
McLennan
Coryell
Leon
Houston
Falls
Lampasas
Temple
Killeen
Robertson
Madison
Bell
Milam
Walker
Bryan
College Station
Williamson
Burleson
Brazos
Grimes
San Jacinto
Austin
Travis
Lee
Washington
Montgomery
Hardin
Liberty
Orange
Hays
Bastrop
Harris
Kendall
Caldwell
Fayette
Austin
Waller
Chambers
Jefferson
Houston
Comal
Bandera
Bexar
Guadalupe
Colorado
Fort Bend
Gonzales
Lavaca
Galveston
Medina
San Antonio
Wharton
Brazoria
Wilson
Atascosa

287 · 70 · 287 · 44 · 44 · 287 · 35 · 69 · 69 · 82 · 75 · 81 · 121 · 190 · 820 · 35E · 35E · 30 · 220 · 49 · 45 · 35W · 35 · 45 · 290 · 8 · 1604 · 410 · 10 · 10 · 35 · 37 · 37

LEGEND

Counties Within Texas Triangle

Not to scale

April 2021

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

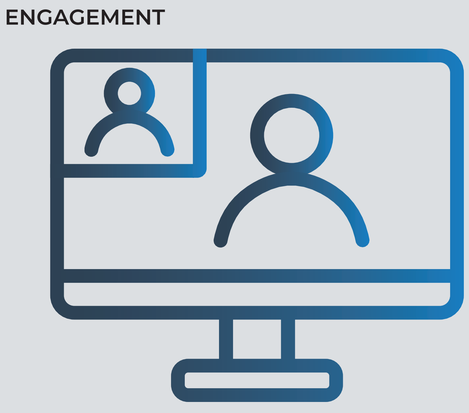
PHASED APPROACH

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Phase 1 -
Alternative Development

Public and Agency Engagement
Alternative Development ← Includes a technology forum
Alternative Screening ← Includes alignments and technology

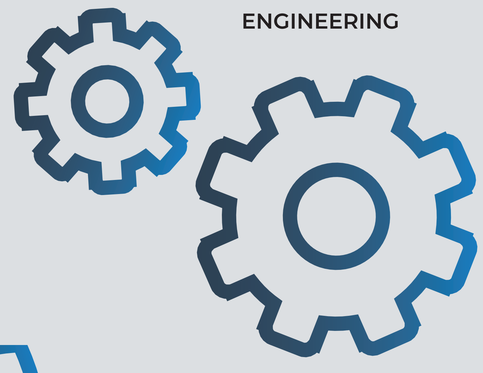
GOAL
for Phase 1
Identify technologies and alignments to be carried into Phase 2

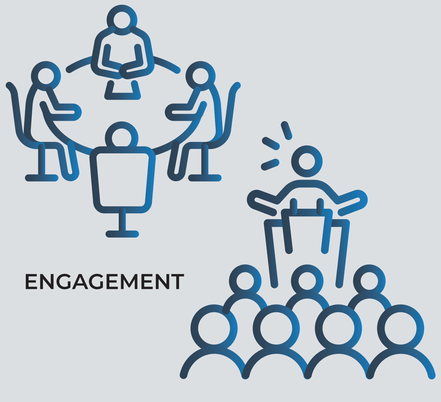


Phase 2 -
Engineering & Environmental

Conceptual Engineering
National Environmental Policy Act Documentation and Approval
Preliminary Engineering
Financial and Project Management Plans
Public and Agency Engagement

GOAL
for Phase 2
Federal environmental approval of alignment and technology





DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

STAKEHOLDERS COORDINATION

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Over 130 meetings held through September 2021

Public Meetings (7)
Technical Work Group (8)
Federal and State Coordination (21)
Technology Forum & one-on-ones with Providers (19)
Transportation Agencies and Railroads (28)
Study Area Cities (9)
Elected Officials (15)
Community Groups and Organizations (27)

28 Transportation Agencies and Railroads

7 Public Meetings

27 Community Groups and Organizations

Thank you for your participation in our previous meetings!

You can find responses to questions and comments from previous meetings and a FAQs document at our project website: **www.nctcog.org/dfw-hstcs** >> Project Information

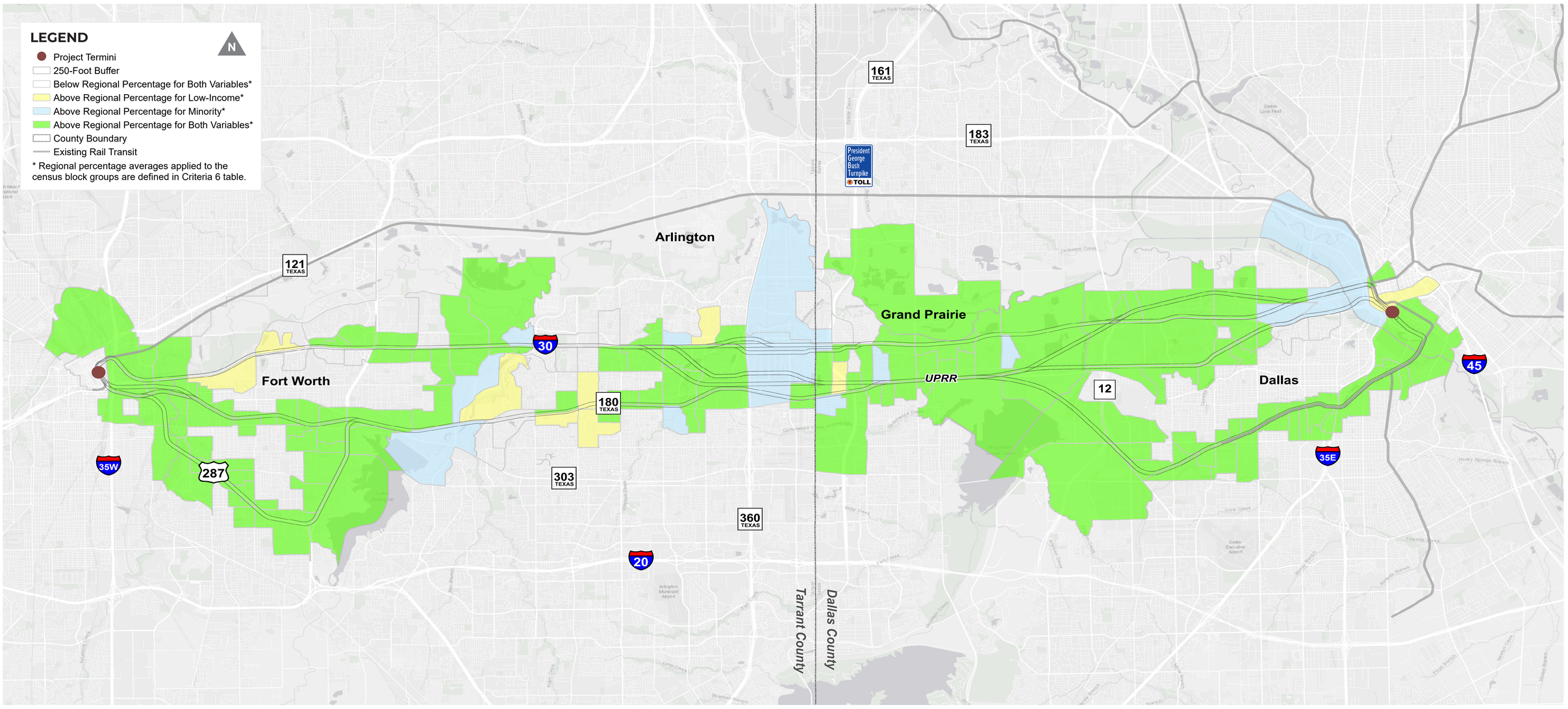
MINORITY AND LOW INCOME ANALYSIS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Environmental Justice	Measurements
	Number of census block groups with above average Environmental Justice Index (Low-income and Minority Populations) that intersect the 250-foot buffer.
Methodology	A buffer of 250-feet in each direction from the alignment centerline was used. Census block groups that intersect the 250-foot buffer were considered. Environmental Justice parcel data was provided by NCTCOG for the DFWHSTC study area. The percentages calculated from the parcel data reveal an average of 19% of the regional population is considered low-income and an average of 53% are considered minority in the regional population.

ACTIONS TAKEN:

- Stakeholder interviews were conducted with agencies and individuals with links to environmental justice communities
- Virtual public meeting presentations were recorded in English and Spanish
- Presentations and handouts were translated to Spanish and posted on the project website
- Meeting notices included and option to provide an interpreter upon request with advance notice



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

EVALUATION METHODOLOGY

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

PHASE 1

PHASE 2

INITIAL ALTERNATIVES

Identify & Develop Initial Alternatives

EVALUATION OF ALTERNATIVES

Level 1 (Purpose & Need)

Evaluate adherence to Purpose & Need for each alternative

43 Alignments & 5 Technologies considered

Level 2 (Fatal Flaw & Ranking)

Evaluate alternatives for fatal flaws and rank remaining alternatives

23 Alignments & 4 Technologies considered

Level 3 (Detailed Evaluation)

Detailed evaluation of top alternatives

10 Alignments & 3 Technologies considered

ALTERNATIVES CARRIED FORWARD

Draft Environmental Document

Limited number of technologies and alignments carried forward into Environmental Document

Ongoing Public, Stakeholder, and Agency Engagement

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

SCREENING CRITERIA

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Level 1
(Ability to Meet Purpose and Need)

Primary

- Serves Downtown Dallas and Fort Worth Central Station (fatal flaw)
- Travel Time (fatal flaw)

Secondary

- Safe
- Reliable
- Convenient
- Linkages to Other High-Performance Systems in Texas
- Connect to Existing Regional/ Light Rail in Dallas-Fort Worth
- Improved Access to Major Activity Centers

Level 2
(Fatal Flaws and Ranking)

- Proximity to Sensitive Social, Biological, or Cultural Areas
- Potential Community Impacts
- Technology Maturity, Design Criteria, Regulatory Approval
- Capacity, Travel Time, Compatibility with Existing Infrastructure
- Operational Considerations

Level 3
(Detailed Evaluation)

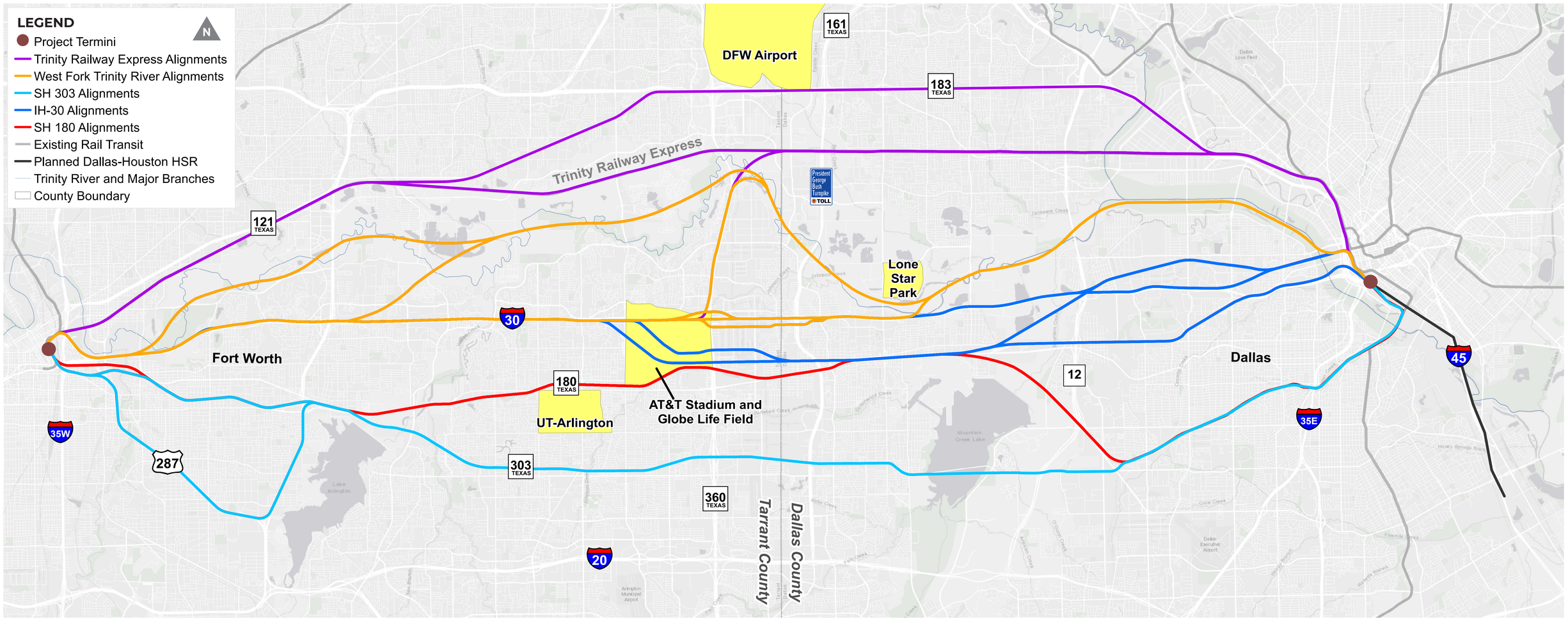
- Costs
- Potential Impacts to Sensitive Social, Biological, or Cultural Areas
- Potential Community Impacts
- Constructability/Operability

INITIAL ALIGNMENTS/CORRIDORS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

43

end-to-end (Dallas to Fort Worth) alignments/corridors were identified



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

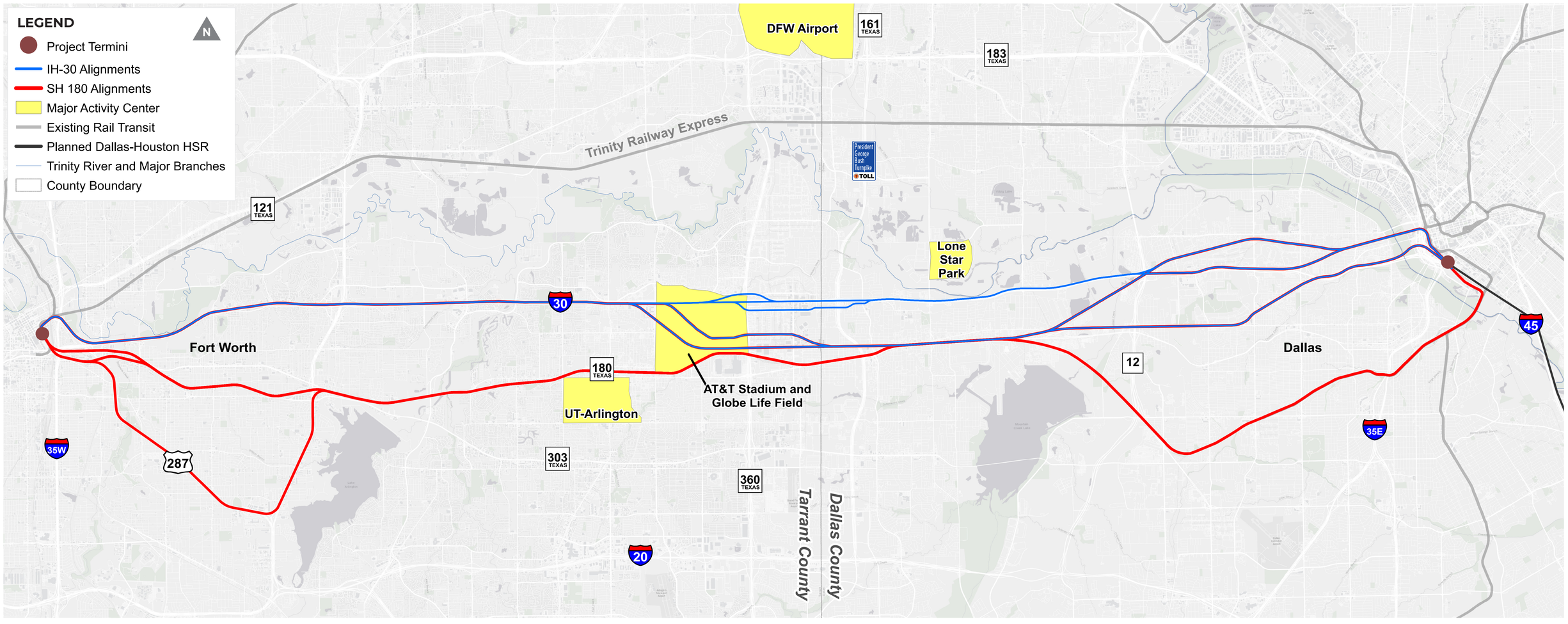
Oct. 2021

North Central Texas Council of Governments

LEVEL 1
SCREENING RESULTS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Only IH-30 (12 alignments) and SH 180 (11 alignments) corridors carried forward into Level 2 screening



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

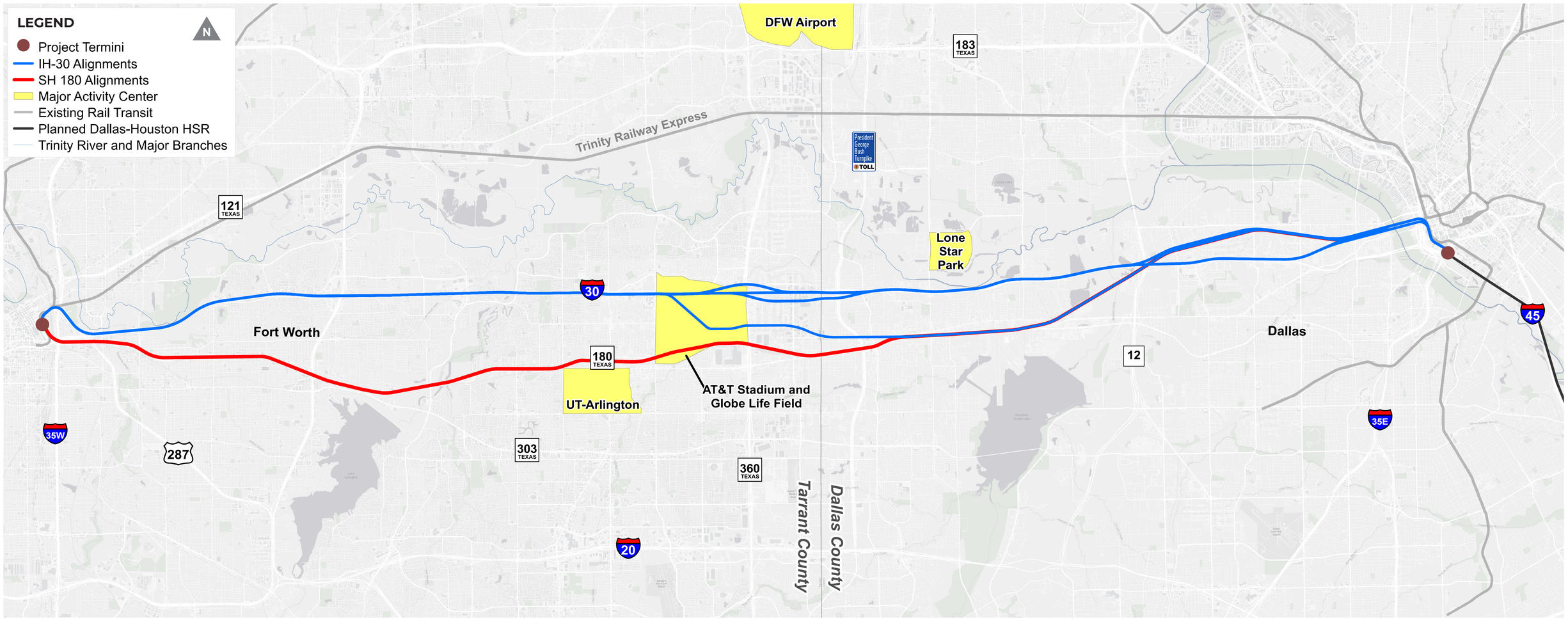
North Central Texas Council of Governments

LEVEL 2
ALIGNMENTS/CORRIDORS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

IH-30: *Seven of 12 alignments carried forward into Level 3 screening, six of the seven alignments combined into two*

SH 180: *Three of 11 alignments carried forward into Level 3 screening*



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

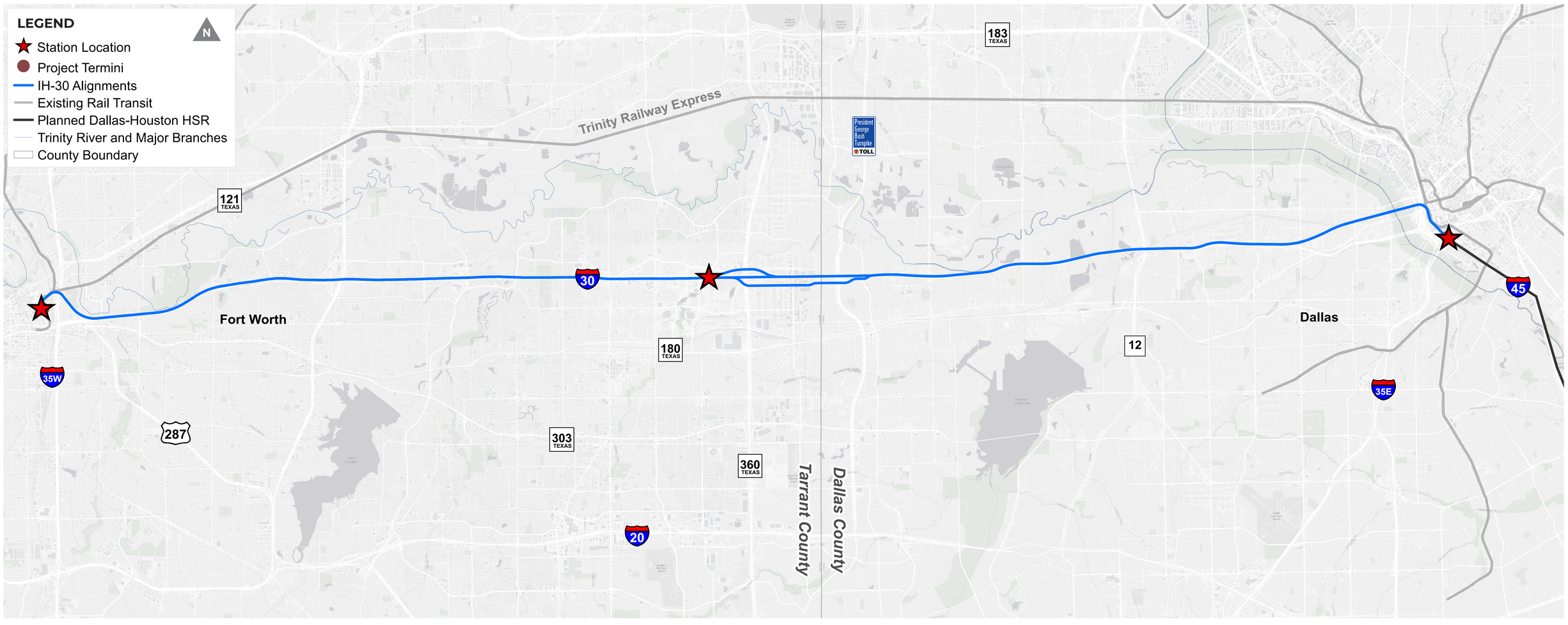
Oct. 2021

North Central Texas Council of Governments

LEVEL 3
SCREENING RESULTS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Only IH-30 alignments carried forward into Phase 2



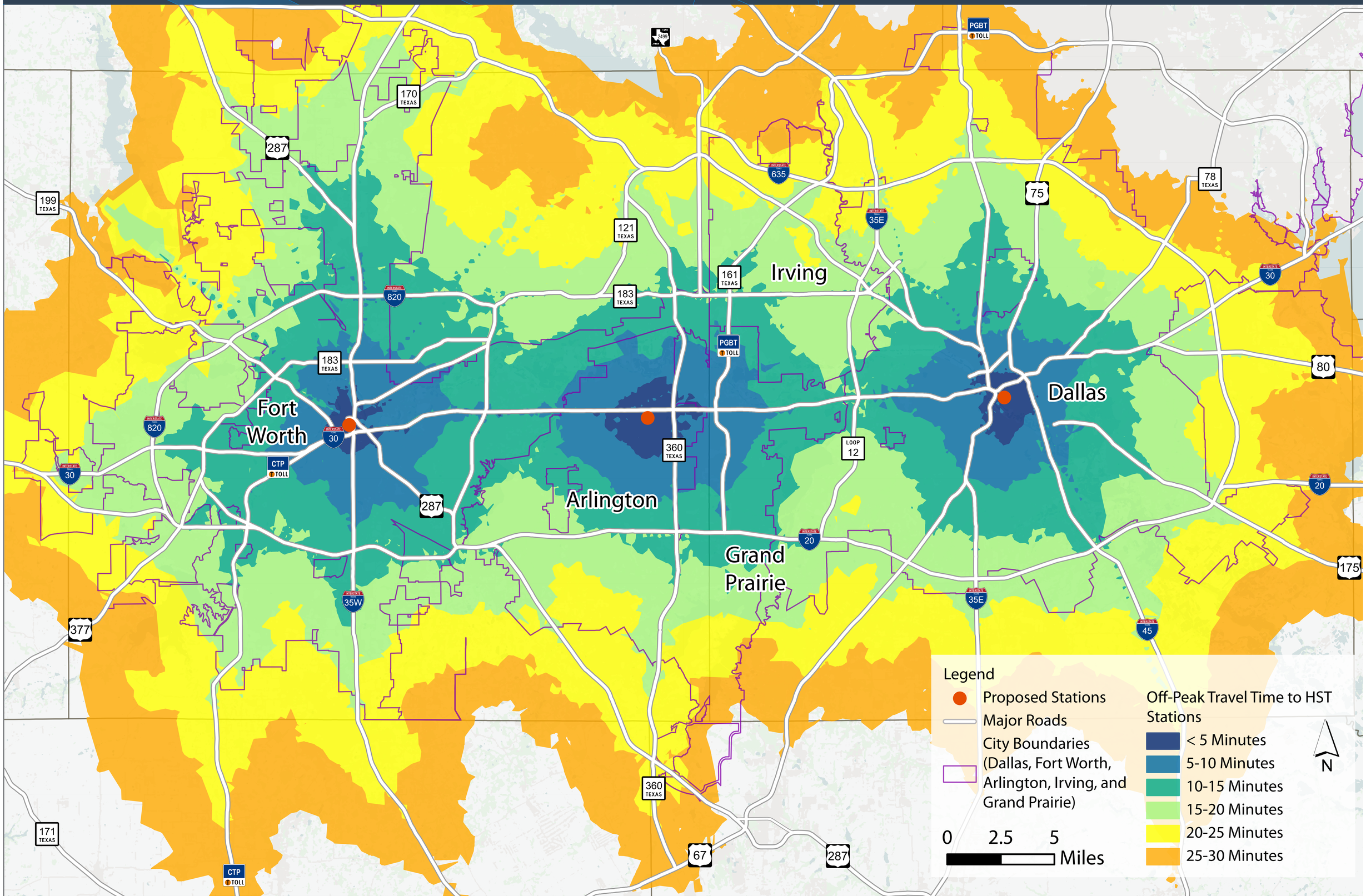
DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

TRAVEL TIMES TO PROPOSED HIGH-SPEED TRANSPORTATION STATIONS (OFF PEAK)

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



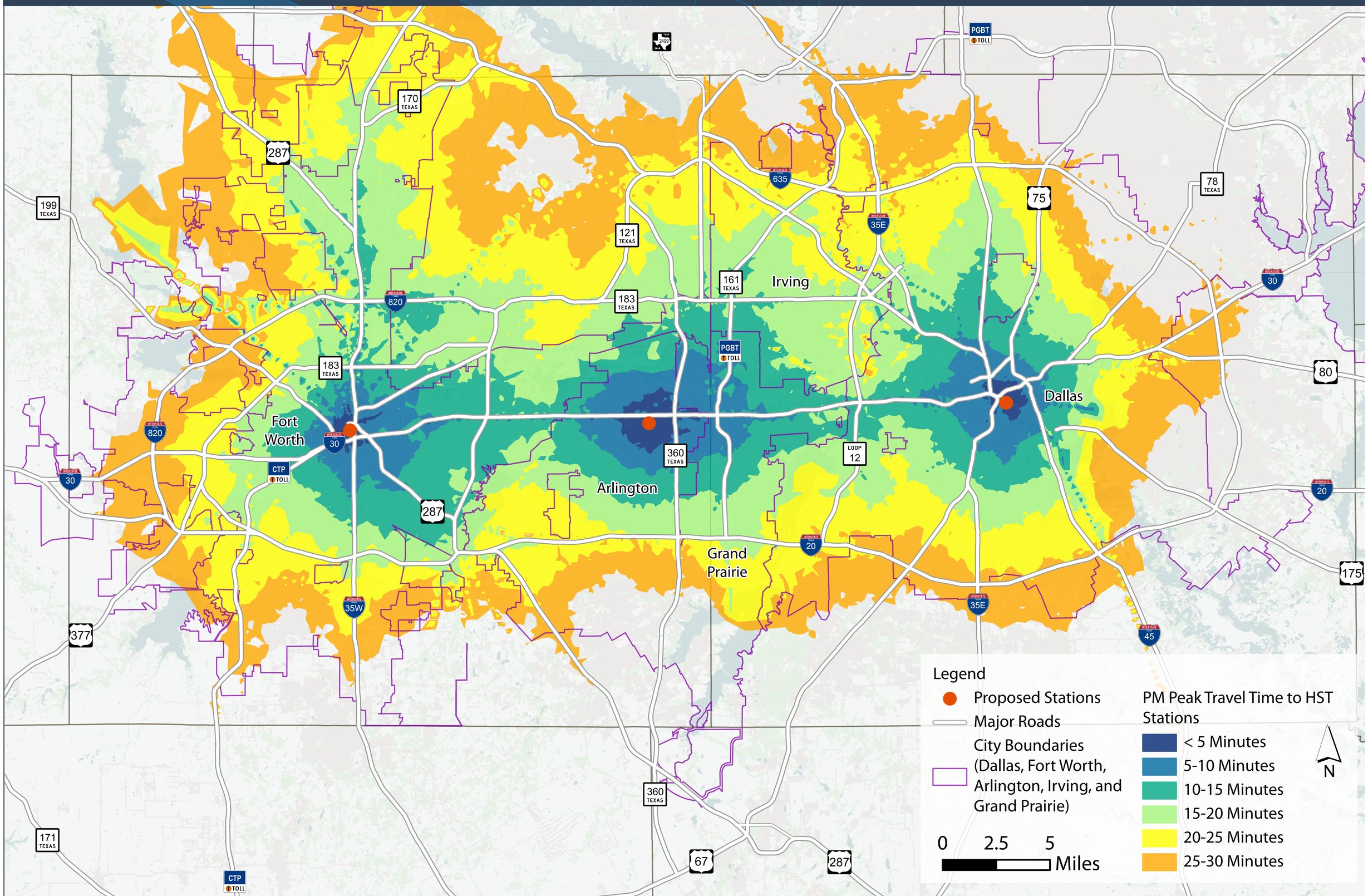
DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

TRAVEL TIMES TO PROPOSED HIGH-SPEED TRANSPORTATION STATIONS (PM PEAK)

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

TYPES/MODES OF TRANSPORTATION

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

TYPES OF PASSENGER RAIL TECHNOLOGY

	Top Speed	Exclusive Guideway	Peak Headways	Operating Style	Cargo	Technology Readiness
CONVENTIONAL TRE, TEXRail, A-Train	80 mph	No	20-30 Minutes	Fixed Schedule	No	Operational
HIGHER-SPEED Amtrak, Acela Express	125 mph	No	20-30 Minutes	Fixed Schedule	No	Operational
HIGH-SPEED Asia & Europe, Under Construction in California	250 mph	Yes	3-30 Minutes	Fixed Schedule	Yes	Operational
MAGLEV China, Germany, Japan, South Korea, Under Environmental Study (DC to Baltimore)	300+ mph	Yes	15-20 Minutes	Fixed Schedule	No	Operational
HYPERLOOP	650+ mph	Yes	~2 Minutes	On-demand (Smart Elevator)	Yes	Prototypes Undergoing Testing

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

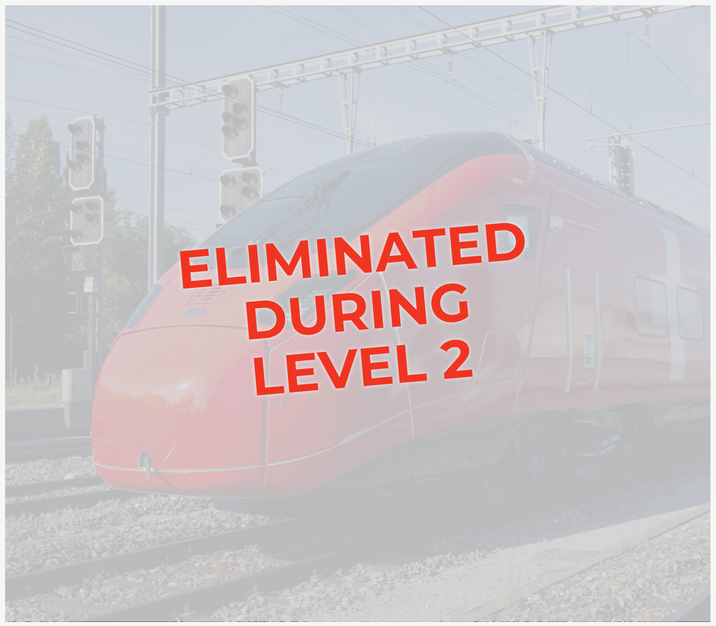
North Central Texas Council of Governments

MODES EVALUATED IN PHASE 1

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

CONVENTIONAL

HIGHER-SPEED



HIGH-SPEED

MAGLEV

HYPERLOOP

EMERGING TECHNOLOGIES

Imagery provided by NCTCOG Staff, Schon Noris Photography, Texas Central Partners, Ren Long/China Features Photos, AECOM, Virgin Hyperloop

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

TECHNOLOGY READINESS LEVELS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

TECHNOLOGY READINESS

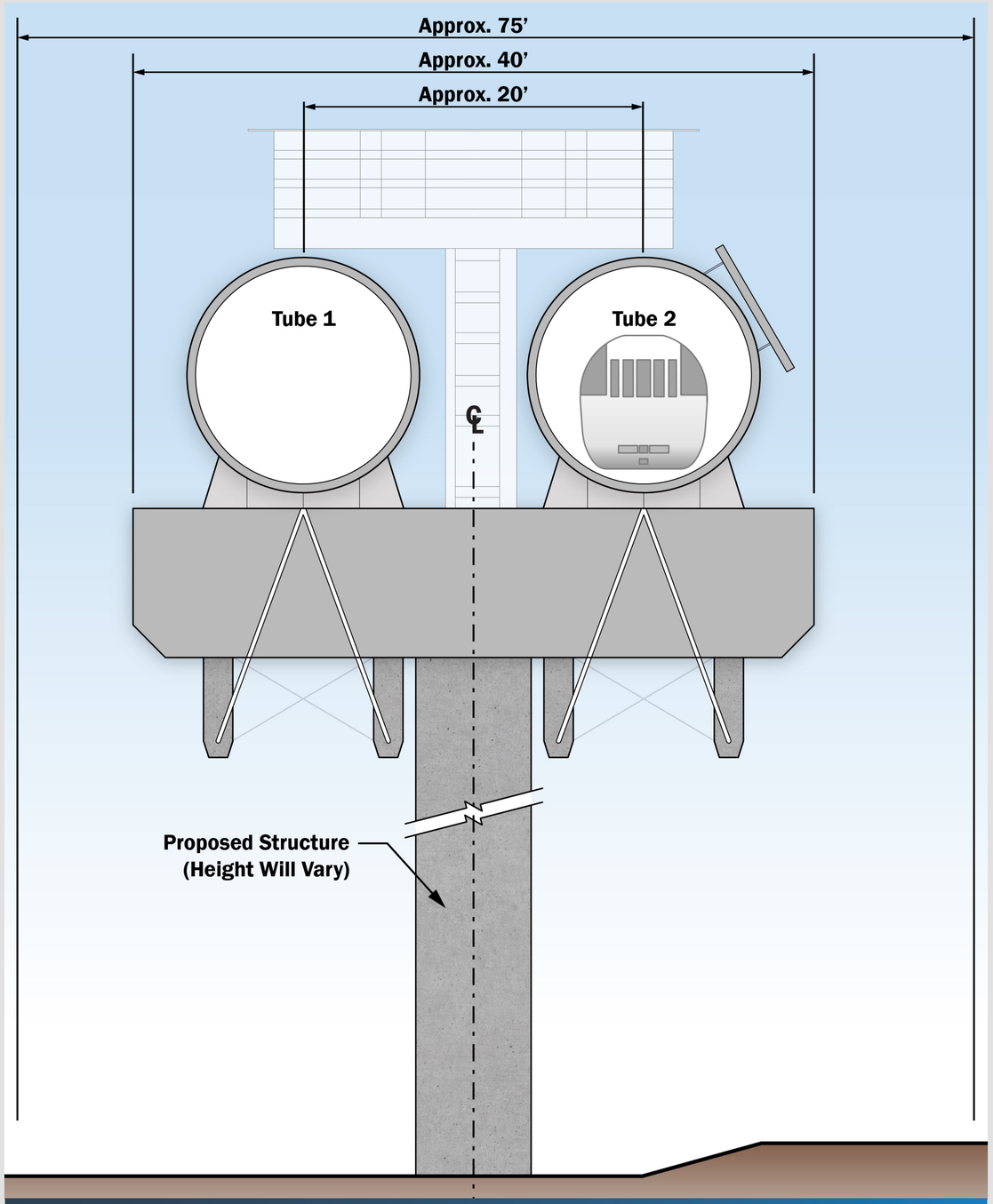
Technology Readiness Levels (TRL)
- Hyperloop – TRL 6
- High-Speed Rail – TRL 9

Advancing proven (HSR) and emerging (Hyperloop) technologies
Project schedule allows time for technology advancement
Emerging technologies are advancing rapidly
Infrastructure characteristics are very similar between HSR and Hyperloop

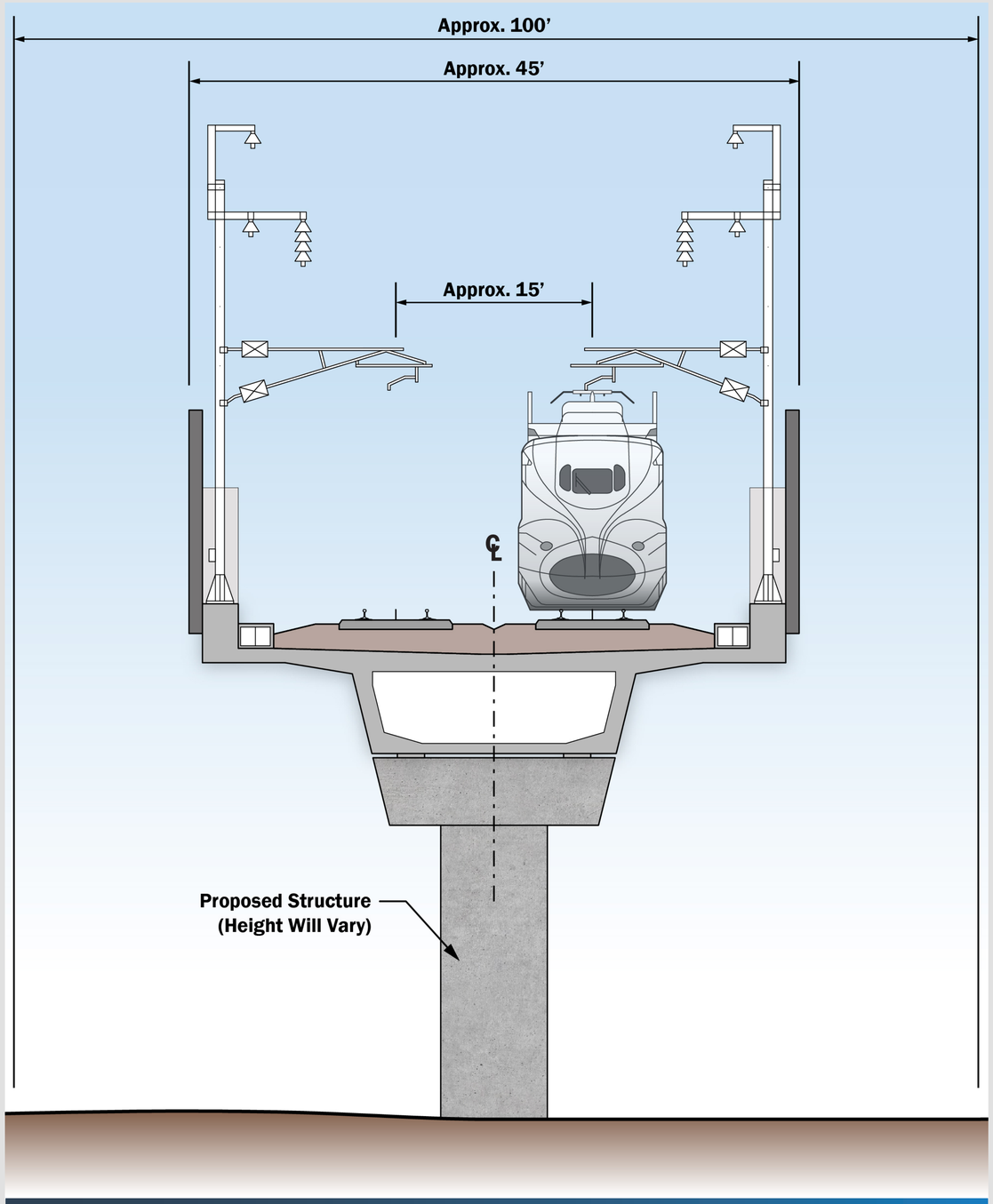
Basic Research	Applied Research	Development	Implementation
1 Basic principles and research	4 Components validated in a laboratory environment	6 Prototype demonstrated in relevant environment	9 Technology refined and adopted
2 Application formulated	5 Integrated components demonstrated in a laboratory environment	7 Prototype demonstrated in operational environment	
3 Proof of concept		8 Technology proven in operational environment	
		Hyperloop	**High-Speed Rail**

POTENTIAL TYPICAL SECTIONS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



HYPERLOOP



HIGH-SPEED RAIL

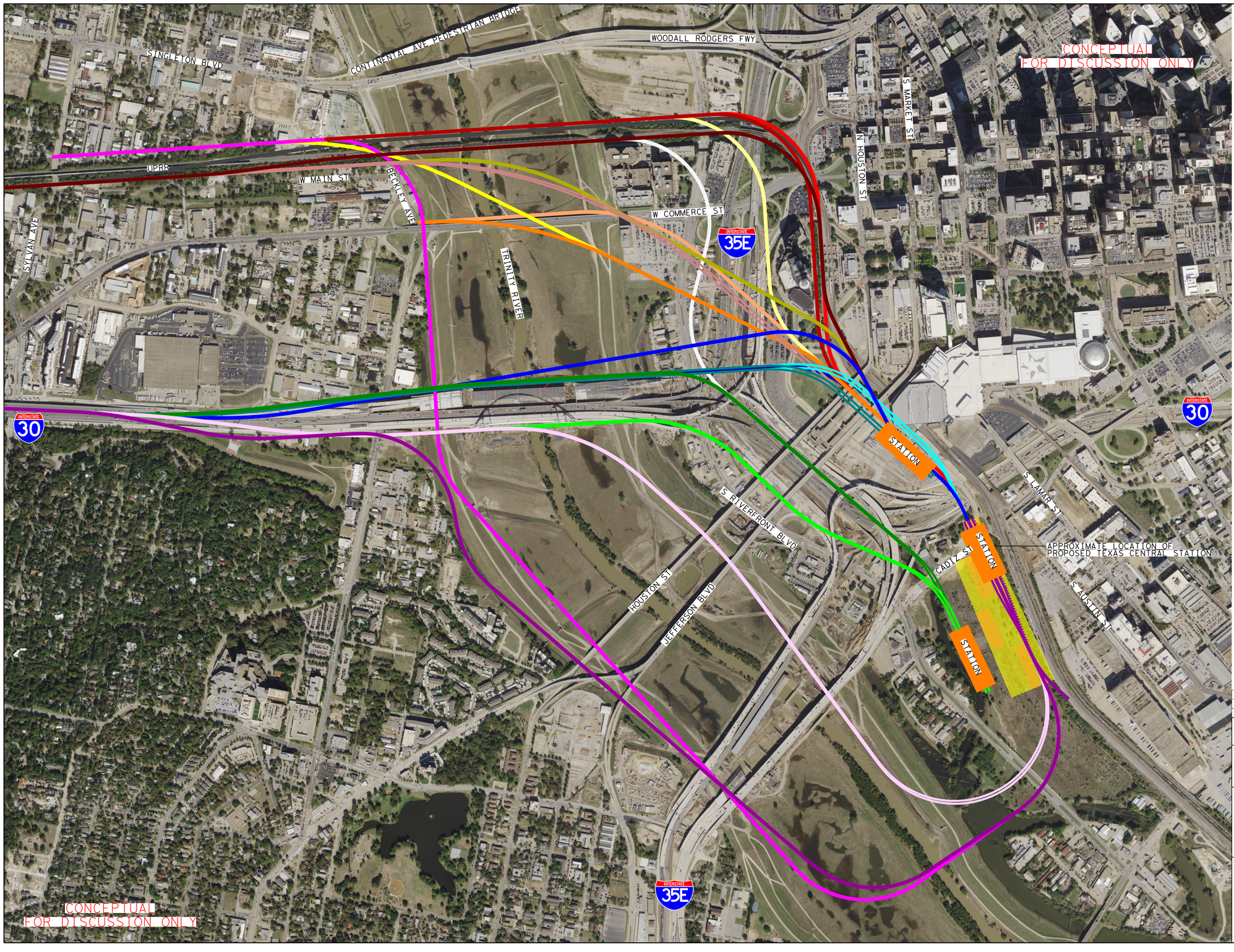
DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

PRELIMINARY URBAN CONNECTION CONCEPTS
DALLAS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



0 500 1000 1500 2000
HORIZ. SCALE IN FEET

LEGEND

- UPRR - ABOVE UPRR AT UNION STATION
- UPRR - SOUTH OF UPRR TO TRINITY THEN NORTH OF UPRR
- UPRR - ABOVE HYATT REGENCY HOTEL DRIVE AT UNION STATION
- UPRR - WEST OF REUNION
- UPRR - SOUTH OF UPRR COMBINED STRUCTURE OVER TRINITY
- RIVERFRONT PLATFORM SOUTH OF UPRR
- UPRR - SOUTH OF UPRR ALONG MAIN
- UPRR - AVOID DOWNTOWN CONSTRAINTS DIAGONAL ACROSS TRINITY
- UPRR - ALONG MAIN AND UNDER TRINITY
- COMMERCE - AVOID DOWNTOWN CONSTRAINTS DIAGONAL ACROSS I-35E
- COMMERCE - AVOID DOWNTOWN CONSTRAINTS DIAGONAL ACROSS TRINITY
- MANAGED LANE - BETWEEN PARKING GARAGE AND CONVENTION CENTER
- MANAGED LANE - PLATFORM UNDER TCR
- NORTH OF I-30 CONNECT TO TCR
- MANAGED LANE - PLATFORM NORTH OF I-30
- RIVERFRONT PLATFORM NORTH OF I-30
- RIVERFRONT PLATFORM SOUTH OF I-30
- MANAGED LANE - SOUTH EXIT - EAST
- UPRR - SOUTH EXIT - WEST
- MANAGED LANE - SOUTH EXIT - WEST
- DALLAS STATION AREA

CONCEPTUAL
FOR DISCUSSION ONLY

NO.	REVISIONS	BY	DATE

HNTB
HNTB Corporation
The HNTB Companies
Engineers Architects Planners
Firm Registration Number 420

North Central Texas Council of Governments

DALLAS-FORT WORTH
HIGH-SPEED
TRANSPORTATION CONNECTIONS
I-30 CORRIDOR ALTERNATIVES

SHEET NO.

DOWNTOWN DALLAS
CONNECTION CONCEPTS

10/5/2021 6:19:25 PM

pw:\\pw-inr.hntb.org:PWCentralDiv\Documents\Dallas Projects\73631 DFW HSR-HYPERLOOP EIS\TechProd\CADD\Working Files\IMC\Dallas\73631_Dallas Connections.dgn

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

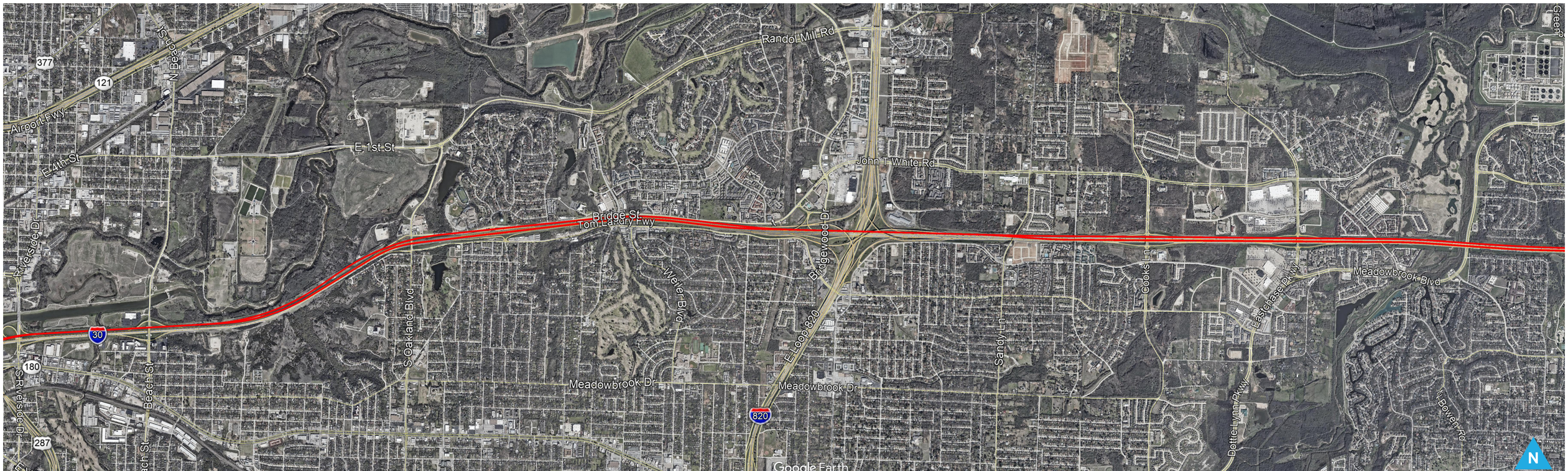
Oct. 2021

North Central Texas Council of Governments

POTENTIAL CORRIDOR ALIGNMENT

RIVERSIDE DRIVE IN FORT WORTH TO WEST OF FIELDER ROAD IN ARLINGTON

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

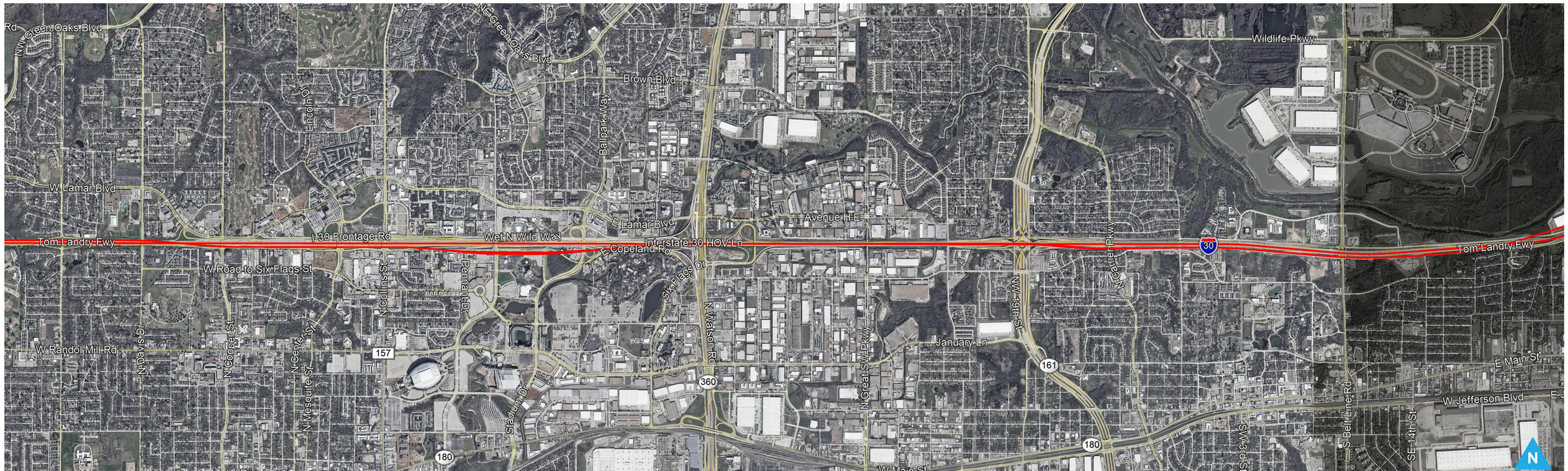
Oct. 2021

North Central Texas Council of Governments

POTENTIAL CORRIDOR ALIGNMENT

WEST OF FIELDER ROAD IN ARLINGTON TO MACARTHUR BLVD IN GRAND PRAIRIE

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

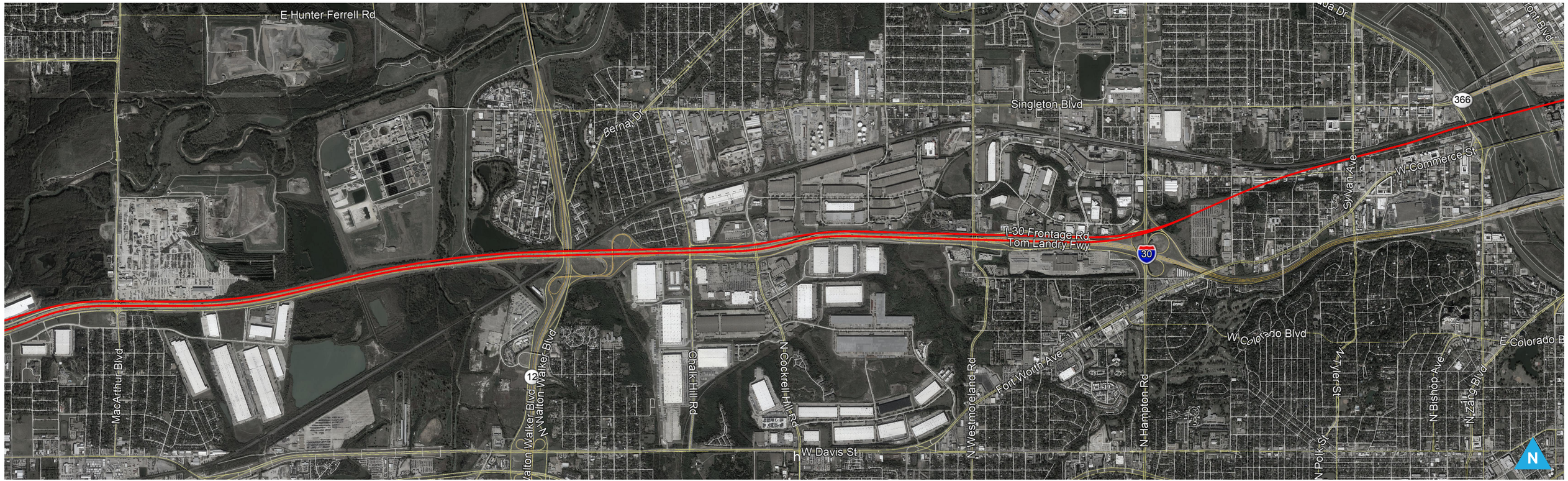
Oct. 2021

North Central Texas Council of Governments

POTENTIAL CORRIDOR ALIGNMENT

MACARTHUR BLVD IN GRAND PRAIRIE TO TRINITY RIVER IN DALLAS

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



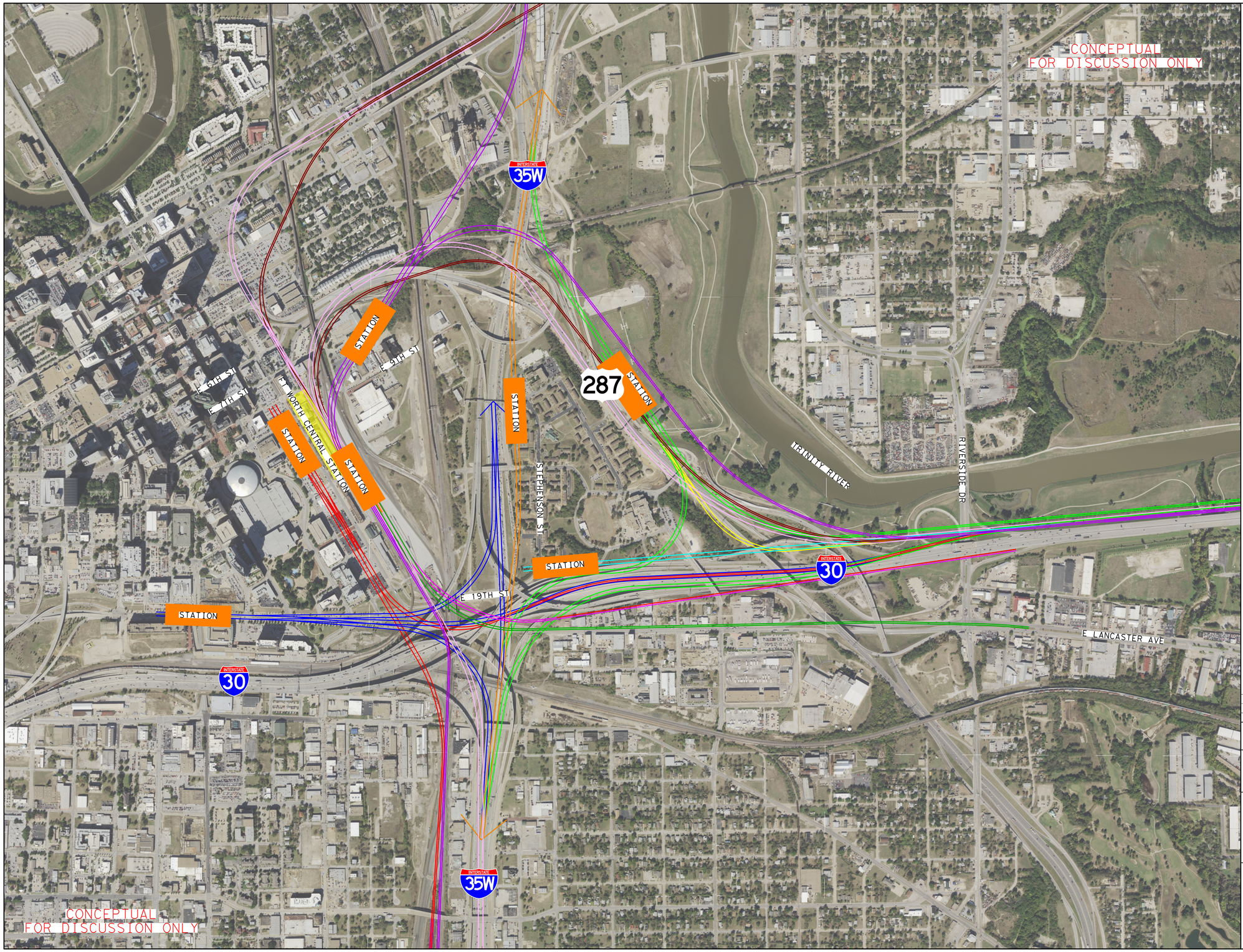
DFW HIGH-SPEED TRANSPORTATION
CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

PRELIMINARY URBAN CONNECTION CONCEPTS
FORT WORTH

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH



0 500 1000 1500 2000
HORIZ. SCALE IN FEET

LEGEND

- ADJACENT TO CENTRAL STATION - BELOW GRADE
- W LANCASTER AVENUE - BELOW GRADE
- EAST OF US 287 - SPLIT PLATFORM
- EAST OF US 287
- EAST OF US 287 - SPLIT PLATFORM OPTION 2
- BUTLER PLACE - PARALLEL TO I-30
- CENTRAL STATION - SOUTH ENTRANCE PARALLEL TO I-30
- CENTRAL STATION - SOUTH ENTRANCE LANCASTER AVENUE
- CENTRAL STATION - NORTH ENTRANCE ELEVATED
- CENTRAL STATION - NORTH ENTRANCE TUNNEL
- CENTRAL STATION - NORTH ENTRANCE ELEVATED OPTION 2
- FORT WORTH CENTRAL STATION AREA

CONCEPTUAL
FOR DISCUSSION ONLY

NO.	REVISIONS	BY	DATE

HNTB Corporation
The HNTB Companies
Engineers Architects Planners
Firm Registration Number 420

North Central Texas Council of Governments

DALLAS-FORT WORTH
HIGH-SPEED
TRANSPORTATION CONNECTIONS
I-30 CORRIDOR ALTERNATIVES

DOWNTOWN FORT WORTH
CONNECTION CONCEPTS

SHEET NO.

10/6/2021 9:15:23 AM

pw:\\pw-int.hntb.org:PWCentralDiv\Documents\Dallas Projects\73631 DFW HSR-HYPERLOOP EIS\TechProd\CADD\Working Files\IMC\Ft. Worth\73631_Ft Worth Concepts.dgn

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

STATION AREA ECONOMIC DEVELOPMENT OPPORTUNITY

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

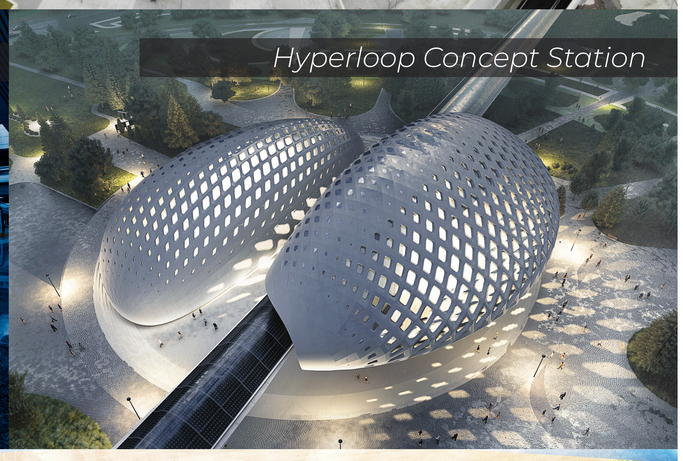
STATIONS

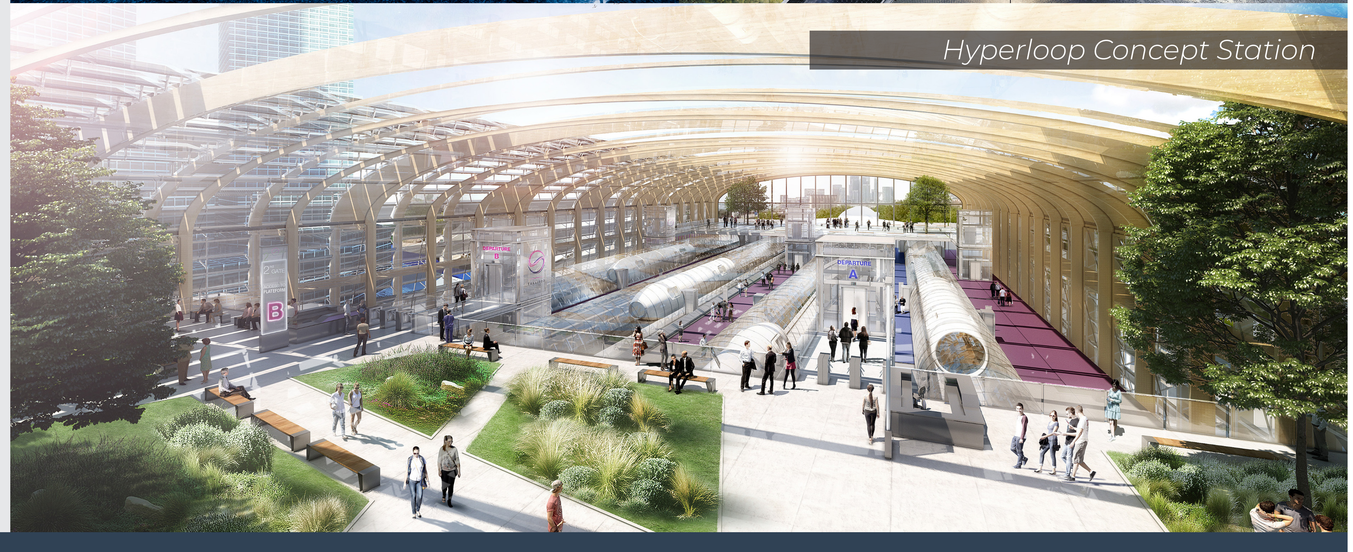
High-speed stations are typically much larger than commuter/light rail stations:

- Large economic development impact potential
- High-density developments surrounding stations
- Serve as huge multimodal hubs for entire regions

Hong Kong West Kowloon Station

Station Platform Concept


Hyperloop Concept Station



Hyperloop Concept Station

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

NEXT STEPS: PHASE 2

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Two-year timeframe anticipated

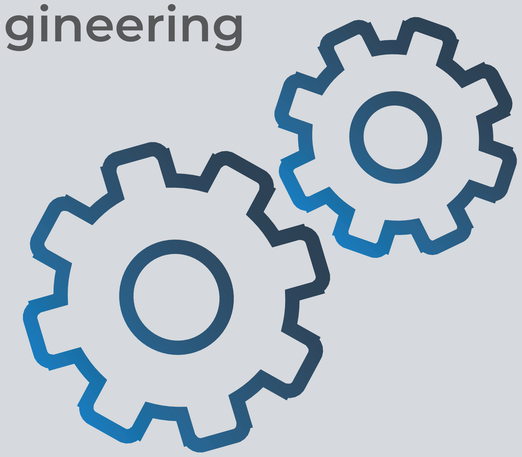
Financial and **Project Management** Plans

Public, Stakeholder, and **Agency** outreach

Environmental document in accordance with NEPA including, but not limited to:

- Community impacts
- Cultural resources
- Natural environment
- Noise/Vibration
- Environmental Justice analysis

Preliminary Engineering



DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021

North Central Texas Council of Governments

STAY CONNECTED

HIGH-SPEED TRANSPORTATION
DALLAS-FORT WORTH

Project Website
nctcog.org/dfw-hstcs

Get
Project Information

Ask a Question or
Leave Feedback
and outreach suggestions

Find
Public Meeting
dates and virtual access

Request
a Group or Event
Presentation

Subscribe
to the High-Speed News
and receive meeting alerts

Contact
Rebekah Gongora
Communications Manager
682.433.0477
rgongora@nctcog.org

DFW HIGH-SPEED TRANSPORTATION CONNECTIONS STUDY

Oct. 2021
North Central Texas
Council of Governments