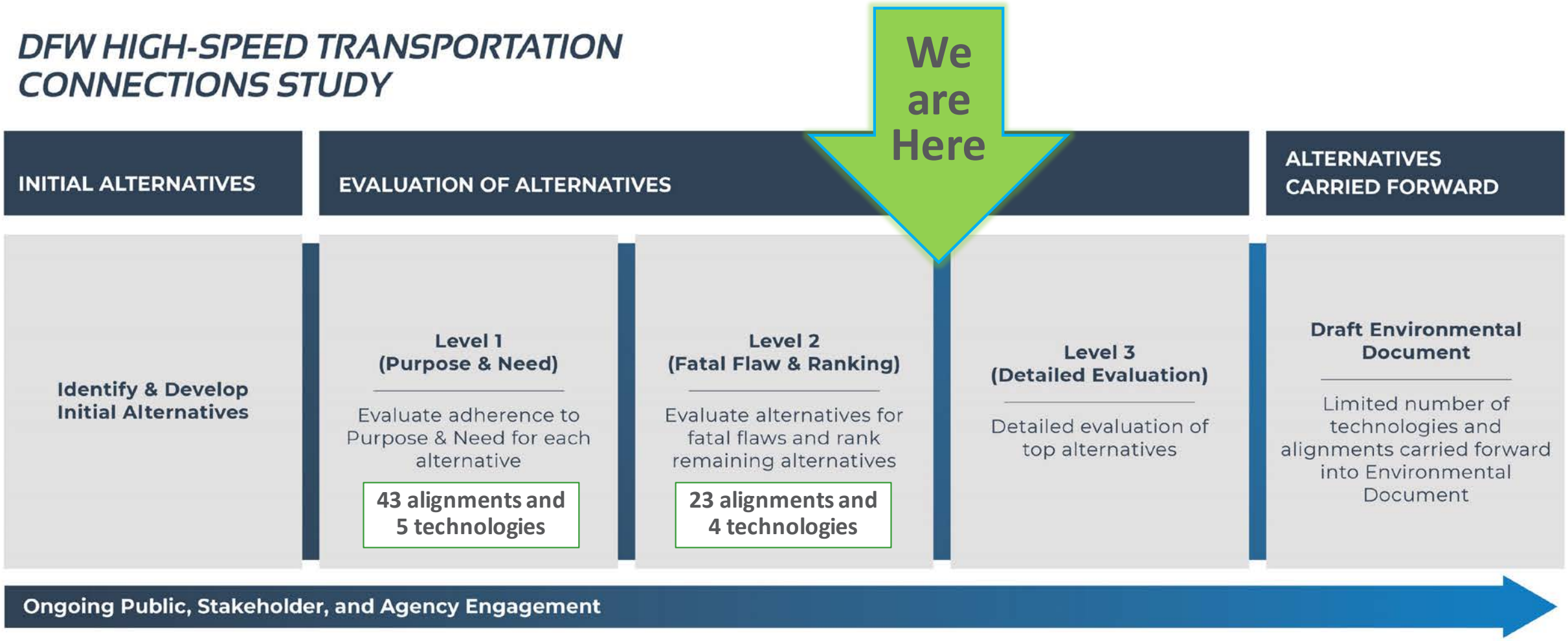
Screening Process and Level 1 & 2 Results

Evaluation Methodology

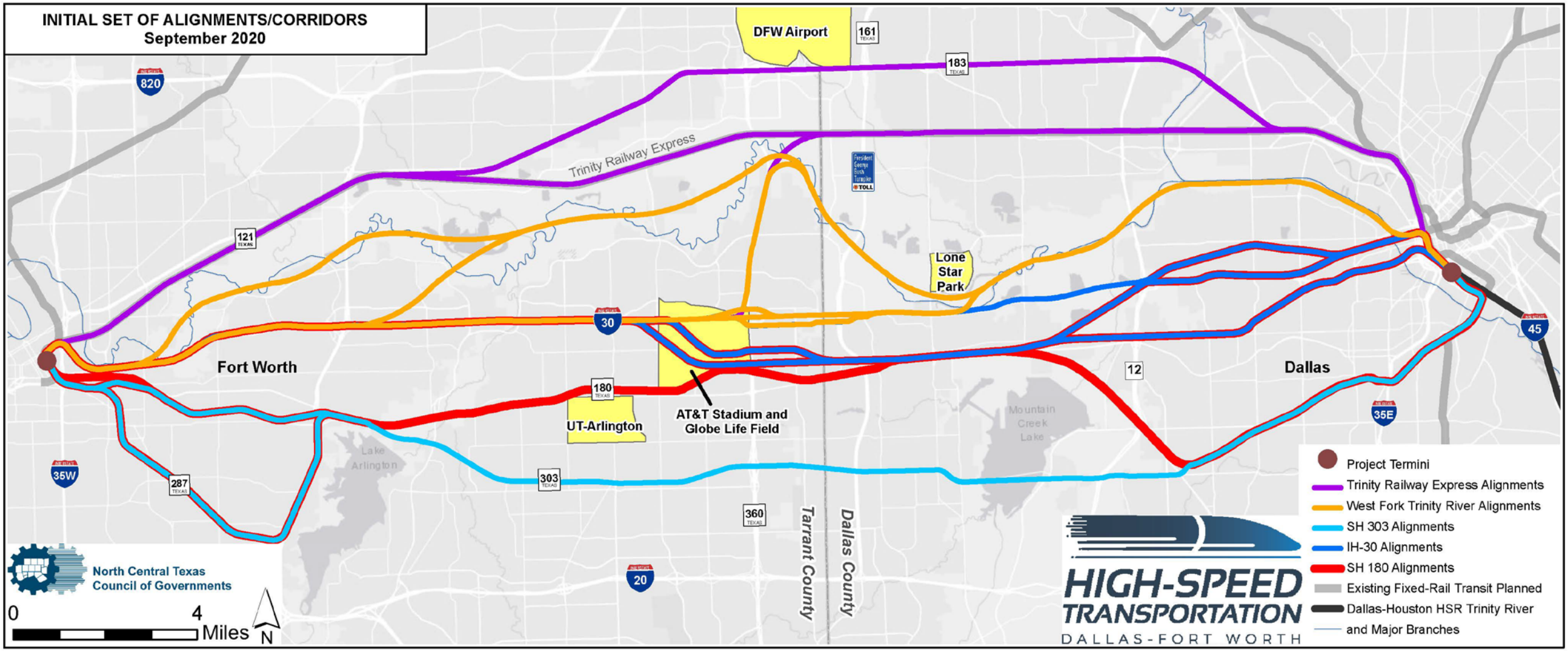


Initial Alignments/Corridors

- Initial alignments developed based on previous studies
- Trying to use existing transportation corridors
- Right-of-Way may be public or private, dependent upon the method used for project delivery
- All alignments connect to the proposed Dallas high-speed rail station and the Fort Worth Central Station

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

Initial Set of Alignments/Corridors



Initial Modes of Transportation

Conventional

Higher-Speed

High-Speed

Maglev

Hyperloop

Emerging Technologies

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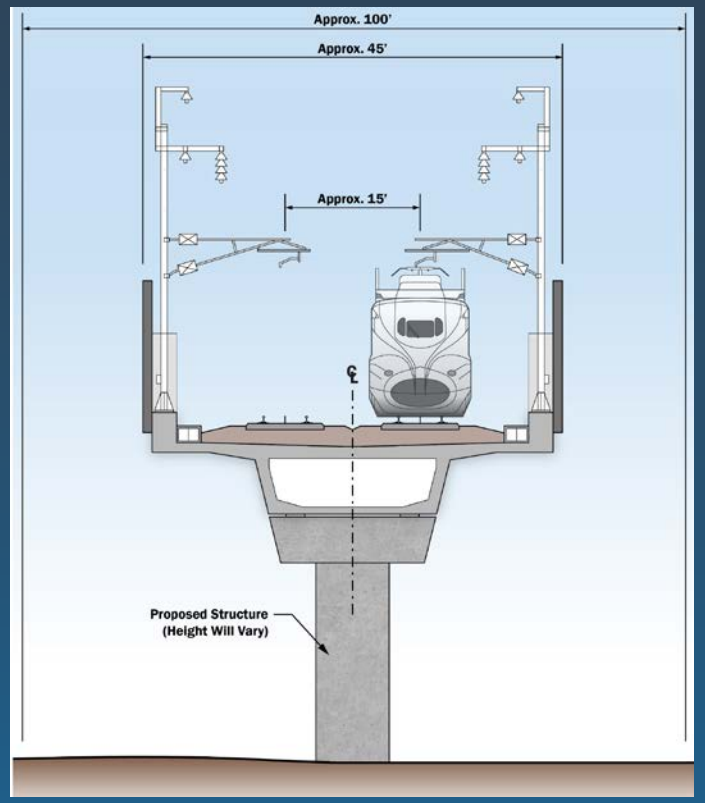
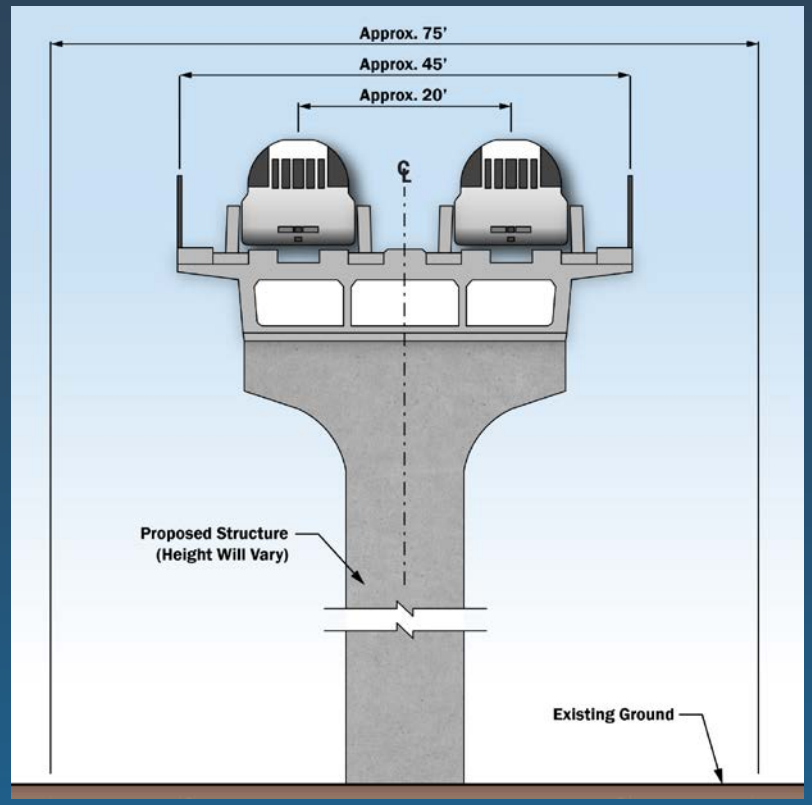
Potential Typical Sections

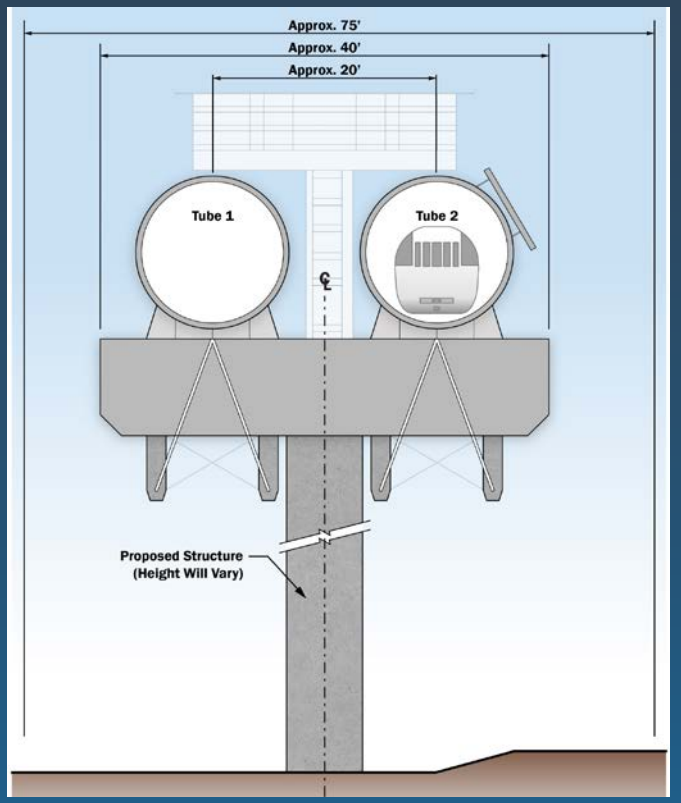
- High-Speed



- Maglev



- Hyperloop



Graphic by HNTB

Screening Criteria by Levels

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

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- Constructability/Operability

Level 1 Screening Results

Level 1 (Primary)

Serve Downtowns of Dallas and Fort Worth?

- All 43 alignments pass

Faster Travel Time (20 mins or faster)?

- Conventional Rail: No alignments pass; eliminated from further consideration
- Higher-Speed Rail: 8 out of 43 alignments pass
- High-Speed Rail: 39 out of 43 alignments pass
- Maglev: All 43 alignments pass
- Hyperloop: All 43 alignments pass

Level 1 (Secondary)

Recommended eliminating from further considerations:

- All Trinity Railway alignments
- All West Fork Trinity River alignments
- All SH 303 alignments
- Five IH-30 alignments
- Two SH 180 alignments

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

Level 1 Screening Results (Alignments)

	Criteria	Description	TRE Alignments					West Fork Trinity River Alignments					
			1	2	3	4	5	6	7	8	9	10	11
Purpose & Need Criteria	Safe	Number of infrastructural challenges to building a closed corridor.	Low	Low	Low	Low	Low	Med	Low	Low	Low	Low	Low
	Convenient	Ease of access to other existing and planned transportation options (roadways, trails, existing Park & Rides, etc.)	High	High	High	High	High	High	High	High	High	High	High
	Connect to existing regional/light rail in DFW	Could the alternative provide connections to existing light, regional, and commuter rail	High	High	High	High	High	High	High	High	High	High	High
	Improved access to major activity centers	Does the alignment and/or technology offer the potential for mid-alignment station alternatives access to major activity centers (e.g., 2,000+ employment in an area, activity areas significiant to the community, etc.) within 1/4 mile of each alignment in the middle portion of the study area (between Loop 12 and 820)?	High	Med	Low	Low	Med	Low	Low	Med	Med	Med	Med
		Advance alignment into Level 2 Screening (yes/no)?	No	No	No	No	No	No	No	No	No	No	No

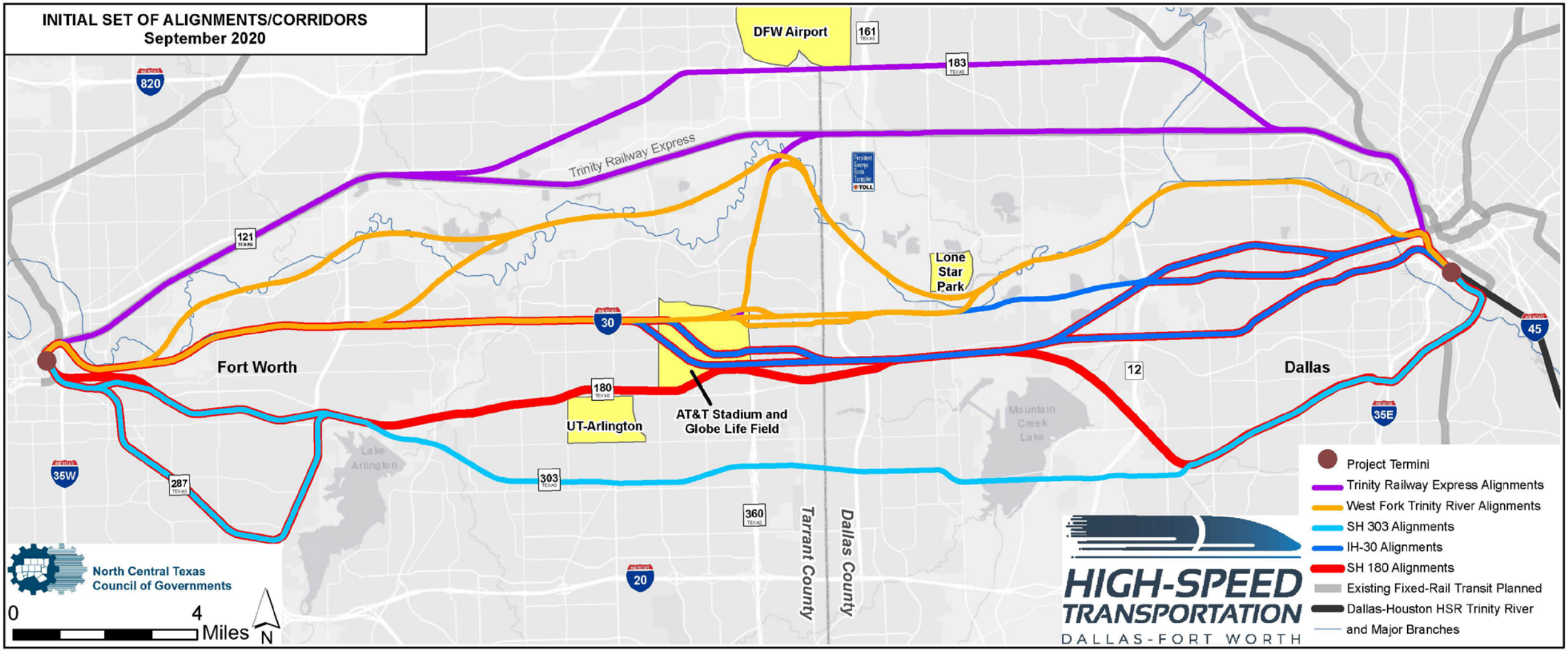
Level 1 Screening Results (Alignments)

	Criteria	Description	IH-30 Alignments																
			12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Purpose & Need Criteria	Safe	Number of infrastructural challenges to building a closed corridor.	Med	Med	Med	Med	Low	Med	Med	Low	Low	Med	Med	Low	Med	Med	Med	Low	Med
	Convenient	Ease of access to other existing and planned transportation options (roadways, trails, existing Park & Rides, etc.)	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High
	Connect to existing regional/light rail in DFW	Could the alternative provide connections to existing light, regional, and commuter rail	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High
	Improved access to major activity centers	Does the alignment and/or technology offer the potential for mid-alignment station alternatives access to major activity centers (e.g., 2,000+ employment in an area, activity areas significiant to the community, etc.) within 1/4 mile of each alignment in the middle portion of the study area (between Loop 12 and 820)?	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med
		Advance alignment into Level 2 Screening (yes/no)?	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes

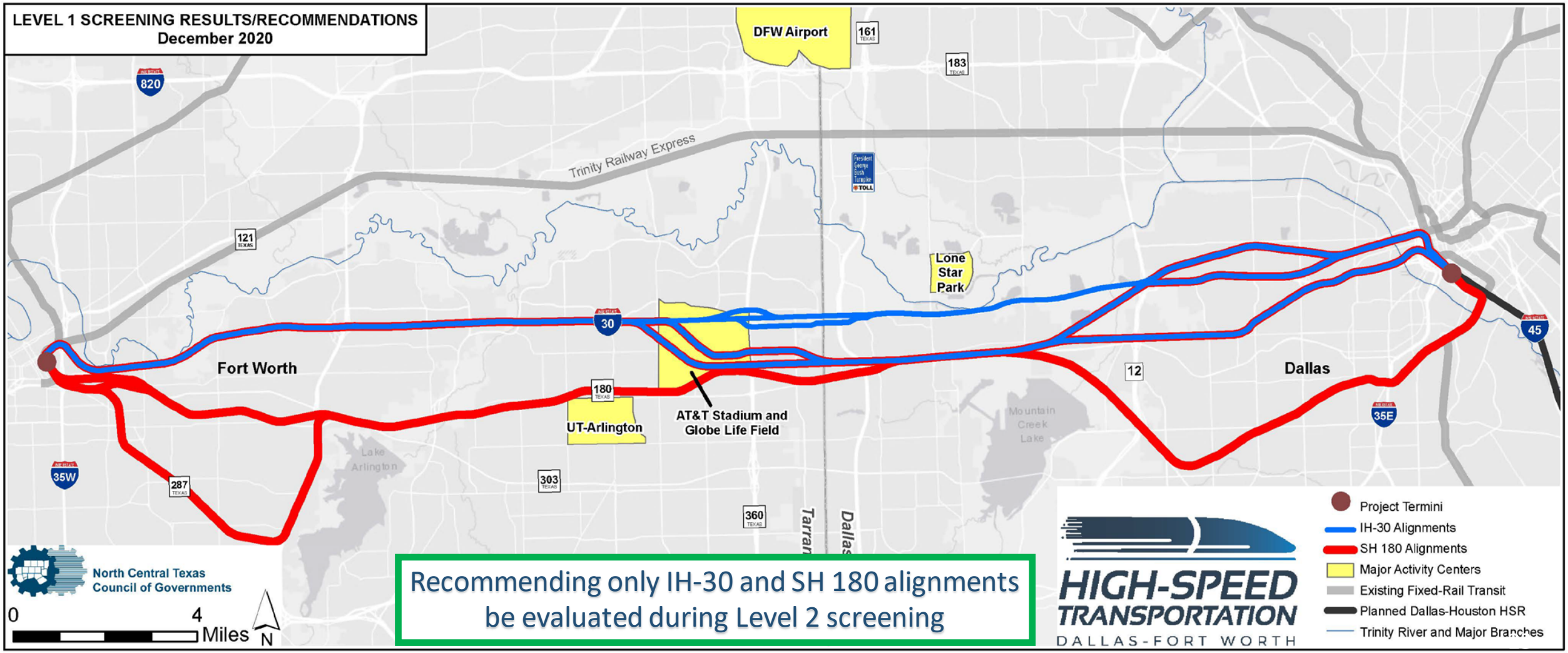
Level 1 Screening Results (Alignments)

	Criteria	Description	SH 180 Alignments													SH 303 Alignments	
			29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Purpose & Need Criteria	Safe	Number of infrastructural challenges to building a closed corridor.	High	High	Med	Med	Low	Med	High	High	Med	Med	Low	Med	High	High	High
	Convenient	Ease of access to other existing and planned transportation options (roadways, trails, existing Park & Rides, etc.)	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High
	Connect to existing regional/light rail in DFW	Could the alternative provide connections to existing light, regional, and commuter rail	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High
	Improved access to major activity centers	Does the alignment and/or technology offer the potential for mid-alignment station alternatives access to major activity centers (e.g., 2,000+ employment in an area, activity areas significant to the community, etc.) within 1/4 mile of each alignment in the middle portion of the study area (between Loop 12 and 820)?	Med	Med	Med	Med	High	Med	Med	Med	Med	Med	Med	Med	Med	Low	Low
		Advance alignment into Level 2 Screening (yes/no)?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No

Initial Set of Alignments/Corridors



Alignment/Corridor Recommendations based on Level 1 Screening



Level 1 Screening Results (Mode)

Criteria		Description	Higher-Speed Rail	High-Speed Rail	Maglev	Hyperloop
Purpose & Need Criteria	Safe	Have design and safety guidelines been established (Foreign or Domestic)?	High	Med	Med	Low
	Reliable	Can the alternative mode perform reliably under all most routinely occurring North Texas weather conditions (yes/no)?	High	High	High	High
		Can the alternative mode perform reliably under all traffic conditions (rail or roadway) on this alignment (yes/no)?	High	High	High	High
	Convenient	Passenger Experience (comfort with technology paradigm)	High	High	High	Low
		Technology Convenience	Low	High	High	High
	Linkages to other high-performance systems in Texas	Ease of transfer to Dallas-Houston HSR	Med	High	Med	Med
		Ease of transfer to FW-Laredo System	Med	Med	Med	Med
		Long Distance Capability/Expandability	High	High	High	High
		Advance alignment into Level 2 Screening (yes/no)?	Yes	Yes	Yes	Yes

Screening Criteria by Levels

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

Level 2 Screening Results

Alignments

- IH-30 Alignments
  - Seven of 12 alignments carried forward into Level 3 screening
  - Six of the seven alignments combined into two alignments
- SH 180 Alignments
  - Three of 11 alignments carried forward into Level 3 screening

Modes

- Higher-speed rail eliminated from further consideration
- High-speed rail, maglev, and hyperloop carried forward into Level 3 evaluation

For more detailed information on Level 1 and Level 2 screenings go to:
www.nctcog.org/dfw-hstcs

>> Project Information

>> Level 1 & 2 Screening Results

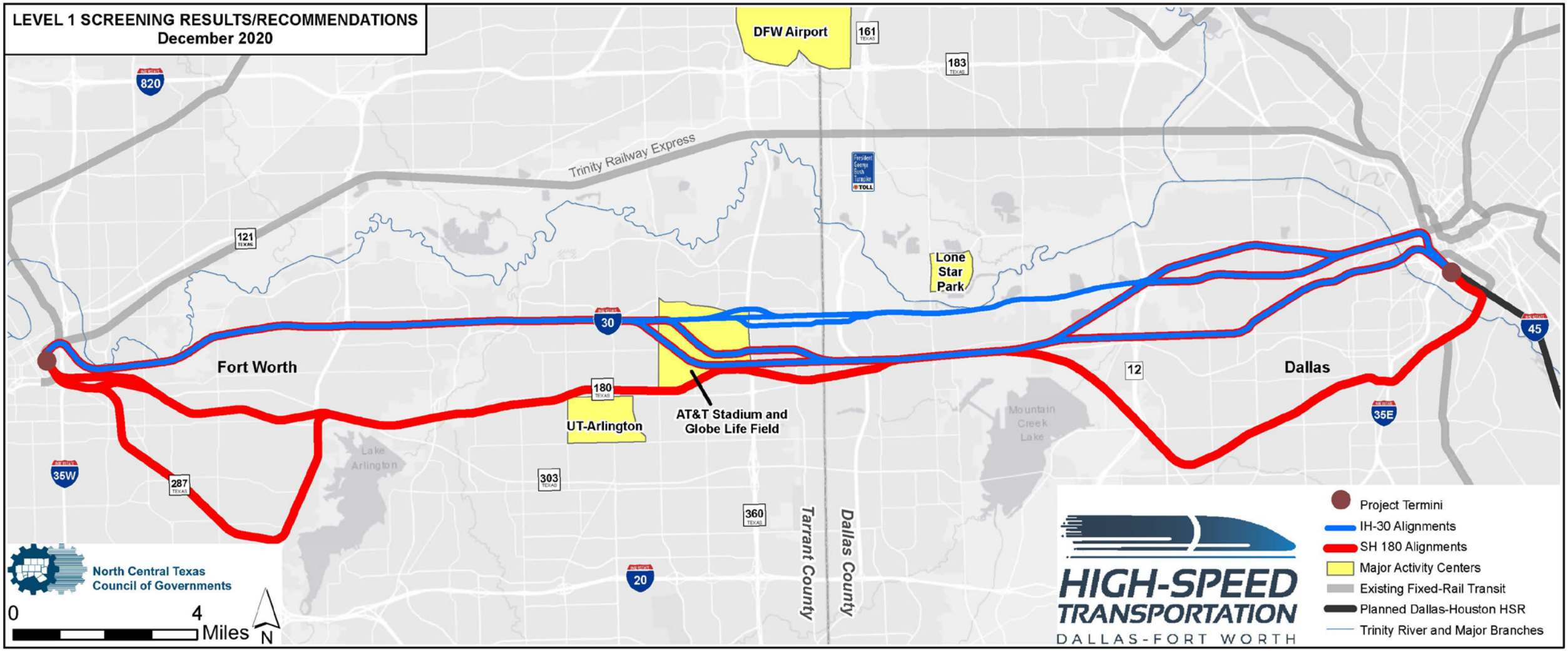
Level 2 Screening Results (Alignments)

			IH-30 Alignments										
	Criteria	Description	12	13	14	15	17	18	21	22	24	25	26	28
Proximity to Sensitive Social, Biological, or Cultural Areas	Potential residential Impacts	% length adjacent to residential areas; 500 feet (250 feet on each side of centerline)	Med	High	High	High	High	High	Med	Med	Low	Med	High	Med
	Potential Major Commercial/Industrial/ Warehouse impacts	Number of potential impacts to major commercial, industrial, and warehouse facilities	Med	High	High	High	High	Med	Low	Med	Low	Med	Med	Low
	Potential wetland, water body, and floodplain impacts	% length adjacent to wetlands, water bodies, and floodplains; 500 feet (250 feet on each side of centerline)	Low	Low	Low	Low	Low	Low	Med	Med	Med	Med	High	Med
	Potential parks impacts	% length adjacent to parks and designated open spaces; 500 feet (250 feet on each side of centerline)	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med
Potential community impacts	Potential community facility impacts	Number of Community facilities within 500 feet (250 feet on each side of centerline)	High	High	High	High	High	High	Med	Med	Med	Med	Med	Med
	Potential Community Cohesion Impacts	Number of neighborhoods with potential community cohesion impacts	High	High	Med	High	Med	High	Med	Med	Med	Med	Med	Med
	Potential environmental justice impacts	Total Environmental Justice Index Above-Average Block Groups; 500 feet (250 feet on each side of centerline)	High	High	High	High	High	High	High	High	High	High	High	Med
		Alignment Ranking (Tier 1, Tier 2, Tier 3)	1	1	1	1	1	1	2	2	3	2	1	3
			Essentially one alignment			Essentially one alignment								

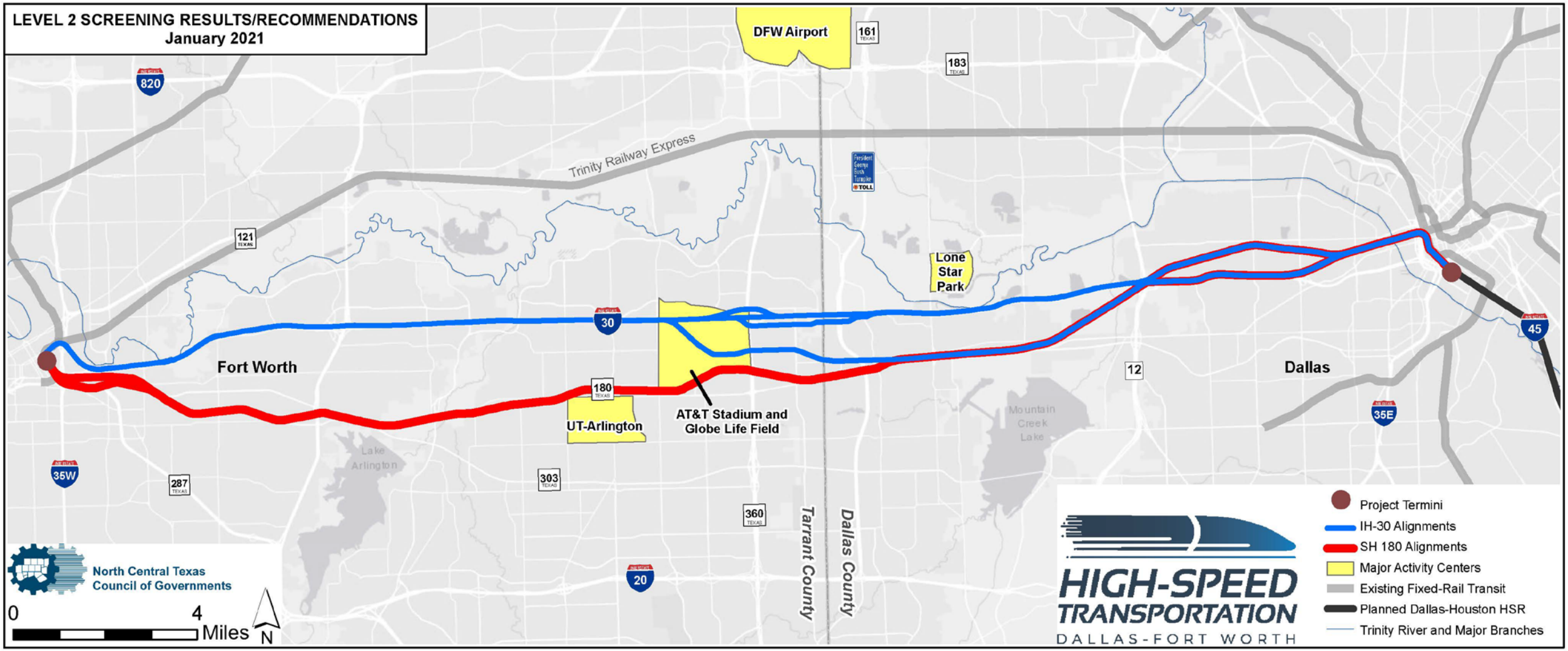
Level 2 Screening Results (Alignments)

			SH 180 Alignments										
	Criteria	Description	29	30	31	32	34	35	36	37	38	40	41
Proximity to Sensitive Social, Biological, or Cultural Areas	Potential residential Impacts	% length adjacent to residential areas; 500 feet (250 feet on each side of centerline)	Low	Med	Med	High	Low	Med	Med	Med	Med	Low	Low
	Potential Major Commercial/Industrial/ Warehouse impacts	Number of potential impacts to major commercial, industrial, and warehouse facilities	Low	Med	High	High	Med	High	High	High	High	Med	High
	Potential wetland, water body, and floodplain impacts	% length adjacent to wetlands, water bodies, and floodplains; 500 feet (250 feet on each side of centerline)	Low	Low	Low	Med	Med	Low	Low	Med	Med	Med	Low
	Potential parks impacts	% length adjacent to parks and designated open spaces; 500 feet (250 feet on each side of centerline)	Low	Low	High	High	High	Med	Med	High	High	High	Med
Potential community impacts	Potential community facility impacts	Number of Community facilities within 500 feet (250 feet on each side of centerline)	Med	Med	Low	Low	Low	Low	Low	Low	Low	Low	Low
	Potential community cohesion Impacts	Number of neighborhoods with potential community cohesion impacts	Low	Low	Med	Med	Med	Med	Med	High	High	High	Med
	Potential environmental justice impacts	Total Environmental Justice Index Above-Average Block Groups; 500 feet (250 feet on each side of centerline)	Med	Med	Med	Med	Med	Low	Low	Med	Med	Med	Low
		Alignment Ranking (Tier 1, Tier 2, Tier 3)	3	3	2	1	3	3	3	1	1	2	3
								Essentially one alignment					

Alignment/Corridor Recommendations Based on Level 1 Screening



Alignment/Corridor Recommendations Based on Level 2 Screening



Level 2 Screening Results (Modes)

	Criteria	Description	Modes			
			Higher-Speed Rail	High-Speed Rail	Maglev	Hyperloop
Technology Maturity, Regulatory Approval	Technology Maturity (Guideway Infrastructure)	Technology Readiness Levels (TRLs) for guideway infrastructure including rail, tunnel, tube, switching, etc.	High	High	High	Med
	Technology Maturity (Wayside Infrastructure)	Technology Readiness Levels (TRLs) for wayside infrastructure including substations, vacuum systems, emergency response systems, etc.	High	High	High	Med
	Available design criteria	Design criteria available for technology	High	High	High	Low
	Regulatory Approval Complexity	U.S. Regulatory framework by technology (process in place)	High	Med	Low	Low
Operational Considerations	Business plan to move goods in addition to passengers	Vehicle and infrastructure configuration support the transportation of high-volume goods and are addressed in business or operations plans	Low	Low	High	High
	Ability to interline	Ability to interline with existing projects (No Build)	Low	High	Low	Low
	Ability to Interline with future planned projects	Ability to interline with future planned projects	Low	High	High	High
	System capacity	Operational system capacity	Med	High	High	High
	Travel Demand	Projected range of ridership based on travel demand modeling results	Low	Med	Med	High
	Ease of adding infill stations	Ease of integrating future infill stations for each technology	Med	Low	Med	High
	Travel Time	Number of alignments viable by technology based on a 22 minute or less travel time, assuming a mid-point station	Low	Med	High	High
		Advance mode into Level 3 Screening (yes/no)?	No	Yes	Yes	Yes

Modes of Transportation

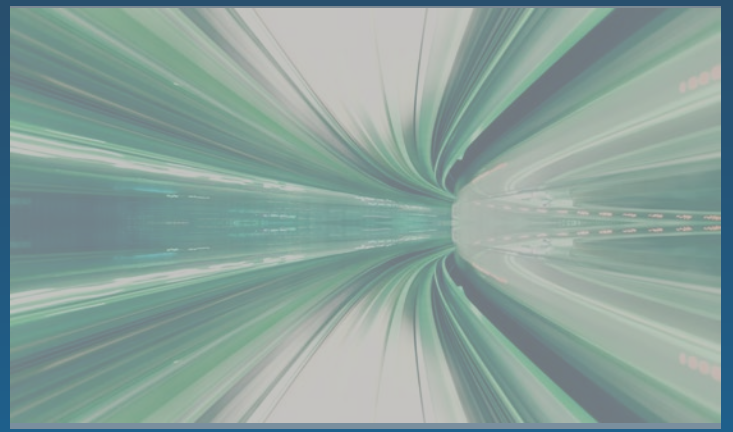
Conventional

Higher-Speed

High-Speed

Maglev

Hyperloop



Emerging Technologies

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